

IMPLEMENTING STANDARDIZED DEPRESSION SCREENING FOR ADULTS IN A
RURAL SETTING: A QUALITY INITIATIVE

by

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of the requirements for the degree

of

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in

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ABSTRACT

Background: Major depressive disorder (MDD) imposes a significant burden, affecting 15-17% of the population. Early detection and intervention are crucial to mitigate adverse health outcomes associated with untreated depression. Clinical guidelines recommend regularly screening patients for depression within the primary care setting. The Patient Health Questionnaire (PHQ) is a widely recognized and validated tool used for depression screening.

Local Problem: A rural clinic in Eastern Montana elected to implement a standardized process for administering PHQ-2 and PHQ-9 assessments to their adult primary care population.

Methods: The Iowa Model guided the implementation process over eight weeks.

Intervention: Nursing staff administered a PHQ-2 to eligible adult patients during primary care appointments. A PHQ-2 score of ≥ 3 triggered the nursing staff to administer the PHQ-9. Positive PHQ-9 scores (≥ 5) prompted provider notification and subsequent evaluation for depression. Patients diagnosed with depression or other mental health concerns received appropriate interventions and treatments based on clinical expertise. Data was collected and deidentified before entry into a spreadsheet for further analysis.

Results: Nursing staff administered a PHQ-2 to 71.8% (n=326) of eligible patients over the eight weeks. Of those screened, 46 had a positive PHQ-2 result, and 30 had a positive PHQ-9 result. Providers evaluated 100% of patients with a positive PHQ-9, and all were determined to have varying severities of depression.

Conclusion: The findings supported the efficacy of the PHQ in identifying depression within a primary care setting. Moreover, these measures promise to enhance mental health care delivery and outcomes in the rural primary care setting.

CHAPTER ONE

REVIEW OF THE LITERATURE

Introduction

The Centers for Disease Control and Prevention (2023) reports 15 million office visits in 2019 identified depression as the primary diagnosis. When left unchecked or inadequately treated, depression can lead to detrimental outcomes such as self-harm or suicide. In 2021, suicide accounted for 48,183 deaths in the United States (Centers for Disease Control and Prevention, 2023). Not only does depression carry detrimental risks to patients and their families, but it also contributes to over \$210 billion in annual healthcare costs (Maurer et al., 2018). Primary care providers are one of the first lines of defense for patients seeking help with mental illness and disorders, particularly in areas without access to mental health specialists. Healthcare facilities in rural areas of Montana feel the strain of managing patients with worsening mental health symptoms. Rural clinics and hospitals cannot provide the necessary interventions as many lack resources and specialized training. A small clinic in Eastern Montana has identified addressing the local mental health crisis as one of its top priorities. Stakeholders have recognized early screening and treatment of mental illness as a gap in their current practice. The clinical site hopes to increase recognition of depression during family practice visits to potentially decrease the occurrence of patients presenting to urgent care in a mental health crisis.

The U.S. Preventative Services Task Force (USPSTF) and the American Academy of Family Physicians (AAFP) advise regularly screening adult patients for depression. The USPSTF (2023) considers suicide and depression screenings a Grade B recommendation. A Grade B

indicates a moderate or substantial benefit is highly likely for patients, and healthcare providers should offer the service (U.S. Preventative Services Task Force, 2023). The Patient Health Questionnaire (PHQ) is commonly recognized by providers and validated to screen patients for depression using either a two- or nine-item questionnaire. Although the PHQ-2 is brief, the sensitivity is similar to the PHQ-9 at 91% and 94%, respectively (Maurer et al., 2018). The PHQ-9 is noted to have higher specificity at 92% compared to the PHQ-2 at 78% (Maurer et al., 2018). A positive PHQ-2 requires a follow-up with a PHQ-9 questionnaire and a clinical examination.

The rural Montana clinical site mentioned above only administers the PHQ-9 in isolated circumstances. Office visits that currently include a PHQ-9 are well-woman exams, adolescent well-child visits, and symptomatically presenting patients. The PHQ-9 is not consistently administered to the patients above, even though it is considered standard practice. The stakeholders would like to investigate how evidence-based questionnaires, such as the PHQ-2 or PHQ-9, may improve the identification and early treatment of depression in the adult patient population.

Methods

The primary objective of the literature review is to identify evidence supporting the use of PHQ screening in the primary care setting. The population of interest will be limited to adults 18 or older, as this is the largest demographic in the current clinical location. Although the process is imperfect, the most consistent screenings at the clinical site are currently completed on adolescents, younger women, and symptomatic patients. Therefore, these populations will not be the primary focus despite being in higher-risk categories. Articles discussing PHQ-2 and PHQ-9

will be the focus of the literature review as requested by stakeholders. Costs of screening intervention implementations are also considered valuable information as minimal financial resources are available for this project.

Search Strategy

The databases searched while creating the scoping literature review included the Montana State University Online Library, PsychInfo, and CINAHL. The keywords for database searches included PHQ, patient health questionnaire, PHQ-2, PHQ-9, depression, prevention, primary care, general practice, and family practice. Words of the same category were combined using OR, while opposing categories were combined using AND as necessary. The terms depression and general practice were omitted from final searches as they were determined to be either too vague or non-contributory.

Inclusion Criteria

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram guided the selection of literature for review. Inclusion criteria for articles are listed as follows:

1. Articles written within the last five years (2019-2023)
2. Utilization of PHQ-2 or PHQ-9
3. Primary care setting
4. Outpatient status only
5. Study participants are adults aged 18 years or older
6. Full-text available
7. Written or available in English

8. Peer reviewed

Articles were excluded if the PHQ was explicitly used to validate an alternative screening tool. Additionally, articles focusing on a pediatric patient population were omitted. The inclusion and exclusion criteria helped the literature review focus on information pertinent to PHQ screening within the adult primary care setting. See Appendix B for the PRISMA diagram, which outlines the literature selection process.

Results

Literature Search

The initial search resulted in 249 articles. The attached PRISMA diagram (Appendix B) represents the deductive statistics used to find the final articles. After fine-tuning criteria, reading through abstracts, and entering data into the evidence table, the number of articles meeting this scoping review's requirements decreased to ten. Of the ten articles reviewed, n=5 were cohort studies (Bridges et al., 2019; Molebatsi et al., 2020; Murillo et al., 2019; Scoppetta et al., 2021; Teusen et al., 2022), n=3 were cross-sectional studies (Aslan et al., 2020; Caneo et al., 2020; Dadfar et al., 2019), n=1 was a randomized control trial (Moehring et al., 2021), and n=1 was a systematic review (Costantini et al., 2021). The sample size for each study ranged from 157 to 4,767 participants. The systematic review evaluated 41 studies between 1995 and 2018, each focusing on the PHQ-9 (Costantini et al., 2021). Studies investigating PHQ-2 were n=3 (Caneo et al., 2020; Dadfar et al., 2019; Scoppetta et al., 2021), those looking at both PHQ-2 and PHQ9 were n=2 (Bridges et al., 2019; Murillo et al., 2019), and studies focusing on PHQ-9 were n=5

(Aslan et al., 2020; Costantini et al., 2021; Moehring et al., 2021; Molebatsi et al., 2020; Teusen et al., 2022).

Synthesis of the Literature

PHQ-2 vs. PHQ-9 Bridges et al. (2020) evaluated the strengths and weaknesses of the PHQ-2 when administered to three diverse groups. The groups were divided into the following categories: Spanish-speaking Latinxs (n=490), English-speaking Latinxs (n=134), and non-Latinx Whites (n=690). The results indicated the PHQ-2 may overidentify mood disorders such as major depressive disorder (MDD) by 35% in Spanish-speaking patients (Bridges et al., 2019).

Researchers in an Iranian study of college-age students determined the PHQ-2 works well for efficiently screening a large sample of individuals; however, the researchers noted a positive PHQ-2 required follow-up with a more in-depth assessment (Dadfar et al., 2019). Caneo et al. (2020) reported no significant changes in results when PHQ-2 scores were adjusted for age, gender, and education level. Compared to the PHQ-9, the PHQ-2 displayed a similar detection rate for MDD (18% and 18.4%, respectively) (Caneo et al., 2020).

Although the PHQ-9 is often recommended as a higher level of examination to follow a PHQ-2, the questionnaire also has caveats. Aslan et al. (2020) observed elderly patients and patients with chronic illness may have false positives on PHQ-9 surveys due to somatic symptoms such as poor appetite, fatigue, and sleep disturbances. Teusen et al. (2022) suggested diagnostic evaluation used by a trained medical provider cannot be replicated by a screening assessment such as a PHQ-9.

Concerns for Cultural Diversity Murillo et al. (2019) compared rates of depression in 3626 adults in a retrospective cohort study. In the study, a PHQ-2 and PHQ-9 were administered

verbally by nursing staff during the rooming process. Researchers identified Spanish-speaking adults were significantly less likely to be screened than those who spoke English. None of the nurses were fluent in Spanish, but they did have access to a phone interpreter. Murillo et al. (2019) speculate time constraints likely played a factor in the decision to screen, considering using a phone interpreter lengthened the rooming process.

Bridges et al. (2020) hypothesized the PHQ-9 may be better for Spanish-speaking patients because it could help define a mood disorder from stress triggered by acculturation. Another consideration was Likert-style answers such as "several days" and "more than half the days" may be confusing due to translation perception. The language barrier could cause patients to select answers that do not correlate with their true feelings.

