# IMPLEMENTATION OF THE PATIENT HEALTH QUESTIONNAIRE-2 & 9 ADOLESCENT MODIFIED [PHQ-2 & 9 A] IN A PEDIATRIC CLINICAL SETTING: A QUALITY IMPROVEMENT PROJECT

by

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# ABSTRACT

In Montana, the importance of pediatric depression screening within the pediatric primary care setting cannot be overstated, mainly due to the state's high prevalence of pediatric depression and unique rural challenges. Pediatric primary care is often the first line of defense in identifying and addressing mental health issues in children and adolescents. In such a vast and predominantly rural state, primary care providers play a crucial role in early detection and intervention, overcoming barriers such as limited access to specialized mental health services and cultural stigmas. Effective screening and early intervention strategies immediately benefit the child's mental health and contribute to long-term positive academic and social development outcomes. Integrating mental health services into primary care is essential for improving healthcare outcomes.

The American Academy of Pediatrics' current guideline recommends that all children 12 years and older receive annual depression screening using a validated and reliable tool such as the Patient Health Questionnaire- 2 & 9 Adolescent Modified [PHQ-2 & 9 A]. Unfortunately, at an urban Montana pediatric primary care clinic, the number of pediatric patients receiving appropriate screening is below sub-optimal. A Plan, Do, Study, Act cycle was implemented throughout the clinic to increase pediatric depression screening rates through education, reminder-based systems, and standardized hand-off reports.

# CHAPTER ONE

# INTRODUCTION, BACKGROUND, & LITERATURE REVIEW

## Introduction

Depression is not a disorder exclusive to adults; both children and adolescents in pediatric populations are increasingly acknowledged to be at risk, with the most significant risk beginning at age 12 and continuing to age 18 (Centers for Disease Control and Prevention [CDC], 2023). Depression is a disorder of the brain that is more than simply feeling "down" or "blue"; it is a complex brain disorder that manifests variably among individuals (Substance Abuse and Mental Health Services [SAMHSA], 2023). According to the Montana Office of Public Instruction's (MOPI) Youth Risk Behavior Survey (2021), 41% of high school students, a 30-year high, reported feelings of sadness or hopelessness over the last year. Notably, around 90% of those who die by suicide have a diagnosable mental illness, the most frequent being major depression (Rosston, 2022). A 2019 survey by the CDC found that approximately 9% of adolescents participating in the survey had made at least one attempt at suicide in the previous 12 months (CDC, 2023). Since Montana's youth suicide rate from 2011 to 2020 was 11.9 per 100,000, surpassing the national rate of 4.8 per 100,000 by more than double, there is a pressing need to address depression proactively in all clinical settings (Rosston, 2022).

Recent studies reveal that 30% of individuals visited healthcare facilities within a week of their suicide, over half within a month, and over 90% within a year (Ahmedani et al., 2020). With 34% of its population in rural areas and one of the lowest population densities in the United States, Montana faces significant healthcare disparity challenges. Rural challenges include

geographic isolation, limited healthcare providers, prevalent health risk behaviors, and lower socioeconomic status (Adams, n.d.). These factors result in higher mortality rates in rural Montana and burden its economic, healthcare, and education systems with increased costs, school absences, and missed work (Adams, n.d.).

Between 2009 and 2019, the percentage of high school students nationally who report persistent feelings of sadness or hopelessness rose by nearly 10%, reaching 36.7% (Davide, 2022). However, despite the reported increase in pediatric patients suffering from mental health challenges, the number of qualified practicing mental health providers has been insufficient to address the issue and the need. This has resulted in the National Association of Pediatric Nurse Practitioners (NAPNAP), the American Academy of Pediatrics (AAP), and the American Board of Pediatrics (ABP) encouraging the integration of behavioral health screening and services into routine primary care environments (Davide, 2022). This approach aims to utilize current healthcare practitioners to screen, identify, and treat pediatric patients who would otherwise miss opportunities for screening due to the lack of mental health providers nationwide.

According to the 2018 guidelines from the AAP, children should begin having regular annual well-child assessments with their provider at age three. Furthermore, the AAP's 2019 recommendation advises yearly depression screenings for children 12 years and older. Neglecting adolescent mental health issues can have lasting effects into adulthood, impacting both physical and emotional well-being and restricting the potential for a fulfilling adult life, which has immense ramifications on the United States healthcare system (World Health Organization [WHO], 2021). These guidelines offer providers and their teams at least ten

opportunities to screen and recognize pediatric patients facing mental health challenges between 12 years and adulthood.

## Local Problem

Presently, the rates of pediatric depression screening in an urban Montana pediatric primary care clinic do not meet the established AAP guidelines. While the clinic once maintained rigorous mental health screening procedures for all patients ages 12 years old and above, recent organizational shifts have led to a concerning decline in mental health screening. During a chart audit from September 11th, 2023, to September 19th, 2023, for all patients aged 12 and older, none of the 28 identified patients had received the recommended depression screening by the American Academy of Pediatrics (2019) either during that visit or the previous year. To ensure the highest standard of care for the young patients this clinic cares for, it is vital to implement constructive changes in education, workflow, and the completion of mandatory practices.

# Methods

## Overview of Literature Search

The literature search aimed to identify and refine articles that discussed and supported current evidence-based practices to improve the rates of pediatric depression screening within medical practices serving pediatric patients and identify an adequate body of evidence to support a specific approach to this clinical problem. This was completed by searching multiple databases, utilizing different resources and tools, and using appropriate inclusion and exclusion criteria.

Search Strategy

The literature review process was conducted using a systematic review of databases, including PsychINFO, Web of Sciences, and CatSearch. Searching, identifying, selecting, compiling, and synthesizing the literature was performed to organize the information appropriately. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses diagram, or PRISMA, was utilized to visually map the process of searching, screening, excluding, and including evidence. The inclusion and exclusion process can be followed in the PRISMA diagram featured in Figure 1 below. The key terms initially searched on July 24th, 2023, were pediatric, depression screening, and quality improvement, which were used to identify articles for consideration. However, the key terms were later broadened to provide an adequate body of evidence for this quality improvement project. The final key search terms searched on September 9th, 2023, included pediatric, depression screening, quality improvement, primary care, evidence-based, and adolescent.