Molebatsi et al. (2020) remarked that although the PHQ-9 has been thoroughly vetted for American primary care, it still requires validation in other countries. The concept was recognized by multiple studies included in the review, which evaluated the use of the PHQ in foreign countries, including Botswana, Chile, Iran, Germany, and Columbia (Aslan et al., 2020; Caneo et al., 2020; Dadfar et al., 2019; Moehring et al., 2021; Molebatsi et al., 2020; Scoppetta et al., 2021). Molebatsi et al. (2020) and Scoppetta et al. (2021) used the Mini International Neuropsychiatric Interview (MINI) as a reference standard to correlate PHQ results. All international studies determined the PHQ screening to be valid and reliable in the designated countries when translated appropriately (Aslan et al., 2020; Caneo et al., 2020; Dadfar et al., 2019; Moehring et al., 2021; Molebatsi et al., 2020; Scoppetta et al., 2021).

Mental Health Stigma Mental health may be viewed differently depending on a person's culture, age, and background. Some patient's personal views or fear of judgment may cause them

to answer PHQ questions dishonestly (Bridges et al., 2019; Costantini et al., 2021). When speculating reasons why the medical staff in their study was hesitant to use an interpreter, Murillo et al. (2019) considered the idea that asking such personal questions through a translator may have come across as insensitive.

Route of Delivery Researchers suggest using a written PHQ in the patient's preferred language to standardize administration for patients who do not speak or read in English (Bridges et al., 2019; Caneo et al., 2020; Murillo et al., 2019). If the PHQ is administered verbally by clinic staff during intake, an interpreter may be necessary. As previously discussed, this may cause team noncompliance due to time constraints, leading to missed screening opportunities (Murillo et al., 2019).

Moehring et al. (2021) discussed how the mode of delivery could affect how patients respond to questions. Researchers suggest a need for further studies on how results differ when a PHQ survey is administered electronically, written, verbally in person, or over the phone (Moehring et al., 2021). Privacy, location, and comfort level with the individual asking questions should also be considered before using answers to a PHQ diagnostically (Costantini et al., 2021).

Discussion

Principal Findings

The most significant finding of the literature review was the consistent validation of the PHQ-2 and PHQ-9 as sensitive tools for identifying patients with depression. The PHQ-2 and PHQ-9 are inexpensive to implement and require minimal staff training. Screenings can be completed electronically, over the phone, or in person, which may increase flexibility and access.

Although there are many positive components surrounding the PHQ tools, there are a few disadvantages. As discussed in the results section, language and cultural barriers may contribute to inaccurate results. In some cases, the PHQ-2 may also be overly sensitive, requiring follow-up with a PHQ-9 and a thorough provider assessment. A screening assessment such as the PHQ-9 does not consider patient history, differential etiologies, or contextual factors, which may help properly diagnose the presence or absence of depression (Teusen et al., 2022). Ultimately, a provider should provide an assessment following any screening tool to evaluate potential false results and avoid an improper diagnosis.

Practice and Policy Implications

As directed by the USPSTF (2023), depression screenings should be offered to all patients 12 years and older. The efficacy of the PHQ-9 and PHQ-2 make them desirable questionnaires for primary care settings. The PHQ-2 is easy and time-effective; thus, it may be a valid option for the clinic to administer during every adult patient encounter. They should be aware of the potential for false positives and be prepared to evaluate patients accordingly. Patients with language or cultural barriers should be provided with a version written in their primary language or be offered an interpreter if available. Clinics should have a plan for non-English speaking patients before implementing a standardized process.

Another aspect to consider is a standardized route of administration for the PHQ. Some patients may experience increased comfort and provide more honest answers if the questions are self-administered and offered inconspicuously (Costantini et al., 2021; Teusen et al., 2022). The screening could occur on a mobile device or tablet before the appointment to allow the provider

time to review the results and address the topic appropriately with the patient. Regardless of how the screening is administered, the process should be handled respectfully and with care.

Conclusion

The evidence discussed in this scoping literature review consistently supports PHQ screenings as validated and effective for identifying patients with depression, particularly MDD. The PHQ-2 and PHQ-9 are practical options for implementation at a rural Montana clinic wanting to improve preventative mental health care within their family practice. The low-cost intervention could improve patient care and keep patients from evolving into a crisis state. Improving depression screening has the potential to identify undiagnosed mental health concerns, which could significantly improve patient care and outcomes. Subsequently, early diagnosis of depression and other disorders could prevent emergency visits related to exacerbated mental illness or suicide attempts. Early interventions and treatments could arguably decrease strain on the clinic's finances and resources by preventing urgent evaluation and management needs. If clinic staff understand how to use the PHQ and know its limitations, implementation is low risk while offering a much-needed preventative service to the community.

CHAPTER TWO

QUALITY IMPROVEMENT PROPOSAL

Introduction and Problem

The World Health Organization (WHO) reports over 700,000 suicide deaths worldwide, with 77% occurring in low to middle-income countries (World Health Organization, 2023). The actual rate of suicide internationally is likely even higher, considering issues with poor data collection and the illegality of suicide in some countries (World Health Organization, 2023). The United States is categorized as a high-income country; however, it has the highest suicide rate and lowest life expectancy compared to 11 countries of similar socioeconomic status (Tikkanen & Abrams, 2020). Suicide rates have steadily risen in the United States since 2001, with a 4% rate increase in 2021 (Garnett & Curtin, 2023). Martinez-Ales et al. (2020) speculate access to lethal means, increasing incidence of opioid use disorder, and higher concentrations of indigenous populations may be contributing factors to U.S. suicide rates. The subgroups that experienced the highest suicide rate in 2021 were American Indian and Alaska Native people (Garnett & Curtin, 2023). Suicide rates within American Indian communities may be one reason Montana ranks highest in suicide deaths out of all 50 states (Centers for Disease Control and Prevention, 2023). Healthcare shortages, rural population distribution, access to firearms, and the prevalence of alcohol use likely predispose Montana residents to suicide risks (Zolnikov, 2019).

Montanans are facing a mental health crisis based on suicide statistics alone, and a focus must be placed on prevention to decrease death rates. A variety of circumstances can lead to suicide. Psychiatric disorders such as major depressive disorder (MDD), anxiety, schizophrenia,

bipolar disorder, and borderline personality disorder are often precursors (Orsolini et al., 2020). Major depressive disorder occurs in 15-17% of the general population (Orsolini et al., 2020). Early intervention and treatment of mental health problems, such as MDD, could help prevent patients from experiencing a crisis that leads to suicide. Treating patients before a crisis can also reduce the strain on limited resources throughout rural Montana. As discussed in Chapter One, the U.S. Preventative Services Task Force (USPSTF) recommends screening all patients over age 12 for depression during primary care visits (U.S. Preventative Services Task Force, 2023). The literature review completed in Chapter One identified the PHQ-2 and PHQ-9 as valid and effective screening tools for helping identify patients with depression. The PHQ-2 is short and easy to administer, making it a desirable tool for initial implementation in primary care appointments. A PHQ-9 and provider assessment can further evaluate patients who screen positive on the PHQ-2.

Problem Statement

Increasing numbers of patients are presenting to a rural Montana clinic in an acute mental health crisis. The clinic has limited mental health resources and is only able to offer minimal interventions. Current clinic practices provide evidence that the PHQ-9 is not consistently administered to all qualifying patients. The clinical site hopes to increase opportunities for early intervention and prevention of mental health crises by establishing a standardized screening process. After reviewing the literature and presenting to stakeholders, the PHQ-2 was selected as the optimal screening tool for capturing at-risk adult patients during primary care visits. The PHQ-2 will help providers identify patients who exhibit signs of depression that may have otherwise been missed.

Organizational Microsystem Assessment

The small rural clinic and urgent care implementing the quality improvement (QI) project is in Eastern Montana. The clinic is located in a town of just over 2,000 citizens, situated 23 miles from an American Indian reservation. The nearest critical access hospital is 35 miles away. The largest adult age group within the county is 60-65 (13.5%), the majority of the county's population is white (55.5%) followed by Native American (39.0%) and 17.6% live below the poverty line (United States Census Bureau, 2022). Ranching, farming, and mining are all prominent industries within the community.

The clinic's medical staff is comprised of two full-time physician assistants (PAs) and three full-time registered nurses (RNs). A licensed clinical professional counselor (LCPC) within the facility sees patients independently from the clinic but is available for consultation and referrals. The clinic manager and board members are also recognized as essential stakeholders in the day-to-day activity and function of the clinic. The providers treat patients of all ages for preventative care, chronic conditions, acute illness or injury, and medical emergencies.

Clinical site observation and stakeholder interviews identified an overwhelming concern for the increased prevalence of acute exacerbations of mental illness within the community. Medical staff are frustrated with the lack of access to tertiary mental health care, especially for actively suicidal patients. The medical staff is also relatively small, so the extent of care and time required for a patient in a mental health crisis can put a strain on the overall clinic flow. While there are many complex issues at play, stakeholders agree that improving depression screenings could proactively help prevent many patients from reaching a crisis state.

Presently, there are no written policies at the clinic regarding who, when, and how often to screen for depression or suicide. The PHQ-9 is available in paper format and is usually, but not always, administered during well-woman exams and when patients report mental health symptoms. The current patient intake process includes the nurse escorting the patient to an exam room, collecting vital signs, and reviewing medications and allergies. The nurse enters the information into the EHR during the rooming process or at their desk computer. The nurse then gives a brief verbal report to the provider on vital signs and primary complaints. Depression or suicide screenings are typically not completed by nursing staff during the intake process unless requested by the provider. Implementing a PHQ-2 screening during the intake process appears feasible as it is quick and easy to complete. A short screening promotes the identification of depression while fitting into the time constraints of daily patient care. The PHQ-2 allows the clinic to screen the adult population at each visit, increasing the likelihood of capturing those needing intervention.

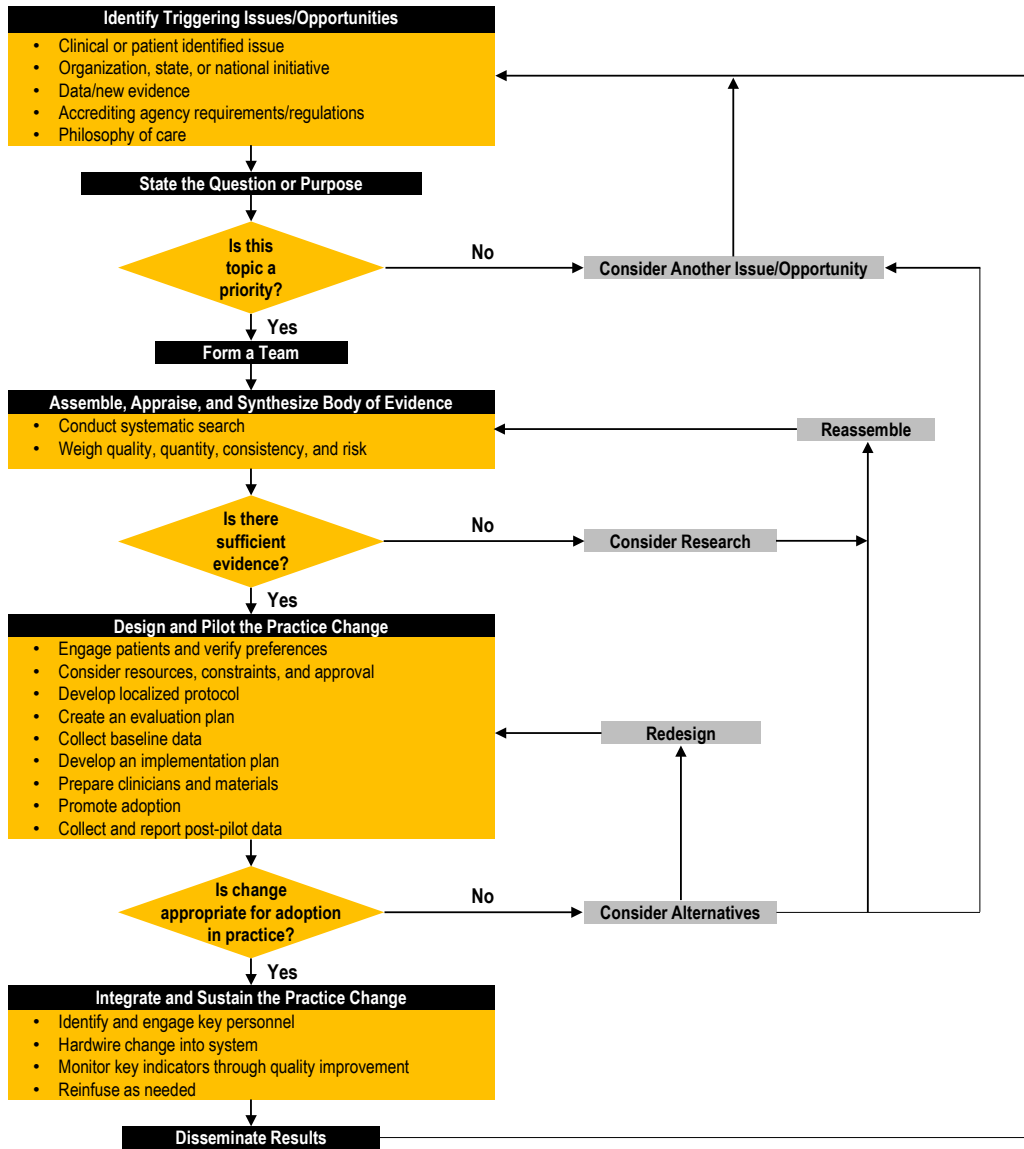
Quality Improvement Model

The Iowa Model will guide the development and implementation of this QI project. The Iowa Model uses a flow chart developed to aid healthcare facilities in identifying problems and making sustainable changes to improve outcomes (Iowa Model Collaborative, 2017). As seen in Figure 1 below, the model outlines seven distinct stages of a successful QI project. The first stage was completed using site observations and interviews with clinic staff. The first stage determined there was a lack of standardized depression screening for adult patients. During stage two, key stakeholders agreed that depression screening could help address the concerns staff had

about the worsening state of mental health within the community and improve patient outcomes. The stakeholders categorized the community's mental health and safety as a top priority. Stage three consisted of gathering leadership team members and medical staff who will advocate for change within the facility to implement the determined intervention. The project implementation team will include the project coordinator, clinic manager, business office manager, two family practice providers, and three clinic nurses. Stage four was completed using a scoping review of the literature that identified the PHQ-2 and PHQ-9 as valid options for implementation. Step five was initiated by the project coordinator, who organized meetings with the implementation team. During these meetings, clinic staff provided input on what they felt was manageable and appropriate regarding workflow, scope of practice, and patient care. The project coordinator took feedback to develop a new workflow allowing adequate implementation of depression screening for adult clinic visits. Steps six and seven will continue to guide the QI project following proposal approval as a standardized PHQ-2 screening is implemented within the clinic. The model allows us to redesign and consider alternatives as issues arise during implementation.

Figure 1: The Iowa Model Revised *Used/reprinted with permission from the University of Iowa Hospitals and Clinics, copyright 2015. For permission to use or reproduce, please contact the University of Iowa Hospitals and Clinics at 319-384-9098. (See Appendix C)*

The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care



◆ decision point

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Specific Aims/Purpose Statement

The rising incidence of mental health disorders in a rural Montana community has triggered the need for an improvement in preventative measures. The implementation of standardized PHQ screenings within the project site has the potential to identify patients struggling with their mental health, therefore allowing them to receive treatment before entering a crisis state. The quality improvement project described above aims to improve patient outcomes and lessen the strain on a small healthcare system's limited resources.

The primary short-term goal of the project is to complete a PHQ-2 assessment on at least 85% of adult patients aged 18 years or older who meet qualifications during the project timeline. Based on the project's scope, factors that would disqualify a patient from receiving a PHQ-2 include patients with cognitive delays, refusal to participate, or urgent care visits. If a patient screens positive (score ≥ 3) on the PHQ-2, next steps include the administration of a PHQ-9 followed by a provider assessment. The second short-term goal is applying advanced screenings to at least 95% of positive PHQ-2 assessments. To accurately evaluate outcomes, staff must also ensure PHQ-2 screenings are placed in the appropriate folder so a chart audit can be completed.

The intermediate goal is for patients with a positive PHQ-2 screening to be given a PHQ-9 questionnaire, and the provider will complete an assessment. The goal rate for administering a PHQ-9 and provider assessment is an ambitious 100%. If depression is identified, providers should offer treatment options for these patients to prevent adverse outcomes, including self-harm and suicide. Providers must adequately document the interventions offered and applied within the office visit note to evaluate the intermediate aim effectively.

The long-term outcomes of this project rely heavily on the success of the short-term and intermediate goals. The ideal long-term outcomes resulting from this project are a decreased incidence of urgent care visits related to mental health crises and a reduction in suicide rates within the county. The ability to evaluate the long-term outcomes goes beyond the scope of this QI project due to time constraints.

Intervention and Implementation

A small rural clinic in Eastern Montana has identified implementing standardized depression screening as a priority intervention following a steady rise in patients presenting with an acute mental health crisis. The QI project was developed following a systematic review of the literature, multiple site visits, and stakeholder interviews. The primary intervention requiring implementation is the standardized use of the PHQ-2. Nursing staff will complete the screening on all adult clinic visits for patients aged 18 and older during the initial intake and rooming process. Patients with positive PHQ-2 screenings will receive a PHQ-9 and a provider assessment to further evaluate for depression or other disorders. This allows the opportunity for early intervention and treatment of undiagnosed depression and may prevent possible episodes of self-harm or suicide. The screening process can potentially improve patient outcomes and decrease strain on clinic resources by hypothetically preventing a future mental health crisis. The project implementation will occur over eight weeks, followed by data review and analysis.

Intervention and Implementation.

The rural clinical site will participate in the implementation of a standardized depression screening protocol. A PHQ-2 and PHQ-9 will be integrated into the clinical site's family practice

setting to promote early recognition and treatment for patients experiencing depression. The implementation plan is outlined below.

Stakeholder Buy-In For a QI project to succeed, all stakeholders must offer support and believe in the implementation process. An initial meeting has been completed to gauge interest and allow stakeholders to provide input on the improvement process. The medical staff, including three nurses and two providers, will participate in a training session to ensure they understand the purpose of the intervention and how to administer the screenings properly.

Implementation Plan All adult patients aged 18 and older will receive a hard copy of the PHQ-2 form from their nurse during the rooming process for their appointment. The nurse will review the answers at the end of the intake process and determine if the patient has a positive screening of ≥ 3 . If a patient has a positive PHQ-2, the nurse will provide them with a hard copy of the PHQ-9. The nurse will review the PHQ-9 results and evaluate for a positive result. A PHQ-9 result of 5-9 indicates mild depression, 10-14 indicates moderate depression, 15-19 indicates moderately severe depression, and 20 or more indicates severe depression. The nurse will notify the provider of a PHQ-9 score of 5 or greater so the provider can complete a clinical assessment during the patient visit. The nurse will place questionnaires in a folder to be scanned into the patient's EHR. Providers will need to offer intervention and treatment options for patients with scores of ≥ 9 and those with identified depression through the clinical evaluation. Interventions will be determined by the provider using their expert and evidenced-based opinion. Patients who require interventions for their depression should be provided with instructions on follow-up recommendations. The provider will give the patient an appointment card to turn in to the front desk, who will then schedule the patient for their follow-up. The provider will enter