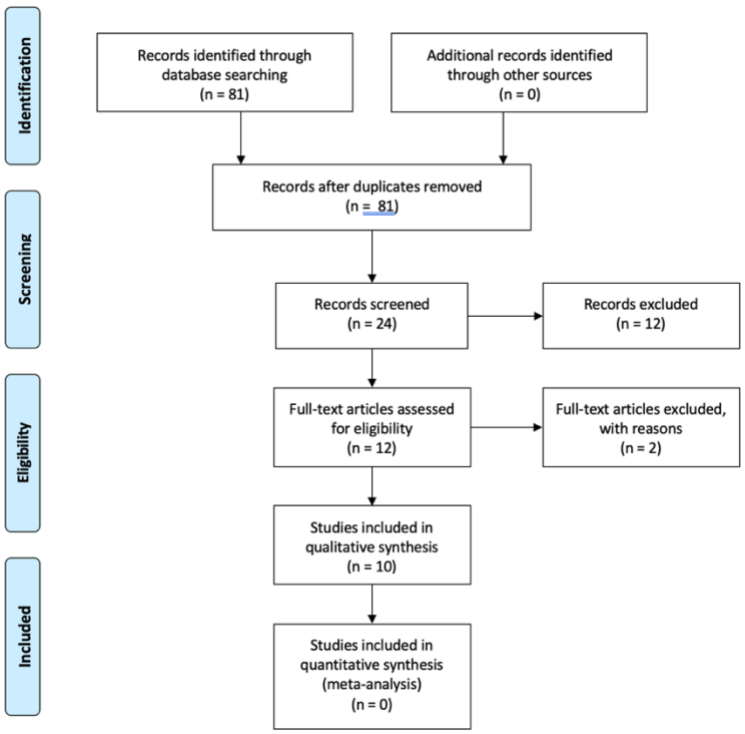


Figure 1. PRISMA Diagram

Inclusion Criteria

Studies that were included were required to meet the following criteria: (1) original, English peer-reviewed article, (2) earliest publication date 2016, (3) directed at the pediatric population, specifically ages 11 to 21, and (4) discussed strategies to increase pediatric depression screening rates. Approximately 80 articles were initially identified, and 11 of those ultimately met the criteria for inclusion.

Articles were first reviewed based on their abstracts and overviews. Then, the full-text article was read and examined to determine its appropriateness and the information provided. If the article met the inclusion criteria and was found appropriate for the clinical problem, it was included as evidence. Articles excluded were duplicates, studies focusing on adults, and articles not addressing strategies for increasing pediatric depression screening.

# Results

## The Pediatric Primary Care Setting

Screening for depression in the pediatric primary care setting is essential. Nearly 90% of U.S. youth routinely visit their pediatric providers (Honigfeld et al., 2017). As a result, these providers often serve as the initial point of contact for pediatric patients potentially suffering from mental health challenges (Baum et al., 2020; Beck et al., 2022; Beers et al., 2017; Honigfeld et al., 2017; Leslie & Chike-Harris, 2018; Mansour et al., 2020; Parkhurst & Friedland, 2020). This role is advantageous as many pediatric patients find it easier to discuss sensitive mental health topics with their familiar providers (Baum et al., 2020; Beck et al., 2022; Parkhurst & Friedland, 2020). The combination of being the initial point of contact and maintaining a trusted rapport with patients positions providers to identify and address mental health conditions such as depression, anxiety, and suicidal ideation immediately (Baum et al., 2020; Beck et al., 2022; Beers et al., 2017; Bose et al., 2021; Honigfeld et al., 2017; Leslie & Chike-Harris, 2018; Mansour et al., 2020; Parkhurst & Friedland, 2020).

Detecting depression, anxiety, and suicidal ideation is only the beginning. Providers must also ensure continuous care and collaboration with mental health specialists when necessary. Given the primary care providers central role with patients, pediatric primary health care teams are ideally positioned to address urgent matters and to consult with referring providers, ensuring optimal outcomes for patients (Baum et al., 2020; Beck et al., 2022; Beers et al., 2017; Bose et al., 2021; Honigfeld et al., 2017; Leslie & Chike-Harris, 2018; Mansour et al., 2020; Parkhurst & Friedland, 2020).

The primary care provider's consistent presence in the pediatric patient's healthcare experience uniquely positions them to detect the early signs of depression, anxiety, and suicidal ideation. Screening within the pediatric primary care setting promotes early identification and intervention of mental health concerns and fosters a holistic health approach encompassing physical and psychological well-being. By integrating depression screenings into routine pediatric visits, primary care providers can ensure that their patients receive comprehensive care, ultimately enhancing the patient's quality of life while fostering healthy behaviors, creating treatment protocols that eventually impact the patient's health in the present and their futures (Baum et al., 2020; Beck et al., 2022; Beers et al., 2017; Bose et al., 2021; Honigfeld et al., 2017; Leslie & Chike-Harris, 2018; Mansour et al., 2020; Parkhurst & Friedland, 2020).

## Importance of Standardized, Validated, and Reliable Screening Tools

The Patient Health Questionnaire (PHQ) and the Beck Depression Inventory are the two most common screening tools widely recognized as the clinician's gold standard for evaluating patients for depression (Patra & Kumar, 2022). The PHQ and the Beck Depression Inventory are validated, reliable, and well-respected instruments designed for appropriately and accurately identifying pediatric and adult patients with mental health issues (APA, 2023).

The adoption of standardized screening tools within the Pediatric patient care practice ensures consistency in the evaluation process (Beck et al., 2022; Bose et al., 2021; Crandal et al., 2022; Honigfeld et al., 2017; Leslie & Chike-Harris, 2018; Mansour et al., 2020; Parkhurst & Friedland, 2020). Such standardization provides an objective framework, allowing healthcare providers to track and compare results over time. This consistent metric aids in making well-informed clinical decisions about mental health referrals, cognitive behavioral therapy,

pharmaceutical therapy, or other methods of treatment (Beck et al., 2022; Bose et al., 2021; Crandal et al., 2022; Honigfeld et al., 2017; Leslie & Chike-Harris, 2018; Mansour et al., 2020; Parkhurst & Friedland, 2020).

Among the many standardized screening tools available to clinicians, the PHQ was one of the most common choices (Bose et al., 2021; Crandal et al., 2022; Honigfeld et al., 2017; Kemper et al., 2021; Leslie & Chike-Harris, 2018; Mansour et al., 2020). The PHQ is a self-administered instrument designed to assist clinicians in identifying patients facing mental health challenges. The PHQ-2, a brief two-question version for patients without apparent concerns, is typically the starting point. If a patient scores atypical results, a score of three or greater, on the PHQ-2, the more comprehensive PHQ-9, comprising nine questions, can be used for further evaluation. The PHQ-9 has a sensitivity of 89.5 and a specificity of 77.5 for identifying adolescent depression (Parkhurst & Friedland, 2020). However, using this tool alone can lead to high rates of false positives (Parkhurst & Friedland, 2020). This underscores the idea that either screening tool should not be viewed as the definitive measure in diagnosing pediatric depression. Instead, both tools should be helpful, guiding the clinician to comprehensively evaluate the patient (Parkhurst & Friedland, 2020).

### Healthcare Team Education

An identified significant barrier to pediatric depression screenings is often a perceived lack of confidence in the provider's education, training, and ability to manage depression effectively (Beck et al., 2022). This concern is underscored by the fact that nearly 50% of pediatricians reported a lack of confidence in their ability to recognize depression (Mansour et al., 2020). Prioritizing and implementing educational programs and training for providers and

their teams have been highlighted in numerous studies as a critical strategy to increase pediatric depression screening rates (Beck et al., 2022; Beers et al., 2017; Bose et al., 2021; Crandal et al., 2022; Leslie & Chike-Harris, 2018; Mansour et al., 2020). One of the most notable studies dramatically increased screening rates from 1% to 74% (Beers et al., 2017).

To achieve lasting improvements in the rates of pediatric depression screening, a holistic system approach is essential (Beck et al., 2022; Mansour et al., 2020). This entails providing the provider and their healthcare team with the education and training necessary to address sensitive subjects that were historically not included in Medical Education programs, thus adding to the perception that MH is a challenging and uncomfortable topic area to approach within the well-child exam. Providers' training, education, and feedback interventions have proven effective in helping providers identify patients struggling with mental health issues (Beck et al., 2022; Mansour et al., 2020).

## Implications to Practice

Integrating pediatric depression screening into the primary care setting holds many implications for clinical practice. Foremost, a shift in the foundational primary care framework is required, emphasizing a holistic approach that incorporates both patient physical and mental health. This foundational transition will require extensive training and education to ensure the providers are appropriately equipped with the training, competency, and confidence to screen, identify, and manage pediatric depression. The primary care setting must also determine and adopt the systematic use of standardized screening tools embedded into their practice's guidelines. The organization and the providers might also need to adjust appointment durations

to accommodate screenings without compromising the quality of care for other healthcare concerns.

Furthermore, implementing such screenings will likely increase the referral rate for mental health services, thereby increasing the demand for scarce resources such as specialized mental health services, psychiatrists, or therapists, especially in rural or underserved communities. Therefore, primary care settings might also consider building collaborative networks with mental health professionals to aid in caring for these patients. This also highlights the importance of establishing clear referral pathways to ensure that children and their families have streamlined access to the necessary follow-up care when a positive depression screen result is identified in the primary care practice; this is especially important if the primary care provider is not providing subsequent treatment. This integration of services ensures identification and continuity of care, which is essential for positive outcomes in patients diagnosed with pediatric depression.

## Conclusion

The significance of pediatric depression screening within the primary care setting cannot be understated. As the first point of contact for many patients, primary care providers are uniquely positioned to identify early signs of depression and pave the way for timely intervention and management. Reinforcing this essential role, 90% of pediatricians acknowledge their responsibility to recognize and address pediatric depression (Mansour et al., 2020). This overwhelming consensus underscores pediatric primary care providers' collective responsibility and commitment. However, recognition is the first step in a holistic and comprehensive approach. Comprehensive care involves early detection and ensuring appropriate resources,

interventions, and follow-up measures are in place. Considering that mental health challenges among America’s pediatric population are on the rise, utilizing the primary care setting for early screening and intervention becomes not just a best practice but an obligation to our children's future well-being.

# CHAPTER TWO

# QUALITY IMPROVEMENT PROPOSAL

## Introduction and Problem

### Introduction

Pediatric depression screening within primary care is vitally important, given its extensive ramifications across the various healthcare system levels. Contrary to popular belief, depression and suicide are not confined solely to the world's underserved or economically challenged regions. Globally, suicide is the fourth leading cause of death in those aged 15 to 29 (WHO, 2021). In the context of the United States, the gravity of youth mental health is underscored by the unsettling statistic that suicide surpasses other significant medical conditions as the leading cause of death in the 10 to 24 age range (Asarnow, 2023). Notably, Montana continues to emerge as a state with a disconcerting trend, consistently ranking among the highest in pediatric depression and suicide incidences in the country (America's Health Rankings, 2021).

Furthermore, individuals grappling with depression and concomitant mental health concerns have direct annual medical costs nearly triple that of the general population (Tkacz & Brady, 2021). Escalating healthcare costs, often worsened by delayed or overlooked diagnoses, could be substantially reduced through timely and systematic screening, fostering early detection and intervention (Tkacz & Brady, 2021). Early detection and intervention are emphasized in the 2019 screening guidelines by the AAP, which recommend annual screening for depression and suicide risk in all children aged 12 and older annually (AAP, 2019).

## Local Problem

Despite the AAP 2019 guidelines, an urban Montana pediatric primary care clinic has failed to screen appropriate patients. An audit from September 11th to 19th, 2023, revealed that out of 28 patients who met the AAP's criteria for depression screening, none had been screened during their recent visit or in the past year. Alarmingly, five of these patients had appointments for mental health concerns, with one recently discharged from the hospital following a suicide attempt. Furthermore, Montana currently ranks 48th in the nation for teen suicides, surpassed only by South Dakota and Alaska in teen suicide deaths per 100,000 adolescents aged 15-19 (America's Health Rankings, 2021). Montana also ranks 46th in the nation for diagnosed childhood depression in those aged three to 17 (America's Health Rankings, 2021). Considering this audit captures only a week's worth of patients, and given Montana's alarming mental health statistics, the potential magnitude of unscreened individuals is profoundly troubling.

## Intended Improvement

This quality improvement project aims to increase the depression screening rate for suitable pediatric patients from 0% to 90% or better by May 2024, leveraging the adolescent-revised Patient Health Questionnaires 2 and 9 (PHQ-2/9 A) coupled with a standardized hand-off tool to help the providers identify positive screenings. The PHQ-2/9 A, a widely adopted tool recommended for depression and anxiety screening in pediatric populations (Patra & Kumar, 2022), is already embedded in the clinic's electronic health record but has not been optimally employed. Previously, "hard stops" were implemented; these tasks are mandatory to complete the intake process in the electronic health record. The system would prevent supporting staff from finalizing the intake if the patient has not undergone a depression screening within the past

year. However, this mechanism has since been eliminated. The abandonment of the "hard stop," implemented across the organization, has had significant implications. Specifically, using the PHQ 2/9 A as a universal screening instrument within all organization clinics is required. This obligatory practice raised concerns about its suitability across diverse patient populations within other clinical settings, potentially compromising the tailoring of care to individual patient needs. This issue has since led to a significant decrease in the number of patients who are being appropriately screened.

The reintroduction of the "hard stop" feature is not feasible as a strategy to bolster depression screening rates within the clinic at this time. Consequently, alternative measures must be adopted. To improve adherence to depression screening protocols using the PHQ 2/9 A, a physical paper-based reminder system attached to the examination room computers will be implemented. This reminder will prompt support staff to conduct a depression screening assessment during the patient intake. Providers and staff will also receive comprehensive training on the tool, emphasizing its importance, correct screening methods, and the AAP's latest screening guidelines.

Additionally, we are partnering with Montana's suicide prevention coordinator, Karl Rosston, LCSW, for in-depth training highlighting the crucial steps of patient identification, effective use of resources, and accurate screening. Patient exam rooms will also have informational pamphlets, under-scoring available mental health resources, and our providers' readiness to discuss emotional health. Finally, providers will receive standardized handoff reports in the SBAR (situation, background, assessment, and recommendation or request) format for patients who screen positive for seamless communication.

Organizational Microsystem (Setting)

The Healthcare Team and Setting: This urban pediatric primary care clinic is open weekdays from 8:00 A.M. to 5:30 P.M. The team consists of three general pediatricians: two with a Medical Doctor (MD) degree and one with a Doctor of Osteopathic Medicine (DO) degree. Their schedules are staggered; two pediatricians are present on Monday, Wednesday, and Friday, while one is available on Tuesday and Thursday. During the audit week, all three providers worked and saw an average of 33 patients daily. The clinic also hosts two specialist pediatricians, one MD, and one DO. They have a similar schedule, with one specialist available on Monday, Wednesday, and Friday, while two are available on Tuesday and Thursday. During the audit week, these two providers saw an average of 7 patients daily.

In addition to the pediatricians, the clinic is bolstered by seven dedicated support staff members who handle a range of daily responsibilities. These tasks encompass escorting patients to their rooms, managing patient intake, maintaining room cleanliness, assisting providers with procedures, and managing phone communications. The team includes four registered nurses with baccalaureate degrees (BSN-RN) and three medical assistants (MA). All support staff members are trained to assist any provider in the clinic, ensuring they are adept at addressing the diverse clinical needs that may arise. An overview of this information can be found in Table 1 below at the end of this Organizational Microsystem section.