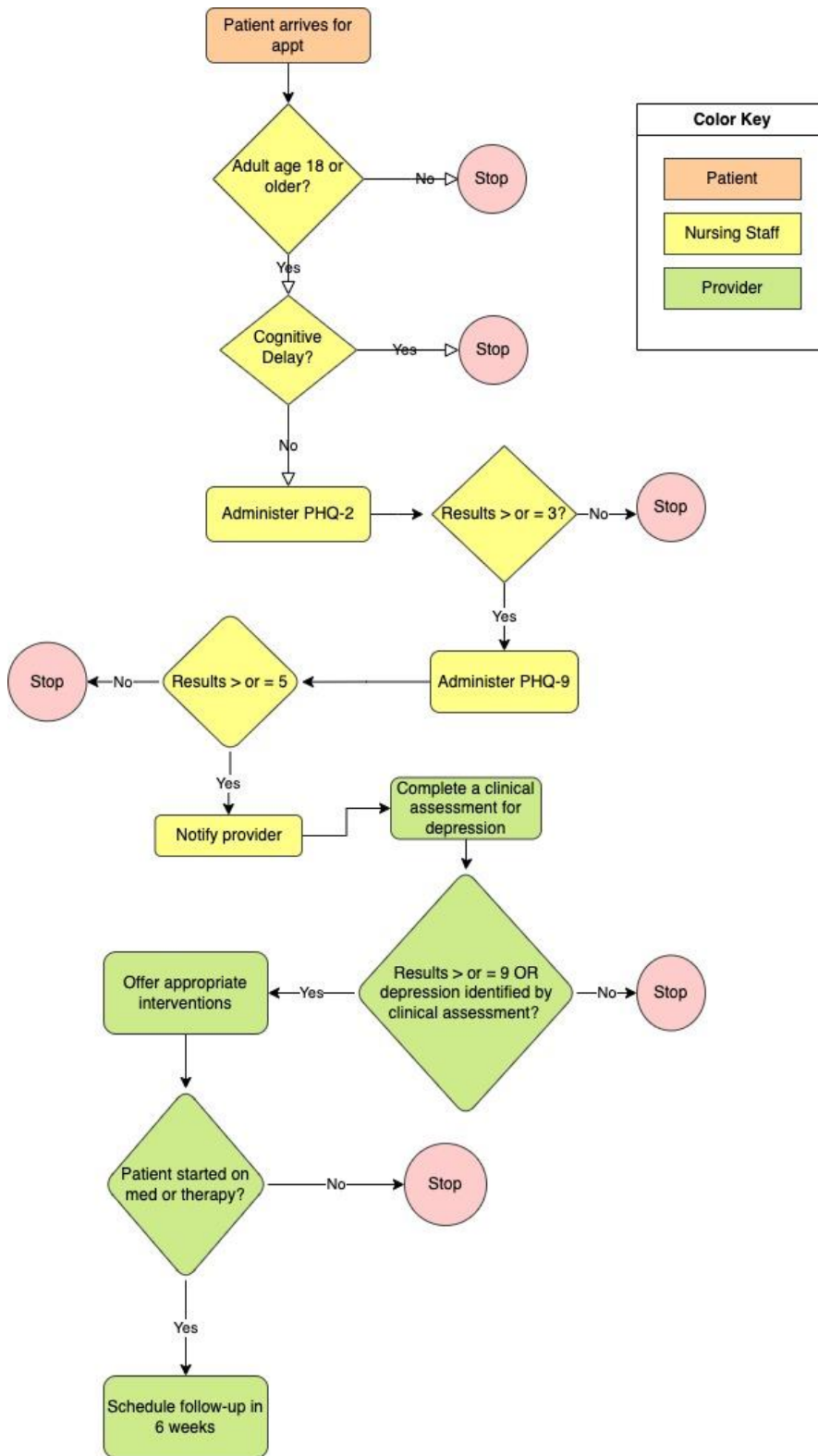
medications and send referrals as needed using the EHR. The provider must also document their diagnosis and plan of care adequately within the patient’s visit note. The process is summarized using a flow chart developed by the project coordinator with stakeholder input and is provided below in Figure 2.

Barriers

Table 1: Potential Barriers and Solutions

Potential Barrier	Potential Solutions
Patient refusal	Patients are always able to refuse PHQ screenings and/or treatment for depression. The patient will just be provided with education regarding the harmful outcomes of untreated depression.
EHR incompatibility	Staff is not comfortable trying to enter results in the EHR and would prefer to start with paper. As the project progresses, we will look into opportunities to integrate screening into the EHR.
Time constraints	The PHQ-2 was chosen as the primary intervention because it is short and simple. This should add minimal extra time to the rooming process. However, if a patient screens positive the medical staff should be prepared to allot time to address the patients newly diagnosed depression.

Figure 2: Proposed Depression Screening Flowchart



Evaluation and Analysis.

Process compliance and data collection will be completed weekly by the project coordinator. The project coordinator will gather PHQ documents completed that week and compare questionnaires collected to the clinic schedule and EHR documentation. During this time, the project coordinator will conduct chart audits to verify positive screenings receive the appropriate follow-through. An informal check-in process will also be implemented where the project coordinator asks the medical staff how they feel the implementation is going and if they have faced any new challenges. A formal stakeholder meeting will be held monthly to gather qualitative data regarding the process from the perspective of the medical staff.

The project coordinator will enter quantitative data into a spreadsheet every week. Demographic information will not be collected or entered into the spreadsheet. Plot points will be added to a run chart every week to monitor for changes and trends in data. Finally, descriptive statistics will be expressed as percentiles to present the outcomes of the collected data. The SMART goals established in the tables below provide examples of the descriptive statistic categories.

Table 2: SMART Goal #1

SMART Goal #1: A PHQ-2 is completed on at least 85% of adult patients aged 18 years or older who meet qualifications during the project timeline.		
<ul style="list-style-type: none"> • Patients not qualified for screening are those under 18 or are cognitively impaired. • Nursing staff provide patient with written PHQ-2 and collect completed assessment. • A PHQ-2 score ≥ 3 triggers need for PHQ-9 assessment. • All completed assessments are placed in folder kept by office manager. • Project coordinator collects assessments from folder and compares completed assessments with patient schedule on a weekly basis. • Data is deidentified and entered by project coordinator into spreadsheet. 		
Data to be collected	Method of collection and who is responsible	Planned data analysis

Table 2: SMART Goal #1 Continued

Number of total patient visits 18 or older. Number of patients who qualified for screening. Number of qualifying patients	Responses to PHQ-2 are collected on paper by nursing staff and then placed in folder kept by the office lead. Data entered into spreadsheet by the project lead.	Total patients - non-qualifying patients = total patients needing PHQ-2 Completed PHQ-2 assessments/Total patients screened = % patients screened
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Table 3: SMART Goal #2

SMART Goal #2: A PHQ-9 is completed on all patients who score ≥ 3 on their PHQ-2 in at least 95% of cases.		
<ul style="list-style-type: none"> • PHQ-2 score ≥ 3 triggers requirement for PHQ-9 screening. • Nurse provides patient with written screening, collects results and reports to provider if ≥ 5. • Nurse places assessment results in folder kept by office manager. • The provider completes a clinical assessment to validate results of PHQ-9. • Project lead collects data weekly and compares positive PHQ-2 results with completed PHQ-9 assessments. • Data is deidentified and entered into spreadsheet by project lead weekly. 		
Data to be collected	Method of collection and who is responsible	Planned data analysis
Number of patients with positive PHQ-2. Number of patients who received PHQ-9 following positive PHQ-2.	Nursing staff collects PHQ results and turns them into folder kept by office manager. Data is entered into spreadsheet by project lead.	Patients who completed PHQ-9/Patients with positive PHQ-2 = % patient screened

Table 4: SMART Goal #3

SMART Goal #3: Providers will complete and document their clinical assessment of all patients scoring ≥ 5 on their PHQ-9 assessments.		
<ul style="list-style-type: none"> • Nursing staff will notify providers when PHQ-9 scores are ≥ 5. • Providers will complete a clinical assessment to determine accuracy of PHQ screenings. • Providers will include a diagnosis of depression when necessary and document CPT code for depression screening. • Providers will mention clinical assessment of depression in visit note. • Project coordinator will audit charts weekly that had a PHQ-9 score ≥ 5 to determine if clinical assessment was completed and documented. • Project coordinator adds data to flow sheet. 		

Table 4: SMART Goal #3 Continued

Data to be collected	Method of collection and who is responsible	Planned data analysis
Number of patients who scored ≥ 5 on PHQ-9. Number of positive screened patients who received a clinical evaluation from provider.	Nursing staff return PHQ-9 results to folder kept by office manager. Provider documents assessment and diagnosis as necessary. Project lead audits charts and enters data into spreadsheet.	Patients who receive a provider assessment/PHQ-9 scores ≥ 5 = % patients screened

Table 5: SMART Goal #4

SMART Goal #4: An intervention based on provider expertise will be offered to 100% of patients who score ≥ 9 on PHQ-9 or are given a diagnosis of depression		
<ul style="list-style-type: none"> • Providers will clinically assess all patients who have PHQ-9 score of ≥ 9. • Patients that are diagnosed with depression and score ≥ 9 are provided with appropriate treatment options including medications and/or therapy. • Referrals are submitted for patients who agree to participate in therapy 		
Data to be collected	Method of collection and who is responsible	Planned data analysis
Number of PHQ-9 scores ≥ 9 . Number of patients with scores ≥ 9 who receive clinical evaluation and diagnosis of depression. Number of patients who are offered treatment options.	Nurses return PHQ-9 results to folder kept by office manager. Providers properly document assessment and plan of care. Providers enter referrals for patients requiring therapy and send prescriptions for those requiring medications. Project lead audits charts and enters data into spreadsheet.	Number of patients offered treatment/Number of PHQ-9 scores ≥ 9 = % patients who received appropriate intervention Number of patients who received medication or therapy/Number of patients offered intervention = % of patients who accepted treatment

Timeline

Data will be collected over eight weeks. Following the completion of data collection, a 2–3-week timeframe is anticipated to analyze data and make conclusions on project outcomes. There are a few items to consider that are specific to this facility that may interfere with the overall success of the project. Each member of the nursing staff is newly hired within the last year. The nursing staff may need extra guidance as they adapt to their new roles, and there is a

higher likelihood of missed screenings. The medical staff is also very small, so if someone is absent or a high-acuity patient requires care, it could cause a massive shift in workflow capability. The implementation team is aware of the potential limitations and will attempt to adapt as needed to support the project's integrity.