The patient's clinical experience typically begins with a member of the support staff, who ushers them from the waiting area to the exam room. Subsequently, they undertake the patient intake, which involves recording vital signs and completing any necessary screenings or documentation relevant to the patient's appointment. The staff member then updates the patient's status in the electronic health record to notify the provider that the patient is ready for the

encounter; rarely is there a discussion between the provider and the support staff regarding the patient, their concerns, intake screening, or documentation.

The Data: The clinical director reported that in September 2023, collectively, the providers in the clinic cared for 646 patients, with a daily average of 28.7. These figures are below the clinic's usual patient volume. The September 11th and 19th audits indicate numbers that align more closely with the typical patient count. Based on an estimated 260 working days a year and the clinic's rate of seeing 40 patients daily, the annual patient volume is projected to be around 10,400. The one-week audit revealed that 28 patients were not appropriately screened, matching the AAP recommended criteria. This figure translates to 18% of the total patients that week. Extrapolating this percentage, nearly 1900 children may go unscreened annually, missing potential identification and treatment. This is alarming, especially considering that in the United States, suicide tops the list as the leading cause of death for the 10 to 24 age group, overtaking other significant medical conditions (Asarnow, 2023.). Moreover, Montana persistently finds itself among the five lowest-ranking states for depression and teenage suicides (America Health Rankings, 2021). Such data emphasizes the pressing need for immediate action.

| Staff Type | Degree/Certification | Monday | Tuesday | Wednesday | Thursday | Friday | Average Patients Per Day |
|---|---|---|---|---|---|---|---|
| General Pediatricians | MD (2), DO (1) | 2 | 1 | 2 | 1 | 2 | 33 (collectively during the audit) |
| Specialist Pediatricians | MD (1), DO (1) | 1 | 2 | 1 | 2 | 1 | 7 (collectively during the audit) |
| Support Staff | BSN-RN (4), MA (3) | 4 to 5 | 4 to 5 | 4 to 5 | 4 to 5 | 4 to 5 | - |
| Average Combined Patients Seen | - | - | - | - | - | - | 40 (average combined) |
| Total Patients Seen (Sept.) | - | - | - | - | - | - | 646 |
| Average Patients/Day (Sept.) | - | - | - | - | - | - | 28.7 |

Table 1. Staff and Data

Rationale and Framework

The framework for executing this quality improvement project is rooted in the Plan, Do, Study, and Act (PDSA) methodology, as outlined in the Institute for Healthcare Improvement's Quality Improvement Essentials Toolkit (2023). Recognized widely within healthcare, the PDSA cycle embodies a series of systematic steps designed to acquire insights and facilitate the continued enhancement of a given process (Institute for Healthcare Improvement, 2023). Given that the project's objective is to bolster pediatric depression screening rates for patients aged 12 and up in an urban Montana pediatric primary care setting, the PDSA cycle emerged as a suitable approach to take on the task of planning, implementing, evaluating, and refining the process for optimal results.

In the initiation of the planning phase of the PDSA cycle, we address the question: How can we enhance pediatric depression screening rates in an urban Montana pediatric primary care

setting? The PHQ-2/9 A is recognized for its reliability in screening pediatric patients for depression, showcasing both high sensitivity and specificity (Patra & Kumar, 2022). For the success of this project, employing this tool while also providing comprehensive education and training to integral stakeholders – including patients, families, support staff, and healthcare providers – is crucial. Upon securing approval from the specified site and the Montana State University Internal Review Board, the plan will go as shown in Figure 2.

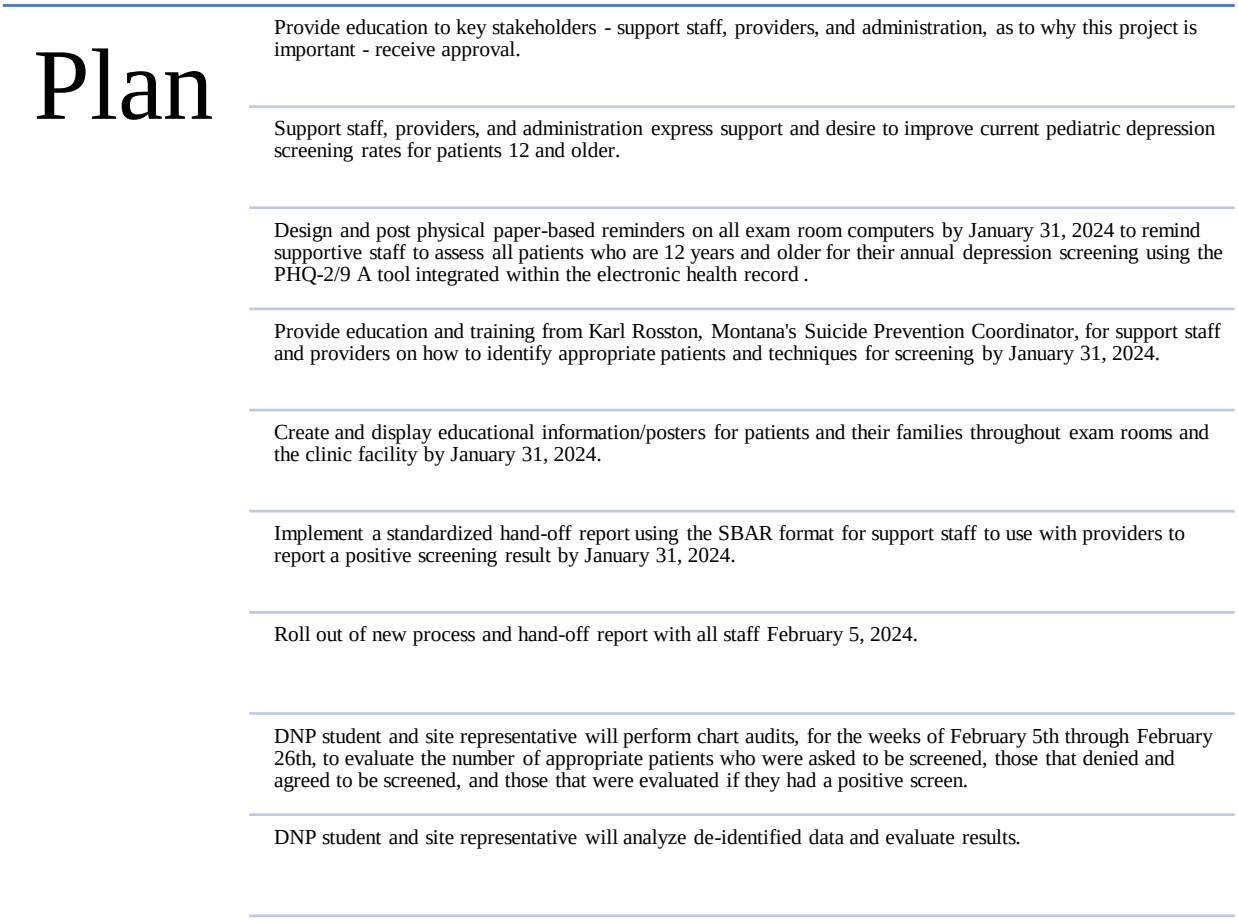


Figure 2. Plan

During the second phase, the “do” phase, the newly proposed process will be implemented into clinical practice starting the week of February 5, 2024. At every visit, our supportive staff will administer the Patient Health Questionnaire-2 A (PHQ-2 A) to all patients aged 12 and older. The Patient Health Questionnaire-9 A (PHQ-9 A) will be completed annually or more frequently if indicated by the PHQ-2 A results. Concurrently, they will adopt the standardized SBAR handoff report, facilitating providers in identifying patients with positive screening results. This schedule provides a sufficient window for comprehensive training and education, essential for securing stakeholder engagement in the project. In this portion of the PDSA cycle, there is an emphasis on allocating additional consideration and time to identify previously overlooked barriers and drivers for change (Institute for Healthcare Improvement, 2023). The comprehensive plan will be elaborated upon in the subsequent section, “Intervention and Implementation.”

In phase three, termed the “study” phase, we assess the outcomes of the process change. This involves analyzing de-identified data, encompassing metrics like the number of patients due for screening, those who were approached for screening, the subset that consented or declined, and finally, the count of patients with positive screenings who underwent thorough evaluations by the provider. The DNP student and the site representative will gather this information through a manual chart audit for February 5$^{th}$ through February 26$^{th}$, 2024. Concurrently, the team will deliberate on unforeseen challenges and drivers for change to guide further refinement of the intervention and processes.

In the final phase of the PDSA cycle, the “act” phase, we leverage insight gleaned from the study phase on data, challenges, and drivers for change, refining our interventions to enhance

the likelihood of success. Following this, the PDSA cycle recommences, allowing us to utilize what we have learned to devise further strategies to achieve the goals set forth below in Figure 3.

**Short-Term Goals**

- Implementation of the physical paper-based reminders on all exam room computers by January 31st, 2024 to remind supportive staff to assess all patients who are 12 years and older for their annual depression screening using the PHQ-2/9 A tool integrated within the electronic health record.

**Mid-Term Goals**

- 100% of support staff (RNs and MAs) will complete the education/training provided by the state's Suicide Prevention Coordinator before January 31, 2024.
- 100% of appropriate patients will be asked to participate in screening with 90% agreeing and completing the screening by May of 2024.
- Create and place informational posters, pamphlets, and other literature within the exam rooms by January 31, 2024.
- Implement a standardized hand-off report from support staff to the provider for patients who receive a positive screening by January 31, 2024.

**Long-Term Goals**

- 100% of positively identified patients evaluated will receive an appropriate treatment or plan by the end of the project.

Figure 3. Goals

## Methods

### Specific Aims and Intervention Summary

The goal of the interventions in this quality improvement project is to increase the pediatric depression screening rates from a baseline of zero to 90% for patients aged 12 and older at an urban Montana pediatric primary care clinic by May 2024. Achieving this objective involves revisiting the existing AAP's depression screening guideline (2019), refining the current intake procedure to include mandatory screening for appropriate patients, introducing

standardized SBAR hand-off tools, and enhancing the education and training for patients and their families as well as the clinic's support staff and providers. Given the prevailing global, national, and state data on youth mental health, the potential for early detection and intervention is crucial for the well-being of our upcoming generations.

## Intervention and Implementation

While the process entails multiple steps, as illustrated in Figure 3 at the end of this section, spanning January to May 2024, the pivotal intervention in this quality improvement project is the introduction of physical paper-based reminders on all exam room computers by January 31, 2024. This intervention aims to provide a visual reminder to supportive staff to assess all 12-year-old and older patients for their annual depression screening and use the PHQ-2/9 A tool integrated within the electronic health record if needed. Ideally, an electronic "hard stop" or reminder system would be utilized. Unfortunately, this is not feasible now due to organizational constraints, and other methods must be used to increase pediatric depression screening rates in this urban pediatric primary care clinic.

The PHQ-2/9 A, adapted for ages 12 to 18, is a validated tool to identify patients with depression (Patra & Kumar, 2021). The PHQ-2 A initiates the screening with two questions about recent feelings, scored from zero to six (Anand et al., 2021). A score of three or above prompts the full PHQ-9 A assessment, delving deeper into the patient's mental well-being. These tools are detailed in Appendices A and B. It should be noted that the project site's patient population is predominantly White. It is acknowledged that a clinic serving a more diverse patient population would warrant exploring the potential for a more appropriate screening tool to meet the demands and needs of those patients.

Karl Rosston, the Montana Suicide Prevention Coordinator and a Licensed Clinical Social Worker, will spearhead education and training. With a stellar track record in enhancing state-wide depression screening rates and consequently reducing suicides, Karl's expertise will fortify the clinic staff's understanding of the project's significance. Additionally, informative sheets will be dispersed across the clinic, promoting a conducive atmosphere for candid discussions on mental health, often shrouded in stigma. This proactive approach has been shown to facilitate open patient-family dialogues on sensitive topics (van Landschoot et al., 2021). By January 31, 2024, the clinical team will have completed training under the guidance of Karl Rosston, and the DNP student and Site Representative will have prepared and distributed the necessary educational materials for the exam rooms and clinic.

This project will introduce the Situation, Background, Assessment, and Recommendation or Request (SBAR) handoff tool as a structured communication method. Direct interactions between supportive staff and providers are uncommon before patient encounters, with updates primarily conveyed via the electronic health record. Despite the SBAR tool's inherent limitations, the evidence underscores its efficacy in facilitating succinct and targeted nurse communications during care transitions (Achrekar et al., 2016). Our primary goal in employing this tool is to bolster communication between staff and providers, especially concerning patients' depression screening scores and any other potential clinical concerns. We anticipate the full implementation of this tool by January 31, 2024.

From a financial perspective, this project's budget is exceptionally manageable. The only anticipated expenditures pertain to creating and disseminating paper-based reminders and educational materials for patients and their families within the clinic and examination rooms.

Notably, Karl Rosston graciously offers his training and expertise at no charge, and the SBAR communication tool is freely accessible. The project's minimal financial implications, combined with its potential to profoundly benefit the patients of this urban Montana pediatric primary care clinic, make it especially compelling.

Two recurrent pitfalls in healthcare projects are overlooking foundational planning and neglecting critical stakeholder engagement (Kain, 2021). These could be potential barriers to this project. It is impractical to predict every challenge or facilitator, but meticulous planning and securing stakeholder commitment are pivotal to elevating pediatric depression screening rates. Employing the PDSA cycle is crucial as it fosters continual refinement of our approach. Monthly evaluations by the DNP student and Site Representative will ensure a proactive response to emerging challenges. Additional challenges the program faces are the reluctance of patients and their families to participate in screenings. Such hesitancy hinders our aim for universal screening, leading us to establish a more achievable target of a 90% screening rate. To understand the causes of this reluctance, we will encourage providers to have detailed discussions with the families. This will help us determine the reasons behind their refusal and enable us to address and overcome these previously unrecognized barriers to screening.