Safety and Confidentiality

The PHQ assessments will be completed with pen and paper, which could elevate the risk of misplaced or misused patient health information. The clinic staff cannot integrate a questionnaire into the current EHR; therefore, written assessments are the only option. Patients will be allowed to complete their questionnaires in the privacy of the exam room. Nursing staff involved in the patient's care may review the results of the PHQ so they can either provide the patient with a PHQ-9 or notify the provider of a positive result when necessary. The nurse will then need to deliver this document to a folder in the locked filing cabinet located near the office manager.

The paper questionnaires will only have the PHQ results and the patient's medical record number. The medical record numbers are present to allow the project coordinator to perform a chart audit to determine if the patient was offered treatment and if a follow-up was scheduled as necessary. Following retrieval of this information, the paper questionnaire will be scanned into the patient's record and immediately shredded.

The project coordinator may have access to the PHQ paper file for weekly data collection and assessment of intervention. The project lead will only be allowed to review visit notes related to the QI project. All information will be de-identified as the project coordinator enters

the data into a spreadsheet. Data collection and review will only be done on campus; no personal health information will be allowed to leave the clinic.

The QI paper will only provide contextual information about the clinical site to protect the privacy of the patients and facility staff. Aside from the required forms for submittal to Montana State University and the Institutional Review Board (IRB), the clinic name and location will be omitted from all written documents.

Conclusion

Implementing a standardized depression screening using the PHQ-2 will likely improve patient care for a small rural Montana clinic. Stakeholders agree that taking a proactive approach regarding mental healthcare within the community has the potential to decrease the frequency of patients experiencing crises. An implementation plan was developed using the Iowa Model as a general guideline. Participation from the nursing staff and clinic providers will be critical for the project's success. On data collection days, the project coordinator will informally check in with staff to determine the level of participation and engagement. The Iowa Model encourages teams to make changes when necessary to support long-term sustainability (Iowa Model Collaborative, 2017). The opportunity to make changes during the implementation will increase the likelihood of achieving the five SMART goals identified.

Implementing standardized depression screening has multiple implications for the clinic patients and the rural community. Treating patients' mental health before they reach a crisis state could be an effective and resource-conscious way to prevent self-harm and suicide. Addressing depression early can allow providers time to find appropriate resources and interventions that

better meet individual patients' needs. Projects that collect data related to adverse patient outcomes help to advocate for more resources in rural areas. Implementing a standardized screening also has the potential to improve outcomes for the American Indian population in the area, who are disproportionately affected by depression and suicide. Regularly discussing mental health during patient encounters may help decrease the stigma surrounding mental health and ultimately improve outcomes for patients facing depression.

CHAPTER THREE

QUALITY IMPROVEMENT MANUSCRIPT

Contribution of Authors and Co-Authors

Manuscripts in Chapter: 1

Author: Kjersti Downing

Contributions: analysis of the clinical problem, review of the literature, implementation methods, data analysis, first draft of manuscript

Co-Author: Dr. Stacy Stellflug

Contributions: concept development, revisions for final draft, editorial review

Co-Author: Dr. Lindsey Benes

Contributions: editorial review

Manuscript Information

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- Accepted by a peer-reviewed journal
- Published in a peer-reviewed journal

Clinical Problem

The general population experiences major depressive disorder (MDD) at a rate of 15-17%, and depression accounts for 15 million office visits in the United States annually (Orsolini et al., 2020; Centers for Disease Control and Prevention, 2023). When left untreated, MDD can lead to poor patient outcomes, including self-harm and suicide. Rural population distribution, access to firearms, healthcare shortages, and a high incidence of alcohol use place Montanans at a higher-than-average risk for suicide (Zolnikov, 2019). Considering the prevalence of MDD and the associated risk stratification, it is understandable why so many rural healthcare centers are faced with an influx of patients experiencing a mental health crisis. Rural areas in Montana often bear sparse resources and are ill-equipped to provide the necessary resources required for patients in a suicidal or crisis state. A preventative approach may be more feasible and appropriate rather than attempting to mitigate the never-ending nuances of crisis management in a rural setting. A standardized screening tool, known as a patient health questionnaire, may offer a feasible way for primary care providers to catch depression early rather than allowing a patient to reach a critical point in their mental health. A rural facility in eastern Montana agreed to participate in a quality improvement initiative to standardize depression screenings for all adult patients seen in their family practice clinic.

Review of Literature

The U.S. Preventative Services Task Force (USPSTF) advises screening adult patients for depression and considers regular screenings substantially beneficial for patient outcomes (U.S. Preventative Services Task Force, 2023). The American Academy of Family Physicians (AAFP)

also supports the notion of regularly screening patients for depression at every visit and considers the Patient Health Questionnaire (PHQ) a valid and widely accepted method (Maurer et al., 2018). The most common variations of PHQs are the PHQ-2 and PHQ-9, which differ solely on the number of Likert-style questions asked. The literature review focused on ten research articles that evaluated the validity of PHQ-2 and PHQ-9 screenings in the primary care setting.

The most important outcome of the literature review was the overarching support for the use of the PHQ-2 and PHQ-9 as valid ways to identify underlying depression. The PHQ-2 and PHQ-9 have a similar sensitivity rate of 91% and 94%, respectively (Maurer et al., 2018). The PHQ-9 has a higher specificity at 92% compared to the PHQ-2 at 78%, making it an appropriate follow-up questionnaire (Maurer et al., 2018). Other positive findings concluded the PHQ was an inexpensive intervention requiring minimal training and the questionnaire could be administered using several modalities (Bridges et al., 2019; Costantini et al., 2021; Murillo et al., 2019). Researchers did identify a handful of flaws that will require consideration, including mental health stigma, language barriers, time constraints, and altered responses for chronically ill patients (Aslan et al., 2020; Bridges et al., 2019; Costantini et al., 2021; Molebatsi et al., 2020; Murillo et al., 2019). Although the PHQ-2 and PHQ-9 are great for depression screening, a provider assessment should be integrated for all positive screenings and if there are concerns regarding the accuracy of results (Teusen et al., 2022).

Conceptual Framework

The Iowa Model was the conceptual framework for the quality improvement (QI) project detailed below. The Iowa Model offered an easy-to-follow flowchart designed to help facilities

improve outcomes through sustainable changes (Iowa Model Collaborative, 2017). With the Iowa Model concept, our team identified untreated depression as a triggering issue. The next step led us to our project's purpose, which involved implementing a standardized depression screening within a clinical setting. After forming a team and completing a review of the literature, we then developed an implementation strategy to integrate PHQ-2 and PHQ-9 screenings. The Iowa Model continued to guide the process through the pilot period, and adaptations were made to incorporate sustainable changes. The final step of the Iowa Model involved disseminating results that encompassed the goals and outcomes of the quality improvement project.

Aims and Purpose Statement

The overall goal of the quality improvement project included successfully implementing standardized PHQ-2 screenings with a protocol that incorporates appropriate follow-up with a PHQ-9 and provider assessment. The project's short-term goal was to complete a PHQ-2 assessment on at least 85% of qualifying adult patients during the eight-week implementation period. Another goal included completing PHQ-9 assessments on at least 95% of patients with positive PHQ-2 results. Ideally, all patients with a positive PHQ-9 would then receive a provider evaluation, and 100% of patients diagnosed with depression would be offered appropriate interventions. The long-term intent of the PHQ implementation was to ultimately decrease the frequency of patients presenting with a mental health emergency by providing early intervention. The ability to evaluate the long-term outcomes of the standardized depression screening protocol was beyond the scope of this QI project.

Methods

The rural clinic that implemented the QI project was in Eastern Montana, with a population of just over 2,000 people (United States Census Bureau, 2022). Ranching and mining were the primary industries within the community. The clinic employed two full-time physician assistants and three full-time registered nurses. The healthcare team managed patients in the family practice clinic and urgent care Monday through Friday from 8:00 am to 5:00 pm. The QI project focused only on patients treated in the clinic setting. The family practice clinic averaged 82 patients per week.

Interviews with staff and clinical observation revealed a frustration with the lack of resources available for patients experiencing a mental health crisis. The distance from inpatient mental health services and limited bed availability made it difficult to manage patients requiring higher levels of care. The medical staff was interested in implementing a process that allowed for early intervention in patients experiencing depression symptoms. At the time of implementation, the clinic staff only administered PHQ-9 assessments to patients who presented with symptoms of depression and for well-woman exams. Otherwise, the clinic had no standardized process for screening patients regularly for depression.

Practice Change

The clinical staff and management agreed to implement a standardized depression screening incorporating the PHQ-2 and PHQ-9. An implementation team was developed and consisted of the project coordinator (myself), the clinic manager, two providers, and three nurses. One nurse was designated as the primary point of contact between the project coordinator and the medical staff. The team held an initial meeting and determined screenings would be focused

on the adult population 18 years and older who are seen in the primary care clinic. Exclusion criteria included patients under the age of 18, patients with cognitive impairments, or those seen in urgent care. The implementation occurred over eight weeks.

Screening Eligibility The implementation team focused on the adult patient population for the initial trial of standardized PHQ screening within the clinic. Although the PHQ-2 and PHQ-9 are validated for adolescents (12-18), data were only collected on adult patients for the eight-week implementation project. Patients were able to refuse screening at any stage of the process. Additionally, patients with cognitive delays that interfered with their ability to complete the PHQ forms were excluded from data collection and treated separately from the developed project protocol. Patients evaluated in urgent care or who experienced a medical emergency were also excluded.

Route of Delivery The PHQ can be administered in several ways, such as verbally, electronically, or on paper. Many electronic health records have the PHQ questions embedded within the electronic health record (EHR). However, the project facility's EHR did not readily offer the data entry feature. The clinic staff felt most comfortable handing the patient a printed copy of the PHQ-2 during the rooming process to be completed independently. The exact process was initiated for the PHQ-9 delivery.

The Process Printed versions of the PHQ-2 and PHQ-9 were placed in the nurses' station and made easily accessible. The nurses would bring a PHQ-2 form with them while rooming adult patients for their scheduled appointments. While the nurse entered vital signs and visit information into the EHR, the patient would complete the PHQ-2 form. While leaving the room, the nurse would take the PHQ-2 and assess the score. If the score were three or higher, the nurse

would provide the patient with a PHQ-9 form to complete in privacy. The nurse would then retrieve the PHQ-9 and give it to the provider to review. Completed PHQ-2 forms were placed in a secure filing cabinet in the nurse's station to aid in data collection by the project coordinator at the end of the week.

A PHQ-9 score of less than five required no further intervention and was scanned into the patient's record. A score of five or greater required a clinical evaluation by the provider. At this time, the provider would discuss the results with the patient and make a clinical determination if a diagnosis of depression was accurate. If so, the provider would review intervention options, including a referral to therapy, medication management, and a follow-up plan as appropriate based on the provider's clinical expertise. Positive PHQ-9 forms were scanned directly into the patient's record.

At the end of each week, the project coordinator collected the PHQ-2 forms and compared the completed forms against the daily appointment schedule. Positive PHQ-2 forms required an audit of the EHR to evaluate if the protocol was followed. The project coordinator ensured a PHQ-9 was completed, and the providers documented their assessment and interventions offered to the patient. After completing the weekly audit, all PHQ-2 forms were immediately destroyed. The data entered into the spreadsheet was deidentified, and no protected health information (PHI) was collected or saved.

Communication and Follow-up The project coordinator held an official meeting for the implementation team a week before the start date. At this meeting, the project coordinator reviewed the project's purpose, discussed the screening process flowsheet, answered any questions, and accepted feedback on the implementation plan. The clinic staff was provided with

the project coordinator's phone number and email address so staff could ask questions between site visits. Each week, when the project coordinator arrived for data collection, they met separately with each provider and the lead nurse to check in. The informal check-ins allowed staff to express concerns or ask questions regarding situations that occurred throughout the week. A final official team meeting was held during week five of the implementation timeline. The project coordinator shared the data collected and anecdotal observations discovered so far. The team then participated in problem-solving to address hurdles during the first four weeks. Clarifications were made concerning the process and how to document patient declinations during this time. The nursing staff would write "declined" on the patient's form so the frequency of declinations could be monitored, and the encounter would not be labeled as a missed screening. The project coordinator continued with weekly informal check-ins for the remaining three weeks.

Measures

Data was collected weekly to monitor the progress of the implementation and assess trends in PHQ responses. The project coordinator collected the PHQ-2 forms and compared the patients screened to the daily schedule. Data collected for the spreadsheet at this stage included the number of total office visits, number of ineligible patients, number of eligible patients, and how many PHQ-2 screenings were completed. This allowed the coordinator to determine if eligible adult patients had not been screened per the set protocol.

The next step was to separate the PHQ-2 forms and count the positive results. The coordinator then used the positive PHQ-2 forms to complete a chart audit. During the audit, the coordinator determined if a PHQ-9 was administered, if the results were positive, and if the

provider offered interventions or follow-up for these patients. The data collected for the spreadsheet during this stage included the number of positive PHQ-2 results, how many PHQ-9 forms were completed, the number of positive PHQ-9 results, and the number of provider interventions. By doing so, the project coordinator could uncover if patients had not received the appropriate screening and interventions.

Analysis

Data analysis from a quantitative perspective involved entering the information discussed above into a spreadsheet. After the information was collected, percentages were determined to assess how successfully the project interventions were implemented by nursing staff and the rates of positive screening each week. Percentages were determined for the following categories: PHQ-2 forms completed, positive PHQ-2 results, PHQ-9 forms completed, positive PHQ-9 results, and provider assessment and intervention completion. These values were analyzed weekly and then represented as an overall final calculation.

Collecting data weekly also allowed the project coordinator to evaluate qualitative information that may have affected outcomes for that week. If the coordinator identified missed screenings, they could interview staff to determine if situational impositions contributed. The weekly informal check-ins with staff provided a consistent opportunity to clarify data reviewed for that week. Reviewing the daily schedule and nurse calendar was also helpful in providing anecdotal information regarding possible time constraints that may have occurred during certain weeks. The project coordinator had the ability to see if any patients were evaluated in the emergency room each day which helped identify when staff availability may have resulted in missed depression screenings during that timeframe.

Results

PHQ-2 Data

The project site had 454 patient visits that met the eligibility requirements for PHQ-2 screening during the eight-week implementation period. Of the 454 visits, nursing staff screened 326 (71.8%) of identified eligible patients. A total of 128 eligible patients did not complete a PHQ-2 form. Prior to week five, nursing staff did not routinely document declinations. Figure 3 (below) depicts the percentage rate of eligible patients who completed PHQ-2 forms administered and collected by nursing staff during each day of implementation. The implementation meeting that addressed declination documentation during week five is labeled within the run chart. A median shift can be seen appreciated during the final three weeks of data collection.

Figure 3. Percent PHQ-2 Administered Run Chart

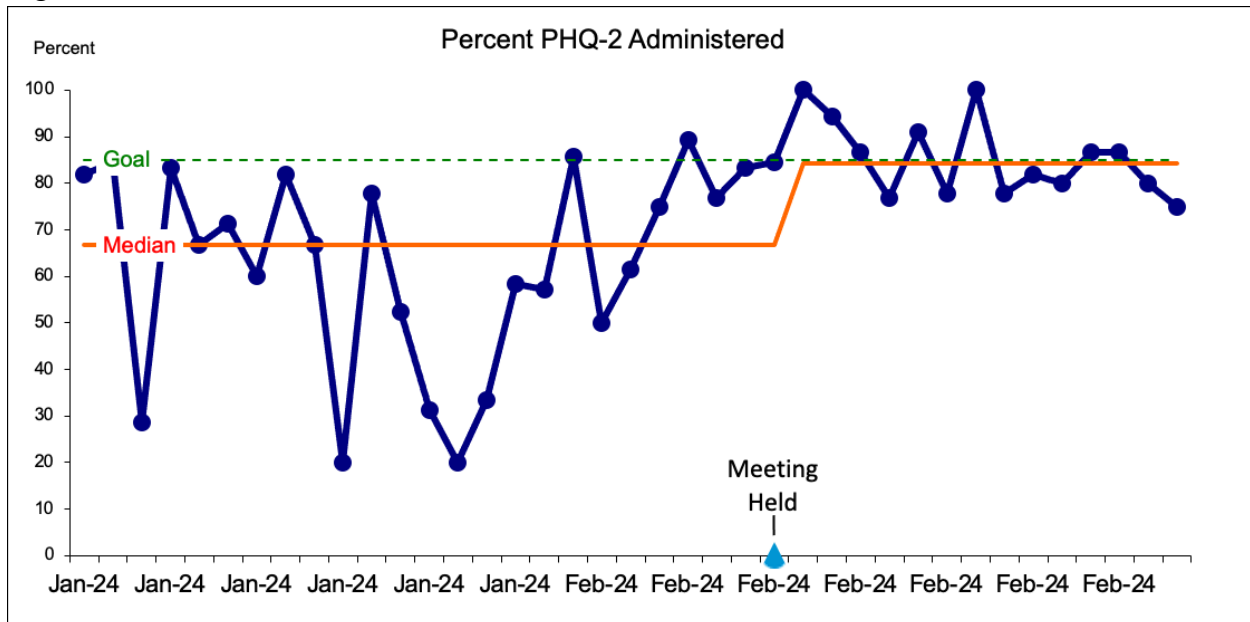
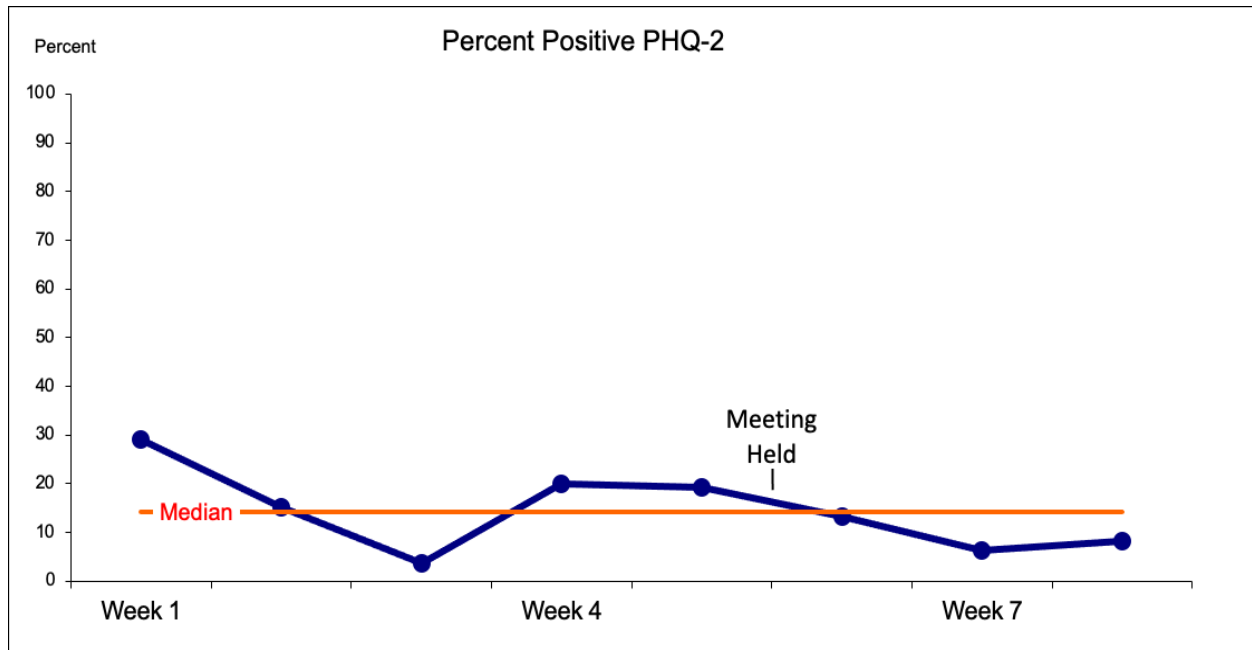


Figure 4 (below) visually represents positive PHQ-2 score percentage trends. A positive PHQ-2 screening is identified by a score greater than or equal to three. Of the 326 patients who completed PHQ-2 forms, 46 were positive. Over eight weeks, 14.1% of patients screened had a positive PHQ-2 score. The median line of the positive PHQ-2 run chart remained consistent throughout the eight weeks, with no shift after improved administration rates.