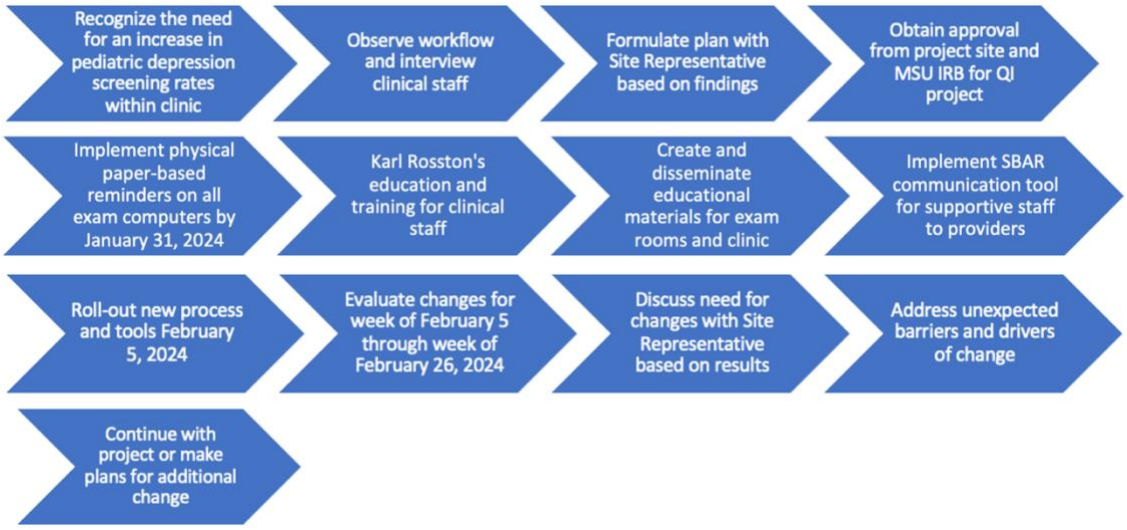


Figure 4. Process Diagram

Evaluation, Analysis, and Confidentiality

An essential phase in any quality improvement project is collecting, evaluating, and analyzing data throughout the project's lifecycle. This project encompasses multiple strategies, with implementing the physical paper-based reminders as a pivotal intervention. Though an electronic reminder system is the most effective, this physical paper-based reminder feature has still been underutilized and is crucial in ensuring supportive staff conduct the necessary depression screenings for pediatric patients.

To gauge the efficacy of the physical paper-based reminder system and other interventions, we will collect quantitative data on:

1. The number of patients who fit the screening criteria.
2. The number of patients who were approached for screening.
3. The number of those who accepted versus declined the screening.
4. The total of those screened who displayed signs of depression.

5. The number of those who were positively screened underwent a thorough evaluation by the provider.

This data will allow us to calculate:

1. The proportion of eligible patients who were approached for screening.
2. The percentage of those approached who agreed to be screened.
3. The percentage of positively screened patients whom a provider subsequently assessed.

For the systematic tracking of this data, a data collection tool will be utilized, details of which are available in Appendix C. By gathering this de-identified data, we can not only measure the success of our interventions against the SMART objectives outlined in Appendix D but also, more critically, gauge our strides toward amplifying both the frequency of pediatric depression screenings and the subsequent evaluations and treatment for those identified as needing them.

Safety and confidentiality are paramount, especially when dealing with sensitive groups like pediatric patients. It is reassuring to note that no additional risks are tied to the rollout of this quality improvement initiative. Before any implementation begins, this project will undergo comprehensive scrutiny by essential stakeholders at the clinic, encompassing support staff, providers, administrators, and the Montana State University Internal Review Board to ensure total endorsement.

The data amassed during this initiative will be stripped of any identifying markers. As previously stated, the data will merely track the number of patients: 1) those who met the criteria for screening, 2) those who were asked to be screened, 3) how many accepted and declined screening, 4) how many had of those screened had positive screening results, and 5) those with

positive screens that received an appropriate evaluation from the provider. Notably, no data could pinpoint an individual visiting the clinic during the project's duration. Only the DNP student and the clinic representative, a practicing physician at the pediatric clinic, are authorized to access this data using clinic-approved devices. The committee members and site representatives have collaborated to ensure patient safety and confidentiality remain the top priorities throughout the project's lifecycle.

## Conclusion

This project was conceptualized after in-depth discussions with a provider at this urban Montana pediatric clinic. There was a shared recognition of the inadequate attention given to youth mental health in this clinic and across the entire state of Montana. The driving force behind this quality improvement project was the desire to bring about change and better the lives of future generations in Montana. Recognizing that primary care providers are ideally situated to screen, detect, and treat pediatric patients facing mental health challenges like depression, anxiety, and suicidal ideation is pivotal. Implementing these targeted interventions and evaluations is expected to lead to a marked increase in patients screened, diagnosed, and treated. Such measures will alleviate the mental health burden on patients, their families, the community, and the broader healthcare system.

# CHAPTER THREE

# IMPLEMENTATION OF THE PATIENT HEALTH QUESTIONNAIRE-2 & 9 ADOLESCENT MODIFIED [PHQ-2 & 9 A] IN A PEDIATRIC CLINICAL SETTING: A QUALITY IMPROVEMENT PROJECT

## Contribution of Authors and Co-Authors

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## Manuscript Information

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## Section 1: Clinical Problem

Pediatric depression, carrying the risk of suicide, poses significant challenges in primary care on a global scale, with the World Health Organization citing suicide as the fourth leading cause of death for those aged 15 to 29 years (WHO, 2021). In the United States, and particularly in Montana, which has some of the highest rates of pediatric depression and suicide, suicide is the leading cause of death among 10 to 24-year-olds. (Asarnow, 2023; America's Health Rankings, 2021). The American Academy of Pediatrics underscores the importance of timely screening for depression in all children over age 12 (AAP, 2019).

In Montana, where teen suicide and depression diagnoses are alarmingly high, the absence of screening in primary care settings is particularly troubling. To combat this, a comprehensive quality improvement project has been launched to boost screening rates from 0% to 90% by May 2024 using the PHQ-2/9 A tool and structured communication strategies for positive screenings. The electronic health record's "hard stop" feature—a previous enforcement measure—has been removed, resulting in a drop in screenings; the project will deploy alternative strategies such as physical reminders and enhanced training for staff to ensure adequate screening and care continuity.

## Section 2: Review of the Literature

### Section 2.1: The Pediatric Primary Care Setting

Pediatric primary care providers engage with nearly 90% of U.S. youth annually, are pivotal as the initial contact for children with mental health concerns, fostering trust that allows open discussions on depression, anxiety, and suicidal ideation and setting the stage for early

detection and intervention (Honigfeld et al., 2017; Baum et al., 2020; Beck et al., 2022). The continuity of care they provide, including screening during routine visits and coordination with mental health specialists, is essential for a holistic health approach that integrates physical and mental care, enhancing overall life quality and establishing preventive behaviors for better immediate and long-term health outcomes (Beers et al., 2017; Leslie & Chike-Harris, 2018; Mansour et al., 2020; Bose et al., 2021; Parkhurst & Friedland, 2020).