Figure 4. Percent Positive PHQ-2 Run Chart

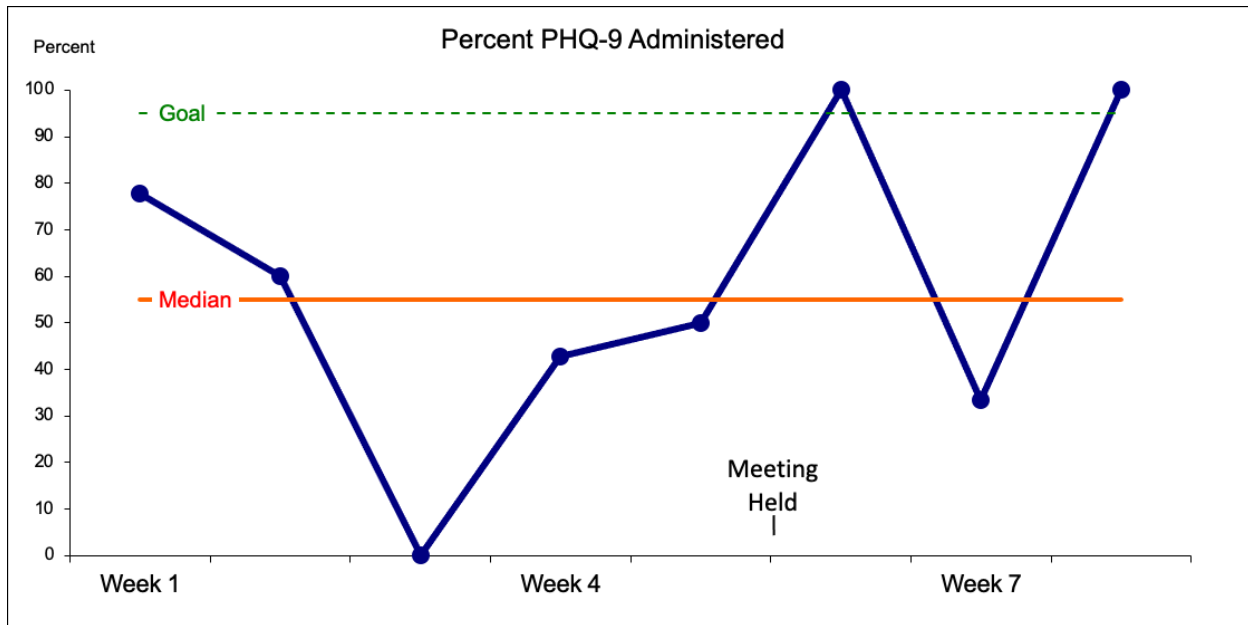


PHQ-9 Data

Although 46 patients had positive PHQ-2 scores, only 30 completed a PHQ-9 form. Declinations of PHQ-9 screenings were appropriately documented since week one. Nursing staff reported 14 patients declined further screening when offered a PHQ-9. One patient with a positive PHQ-2 did not have any documented follow-up with a PHQ-9. Another patient was

determined medically unstable, so the PHQ-9 was deferred. Figure 4 (below) shows the trends of PHQ-9 administration rates every week.

Figure 5. Percent PHQ-9 Administered Run Chart



All 30 patients who completed a PHQ-9 screened positive for depression with a score of five or greater. A chart audit verified that each patient with a positive PHQ-9 received an evaluation by a provider and was offered interventions. Each of the providers entered adequately addressed the positive PHQ-9 scores. Interventions ranged from medication management, referrals for therapy, and planned follow-ups.

Discussion

The first short-term goal was for 85% of eligible patients to receive a PHQ-2 from nursing staff. Although only 71.8% of patients were screened during the eight weeks of implementation, there was a notable shift in the PHQ-2 administration median following the

team meeting during week five. Figure 3 visually represents the PHQ-2 administration median improving from less than 70% to approximately 85% for the final three weeks. The team meeting identified that the nursing staff was not documenting patient refusals to complete a PHQ-2. Refusals were not counted toward the total number of administered PHQ-2 forms; however, it does help evaluate the overall success of the implementation process. It is possible that further clarity on the need to document each patient regardless of PHQ-2 completion status encouraged improved compliance with the administration process.

The second goal was to achieve a 95% PHQ-9 administration rate for patients with positive PHQ-2 scores. Only 65.2% of patients with positive PHQ-2 scores completed a PHQ-9, and 14 out of 46 declined further screening. Taking declinations into consideration improves the rate of administration to 95.6%. Information about patient participation provides insight into the values represented in Figure 5. Patient refusals likely skewed the data portrayed within the run chart. While completing chart audits, several patients who declined further screening were experiencing acute illness. The observation that acute illness may have resulted in false positive PHQ-2 scores correlated with the evidence provided by Aslan et al. (2020), who discussed chronic illness and its effects on PHQ scores. Contrarily, the PHQ-9 was accurate at identifying patients with depression, considering 100% of those who screened positive were diagnosed with depression following provider evaluation.

The final short-term goal addressed by the project was for 100% of patients who screened positive for depression via PHQ-9 to be evaluated by a provider and offered appropriate interventions based on clinical expertise. The providers at the clinical site achieved their goals and clearly documented their interventions. At the end of the implementation period, 9.2% of the

326 patients initially screened were diagnosed with depression. Taking into consideration the number of declinations and missed screening opportunities, one could speculate the depression rate among clinic patients may be closer to the national average of 15-17% (Orsolini et al., 2020). While all patients were offered interventions and resources, not all patients were ready to start medication or therapy. Some patients opted to think about the information provided and return when ready to discuss treatment options.

Limitations

Several limitations were identified during the implementation process. The most significant limiting factor was the size of the patient population. The screening pool was quickly saturated by the final three weeks as many patients had been screened more than once during the eight weeks. Clinics with high patient volumes may have different outcomes. Another limitation involved nurse staffing shortages on six of the fourteen days when PHQ-2 administration rates were below 80%. Week three had the lowest compliance with PHQ-2 administration at 43.5%, which might have been affected by higher-than-usual acuity and volume in the urgent care. The final limitation to consider is how mental health stigma within the community may have increased the rate of patient's refusal to participate.

Recommendations

The focus of future projects should include integrating PHQ documentation into the EHR. Eliminating the paper form may help improve staff adherence to screening processes if it is easy to enter results during the rooming process. Direct entry into the EHR also eliminates the task of scanning documents and reduces the risk of misplacing the paper questionnaire. As several research articles mentioned in the literature review, PHQ forms written in other

languages should be readily available to nursing staff (Bridges et al., 2019; Murillo et al., 2019). PHQ screening could also be expanded to the adolescent population (12-17) as the questionnaire has been validated for this population as well. Providing clear written instructions to all staff would also be beneficial, as this may have prevented the nurses' confusion regarding how to document screening refusals. Additional screening protocols could be implemented for other mental health concerns, such as anxiety and suicidal ideation. The Generalized Anxiety Disorder 7-Item (GAD-7) and Columbia-Suicide Severity Rating Scale (C-SSRS) are examples of well-known screening tools that could be added to the protocol.

Conclusion

The findings supported the efficacy of the PHQ in identifying depression within a primary care setting. The short-term goals of the implementation project were successfully met after patient refusals were considered. A total of 30 patients had their depression addressed during the eight-week timeframe, which provides evidence that depression screening in rural areas can be worthwhile. Offering this service to patients improves quality standards set by clinical guidelines and allows early intervention for patients who may not usually seek help for their mental health. Making mental health a regular discussion at every primary care visit could help the clinical site reach its long-term goal of reducing urgent care encounters related to mental health crises. Other rural clinics are likely to find the improvement project protocol helpful in developing routine screenings in their small facilities. The process developed for implementation is easily duplicated and can be adjusted to meet the unique needs of other rural sites throughout

Montana. Moreover, these measures promise to enhance mental health care delivery and outcomes in the rural primary care setting.

CHAPTER FOUR

ADVANCED NURSING ESSENTIALS REFLECTION

The Mark and Robyn Jones College of Nursing (MRJCON) at Montana State University (MSU) developed a curriculum that emulates “The Essentials: Core Competencies for Professional Nursing Education” written by the American Association of Colleges of Nursing (AACN). The essentials are categorized into ten domains, which carry the following labels: Knowledge for Nursing Practice, Person-Centered Care, Population Health, Scholarship for Nursing Practice, Quality and Safety, Interprofessional Partnerships, Systems-Based Practice, Information and Healthcare Technologies, Professionalism, and Personal, Professional, and Leadership Development (American Association of Colleges of Nursing, 2021). While the coursework I completed over the last three years adequately covers the competencies within all ten domains, a few stand out as I reflect on my educational journey. The following paragraphs will discuss the essentials that have impacted my personal and professional development as a doctoral nurse practitioner candidate.