## Section 2.2: Importance of Standardized, Validated, and Reliable Screening Tools

The Patient Health Questionnaire (PHQ) and the Beck Depression Inventory, revered for their reliability and validity, are considered the gold standard in depression screening for both pediatric and adult populations, ensuring consistency and an objective framework within pediatric care practices for patient progress tracking and guiding treatment decisions (Patra & Kumar, 2022; APA, 2023; Beck et al., 2022). The PHQ's self-administered versions, PHQ-2 and PHQ-9, are particularly valued; the former serves as an initial screen, and if scored above a threshold, it leads to the PHQ-9's more extensive evaluation, boasting high sensitivity and specificity rates for adolescent depression. However, the potential for high false positives with the PHQ-9 alone underscores its role as a guiding tool within a broader clinical assessment rather than a standalone diagnostic measure, prompting clinicians to engage in more comprehensive evaluations for managing pediatric depression (Parkhurst & Friedland, 2020).

## Section 2.3: The Healthcare Team and Education

Nearly half of pediatricians feel unequipped to effectively manage depression, citing a lack of training and confidence as significant barriers to pediatric depression screenings

(Mansour et al., 2020). Studies underline the importance of educational and training programs for healthcare teams, which have dramatically boosted screening rates—evidenced by a surge from 1% to 74% in one instance (Beers et al., 2017). A holistic systems approach, incorporating extensive education, ongoing training, and feedback mechanisms, addresses the educational shortfall and demystifies mental health care within well-child exams, thereby empowering providers to more effectively identify and manage pediatric depression and ultimately enhancing patient outcomes (Beck et al., 2022; Mansour et al., 2020).

## Section 3: Conceptual Framework: Plan, Do, Study, Act (PDSA)

The PDSA cycle played a crucial role in addressing how to evaluate depression screening rates for children aged 12 and older at an urban Montana pediatric primary care clinic. This iterative approach enabled the team to assess existing procedures, develop and implement interventions critically, and then rigorously evaluate the effectiveness of the interventions. Completing the cycle, the process was reviewed, allowing the team to make informed adjustments to refine the strategy to improve pediatric depression screening rates further.

## Section 4: Aims/Purpose

This quality improvement project aims to enhance pediatric depression screening rates from 0% to 90% or above by May 2024 by integrating the PHQ-2/9 A screening tool and a standardized hand-off tool for identifying positive screenings. Despite removing a mandatory "hard stop" in the electronic health record, which leads to a decline in screening, alternative measures, including physical reminders, staff training, and education, will be instituted to ensure thorough screening and follow-up care.

# Section 5: Methods

## Section 5.1: Context and Interventions

This quality improvement project, running from January to May 2024, centers around a critical intervention: By January 31, 2024, physical paper-based reminders were placed on exam room computers to prompt staff to screen patients aged 12 and over for depression, utilizing the PHQ-2/9 A tool within the electronic health record. While an automated electronic reminder would have been ideal, current organizational constraints necessitate a manual approach to improve screening rates in the urban pediatric primary care clinic. The PHQ-2/9 A, validated for adolescents, starts with a two-question preliminary screening; scores of three or higher lead to a more comprehensive PHQ-9 A assessment; these tools are detailed in appendices A and B, respectively.

The Montana Suicide Prevention Coordinator, also a Licensed Clinical Social Worker, spearheaded education and training for the providers and support staff at this pediatric primary care clinic. A one-day, two-hour training and educational experience was provided to bolster the staff's knowledge, skills, and understanding of the importance of this project. Additionally, educational posters were placed throughout the clinic and exam rooms to promote an atmosphere conducive to open discussion on mental health. This proactive approach has been shown to facilitate open patient-family dialogues on sensitive topics (van Landschoot et al., 2021). Emphasis was also placed on communication between the support staff and the providers for patients who declined to participate or those who scored abnormally high on the PHQ-2/9 A screening tool.

## Section 5.2: Measures and Analysis

A systematic chart audit and data collection process was initiated to assess the interventions' effectiveness. Starting from February 5th, 2024, patient charts for those 12 years and older were examined to determine if the patient had been appropriately screened for depression with the PHQ-2/9 A tool. This evaluation was conducted daily for all providers until March 1st, 2024, while the clinic was operational. Key metrics collected weekly included the total number of patients eligible for screening, the number approached for screening, the number consenting to be screened, those who declined, those who screened positive, and those who, after a positive screen, received the necessary follow-up treatment. To measure the success of the screening process, percentages were calculated reflecting the proportion of patients who were approached for screening, participated in the screening, and underwent a proper evaluation and treatment after a positive screening outcome. The objective was to ensure that 100% of eligible patients were invited to undergo screening, achieving a participation rate of 90% among those invited and a guarantee that every patient with a positive screening result would receive proper evaluation and treatment.

# Section 6: Results

Introducing physical paper-based reminders, comprehensive education and training for staff and providers, and distributing informational handouts in clinic and exam rooms significantly improved the screening rates. Within the first week post-implementation, 78.8% of eligible patients were screened, with 92.3% choosing to participate; notably, all patients screened positive received the appropriate evaluation and treatment. In the second week, the team experienced a slight decline, with 71% of eligible patients being approached for screening.

However, participation increased to 96.3%, 100% of those with positive results were appropriately managed, and the third week marked the peak of the team's success, hitting 100% across all targeted goals. However, a dip to 85.7% was noted in the fourth week in the proportion of eligible patients approached, maintaining 100% participation and providing suitable evaluation and treatment for positive screens.

Across the implementation period, 143 patients were eligible for screening, 120 were invited to participate, 117 agreed to the screening, and 21 screened positive, each receiving the correct follow-up care. This translates to an 84% approach rate for screening, a 98% participation rate, and a 100% appropriate evaluation and treatment rate for those with positive screening outcomes using the PHQ-2/9 A. These results are further elaborated in Appendix E of this manuscript.

## Section 7: Discussion

The interventions implemented in this quality improvement project—namely, the introduction of a physical paper-based reminder system, comprehensive training for staff and providers, emphasis on enhanced communication, and the distribution of educational materials to patients and their families—proved to be highly effective in elevating the depression screening rates at this pediatric primary care clinic. The project set ambitious targets: ensuring 100% of eligible patients were invited for screening, achieving a 90% participation rate, and guaranteeing that 100% of patients with positive screenings received appropriate follow-up evaluation and treatment.

In the four weeks post-implementation, the team observed substantial progress toward these goals, consistent with what the literature suggested. The rate of patients approached for

screening surged from 0% to 84%, while the participation rate reached 98%, and the rate of patients who received appropriate evaluation and treatment after a positive screening was maintained at 100%. Although the initial target of having 100% of eligible patients approached still needs to be fully met, the significant increase to an 84% approach rate represents a remarkable improvement and a strong foundation for future enhancements in the screening process.

Implementing physical reminders and targeted educational initiatives was instrumental in significantly enhancing the screening rates, indicating that these measures effectively mitigated prior obstacles such as staff forgetfulness or lack of awareness. Consistent with the literature, the educational programs were crucial in bolstering the confidence of staff and providers in initiating and conducting screenings. This improvement was underscored by the data collected during the implementation week, notably after the training and educational interventions were introduced on Thursday. Out of 43 patients eligible for screening during this entire week, screenings were conducted for only 10, all of whom were approached after the new training initiatives were introduced on Thursday. This timing clearly illustrates the substantial impact that well-designed and comprehensive training can have on the success of a quality improvement project, highlighting the direct relationship between thorough staff education and the effectiveness of the screening process.