Domain 2: Person-Centered Care

The concept of person-centered care is an adequate personification of what the nursing profession stands for. As undergraduate nurses, we were taught to protect and advocate for our patients. Patient advocacy is expanded upon as we transition to the role of a primary care provider and is a skill the nursing profession does exceptionally well. Our didactic courses (NRS 621, 622, 623, and 624) reminded us to look at every patient holistically, meaning treat the person, not just the disease. For example, I may diagnose two patients with type II diabetes

who are at very similar stages clinically. However, the conversations and treatment plans may differ based on each patient's unique social considerations, perceptions, and priorities. One patient may be fearful of the long-term effects diabetes could have on their body, while the other is more concerned about side effects from recommended medications. Both perspectives are valid and will likely influence how I approach individual treatment plans.

I have been fortunate to foster difficult conversations with patients during my clinical rotations, and the importance of empathetic communication quickly became very clear. Taking the time to facilitate conversations appropriately can allow the patient to feel cared for and in control of their health outcomes. Supporting a patient's autonomy through shared decision-making, even when it does not coincide with your recommendation, creates a safe environment where the patient can ask questions and actively participate in their healthcare.

Domain 3: Population Health

Vulnerability and Health Care in Diverse Communities (NRS 614) allowed us to explore diverse populations within our communities. We were also required to explore topics of interest through avenues such as books, documentaries, and podcasts. The multimedia approach of this course fostered an eagerness to learn, considering I deeply enjoy consuming documentaries and podcasts during my free time. I learned so much regarding the systemic oppression of marginalized communities within the United States and what we can do as providers to offset these issues. Checking myself for unintentional internalized biases is now an essential component of my patient care practice.

I also had the great privilege to participate in the MSU school clinic outreach program that services the American Indian reservations in Montana. I live near the Northern Cheyenne and Crow reservations and have cared for this population as a nurse for many years. Participating in the outreach clinic offered a superb opportunity to learn more about the social and cultural barriers faced by the American Indian population. Common trends I identified to be associated with poor health outcomes in children were directly related to accessibility. Many reservations are in food deserts, meaning there are few options for fresh produce, which directly correlates to higher food costs. Access to fresh and healthy foods played a massive role in many adverse health outcomes we observed, including childhood obesity and poor dentition. Other accessibility issues discovered included lack of transportation and distrust in the medical community. My experience during this rotation provided powerful insight into how I can provide better care to the American Indian population as a primary care provider.

Domain 4: Scholarship for Nursing Practice

Throughout the doctoral program, I spent many hours learning how to interpret and disseminate scholarly information and research. Evidence-Based Practice I and II (NRSG 604 and 605) and Statistical Applications (NRSG 606) promoted a deeper understanding of how guidelines are developed and utilized in the healthcare and scientific community. I discovered that the mere publication of research does not always translate into clinical or statistical significance. As providers, we are required to dissect the information we find and evaluate sources to determine the validity of the research presented.

I also determined that providing relatable evidence or statistics during patient visits can be helpful. This technique is particularly impactful when patients have misconceptions about medications such as antibiotics or opioids. Explaining to patients why these medications may or may not be appropriate using a fact-based and clinically supported approach can positively impact the perception of the care they receive. Word choice and tone are essential when using this approach to avoid minimalizing or belittling a patient's thoughts or experience. We were given great examples of how to approach these discussions in our pharmacology courses and midlife family didactic.

Domain 5: Quality and Safety

Addressing quality and safety issues in healthcare allows nurse practitioners to advocate for improved patient care within their facility. The final year of the doctoral program focuses on the development, implementation, and defense of a quality improvement project. This allows students to showcase the skills they learned throughout the program that will contribute to improved workflow, patient safety, and overall outcomes. Discovering how much time and effort goes into developing practice guidelines, policies, and safety standards has allowed me to garner a newfound appreciation for the process and what it stands for. During the implementation of my project, I learned how an idea must change and adapt to address barriers. The process was challenging in many ways, but looking back on the progress and impact of the project, I see that it was worth the struggle. I now feel confident in my ability as a nurse practitioner to be a leader in change. The scholarly project experience has constructed a pathway I can follow when it comes time to make systematic improvements within my future practice environment.

Domain 7: Systems-Based Practice

One of the most complicated components of working as an advanced practice provider is the challenge of providing high-quality care in a complicated and broken system. Nurse practitioners provide care to patients from all walks of life, and unfortunately, access to healthcare is not distributed equally. Luckily, many of my professors have discussed fiscal stewardship within healthcare. Although it is tempting to order multiple diagnostic tests to uncover a clear diagnosis, this is not always necessary or appropriate. While there certainly will be times when extensive testing is warranted, burdening a patient with a large medical bill can cause more harm than good. I have learned to think about my exact intentions with each test I order and how the results will impact the care I provide.

I have unfortunately found myself having conversations with many patients about alternative treatments or pathways due to their inability to afford what is typically recommended. Many patients lack adequate insurance coverage and cannot manage the out-of-pocket expenses associated with healthcare. Having the knowledge base to advocate for my patients will hopefully improve their access to care. Some examples include helping patients apply for Medicaid, providing resources to help with medication costs, or completing peer-to-peer reviews with their insurance company to approve non-formulary treatments.

Conclusion

The extent to which my professors and clinical preceptors have prepared me to begin the next chapter of my nursing career cannot be adequately put into words. I have gained a wealth of knowledge over the last three years and feel I can apply the AACN's nursing essentials to the

care I plan to provide. I can confidently say MSU's MRJCON has extensively covered all ten domains of the nursing education essentials, which have helped define my ethical and moral code as an advanced practice provider. I look forward to learning more throughout my career and am proud of my accomplishments as I conclude my graduate school journey.

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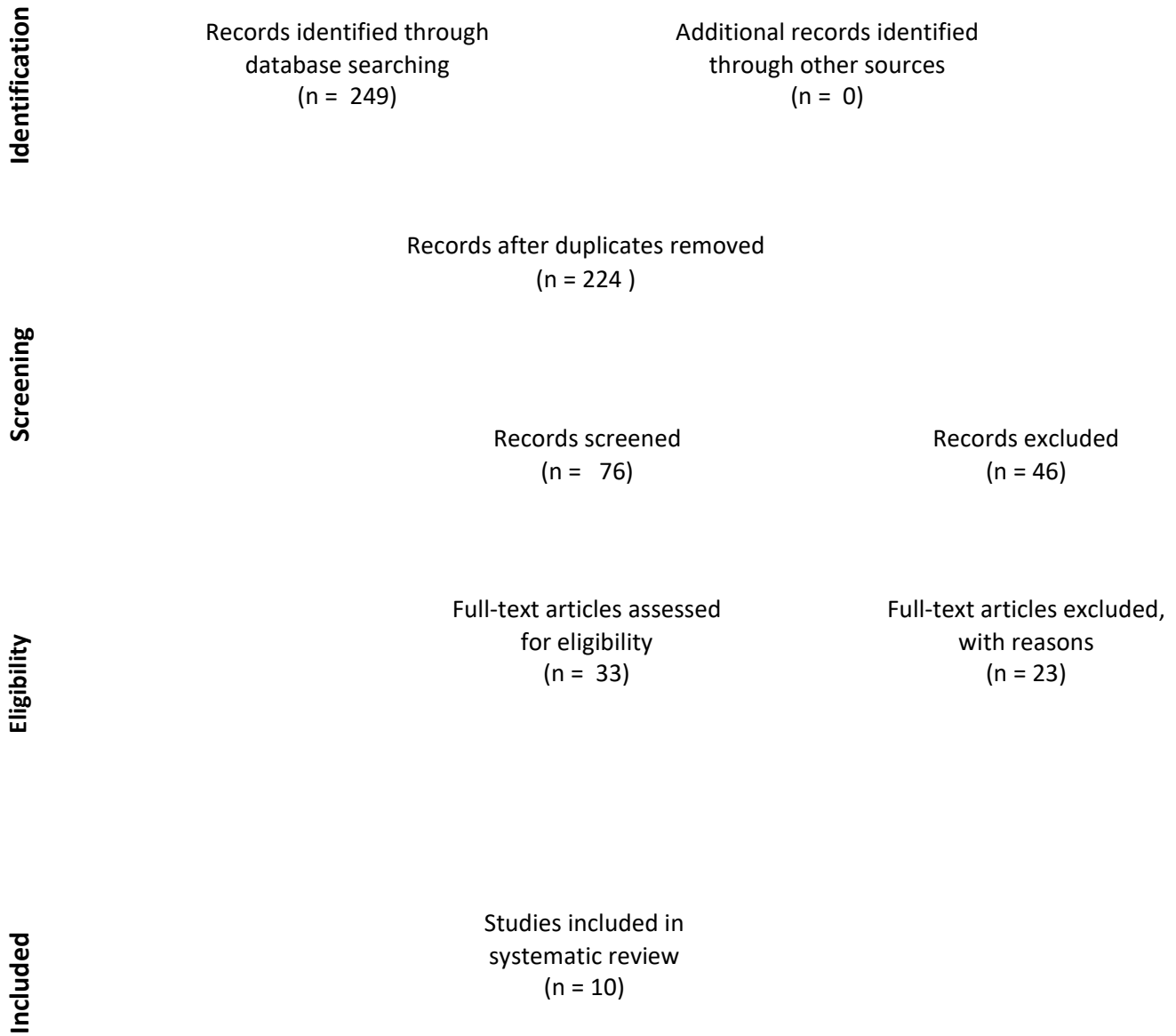
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APPENDICES

APPENDIX A

PRISMA DIAGRAM

Figure A.1 PRISMA diagram



APPENDIX B

PERMISSION FOR IOWA MODEL

Figure A.2 Permission to Use Iowa Model

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