## Section 7.1: Practical Implications

The enhancement in screening rates observed through this quality improvement project carries profound implications for the early detection and intervention of pediatric depression, offering a promising pathway to improved long-term mental health outcomes for young patients.

The successful early identification of depression allows healthcare providers to initiate timely interventions, crucial for preventing the escalation of mental health issues and for promoting healthier developmental trajectories. Early intervention not only aids in immediate symptom management but also contributes to more favorable long-term prognoses, reducing the likelihood of recurrent depressive episodes and associated comorbidities.

Moreover, the strategies implemented in this project provide a replicable and scalable model for other healthcare facilities aiming to bolster their adherence to pediatric health screening protocols. Physical reminders and comprehensive staff training have supported the hypothesis that these interventions effectively increase screening rates and can be adapted to suit different clinical settings and patient populations. This model underscores the importance of simple yet strategic interventions in transforming routine clinical practices, facilitating a more systematic approach to the early identification of mental health concerns.

By adopting this model, other clinics can improve screening rates and contribute to a broader public health objective of enhancing pediatric mental health care. This initiative serves as a testament to the feasibility and impact of targeted quality improvement efforts, providing a roadmap for healthcare providers seeking to strengthen their preventive care services and advocate for children's mental well-being in their care.

## Section 7.2: Limitations

A notable challenge to this quality improvement program's successful implementation has been the variability of staff involvement due to the inconsistent availability of support staff who work directly with patients. This clinic has a rotation system for support staff, meaning not all staff members engage in direct patient care daily. This rotation impacted the staff’s recall of

the screening criteria, even though physical paper-based reminders were placed in the examination rooms. Consequently, this inconsistency contributed to missed opportunities for screening, especially for patients who had appointments early in the morning. Such lapses highlight the need for a more reliable system and exposure to the new protocols to ensure that all staff members consistently adhere to the screening protocol, regardless of their patient care schedule.

It should also be noted that these results come from an affluent and primarily White patient population at just one clinic. These results cannot necessarily be applied to all clinical sites. However, the interventions chosen for this quality improvement project come from evidence-based literature.

### Section 7.3: Recommendations

Leveraging the success of this quality improvement project aimed at enhancing pediatric depression screening rates, it is recommended to utilize the following strategies for other clinics seeking to improve their adherence to pediatric health screening guidelines:

Incorporate a reminder system: This can be completed using the electronic health record or physical paper-based reminders in all examination rooms. This is an effective prompt for healthcare providers, ensuring that depression screening becomes a routine part of the encounter, particularly vital in a fast-paced clinical environment.

Develop Comprehensive Training: Implement thorough, ongoing educational programs for all team members, focusing on the importance of early depression screening, utilization of tools, and adherence to established screening protocols. Training should empower staff with the knowledge and skills necessary to conduct screening confidently.

Strengthen Communication Channels: Foster a culture prioritizing clear communication regarding mental health screenings. Enhance staff understanding of the critical role of these screenings in early detection and intervention, which can be facilitated through regular meetings, updates, and training sessions.

Tailor the Approach to Fit Local Needs: Adapt the screening model to address the specific demographics and needs of the clinic's patient population. Personalize reminders, screening tools, and educational materials to be culturally sensitive and relevant, ensuring they resonate effectively with patients and their families.

Implement a Continuous Evaluation Process: Establish an ongoing evaluation process to assess the effectiveness of the screening procedures, leveraging data to inform improvements. Regularly review screening rates, patient feedback, and clinical outcomes to identify areas for enhancement and to ensure the program evolves in line with best practices and patient needs.

By adopting these recommendations, healthcare facilities can replicate the positive outcomes observed in this project, leading to improved screening rates, better early detection of pediatric depression, and, ultimately, enhanced health outcomes for young patients. These guidelines aim to elevate the standard of care and inspire a proactive approach to mental health challenges in pediatric populations.

## Section 8: Conclusion

This quality improvement project has demonstrated substantial progress in enhancing pediatric depression screening rates in an urban Montana pediatric primary care setting. By implementing targeted interventions such as physical paper-based reminders, comprehensive educational programs for healthcare providers and staff, an emphasis on enhanced

communication, and education for patients and families, the team witnessed a significant uplift in screening adherence, moving from a baseline of 0% to an impressive 84% approach rate. This initiative not only underscores the critical importance of early detection and intervention in pediatric depression but also showcases a scalable model that can be adapted and replicated in diverse healthcare environments.

The project's outcomes illustrate the profound impact that well-considered, strategic interventions can have on improving healthcare delivery and patient outcomes. The positive screening rate and subsequent follow-up care indicate a move towards more proactive, preventative healthcare practices, with the potential to significantly alter the trajectory of pediatric mental health in the local communities. The success of this model demonstrates that with the right tools, training, and systems in place, healthcare providers can overcome barriers to screening and ensure that at-risk youth receive the timely care they need.

This project is a testament to the power of quality improvement initiatives in transforming healthcare practices, encouraging early intervention in pediatric mental health, and ultimately paving the way for a healthier future for Montana's youth. We advocate for continued focus on such initiatives, fostering an environment where early screening and intervention become a standard, integral part of pediatric care.

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# CHAPTER FOUR

# ADVANCED NURSING ESSENTIALS REFLECTION

## Introduction

The American Association of Colleges of Nursing (2021) organized and distributed ten areas of competence that together demonstrate the complete framework representing nursing practice. In the concluding chapter of my manuscript, I will outline the integration of advanced nursing domains into my coursework and this quality improvement project. I will provide examples of how these essentials enriched my education, illustrate their influence on my leadership in this project, and show how they contributed to my growth as a Doctor of Nursing Practice.

## Domain I: Knowledge for Nursing Practice

Domain I emphasizes the importance of scientific evidence as the cornerstone of nursing and healthcare practices, encompassing leadership, informatics, policy, pharmacology, clinical application, and more. The Mark and Robyn Jones College of Nursing at Montana State University has excelled in weaving this focus throughout its Doctor of Nursing Practice program curriculum. Courses such as Evidence-Based Practice I and II were instrumental in developing students' comprehension of scientific principles and practice. These courses taught students to evaluate information and critically integrate this information into clinical settings. The required quality improvement project exemplifies this process; as students, we identified and tackled a clinical need using evidence-based methodologies derived from skills gathered during our

coursework. As a Doctor of Nursing Practice-prepared clinician, I will carry forward these competencies, ensuring my practice, patient care, and professional interactions are informed by the latest, most reliable evidence to deliver superior healthcare services to my patient population.

## Domain II: Person-Centered Care:

Domain II highlights the importance of person-centered care, focusing on how we, as Doctor of Nursing Practice prepared providers, can develop, communicate, and assess the care we provide to meet the highest quality standards. Montana State University has consistently emphasized person-centered care throughout its program. Built into the curriculum courses such as Evidence-Based Practice I and II, Design, and Delivery of Healthcare Systems, Program Planning and Evaluation, Ethics and Policy, and Vulnerability and Healthcare in Diverse Communities have equipped students with the tools and knowledge necessary to deliver the most current, culturally aware, and patient-focused care. For instance, the course on Vulnerability and Healthcare in Diverse Communities introduced the ABCDE assessment model, teaching us to understand and address the unique situations of individuals or groups of people, thereby personalizing care strategies to individual-specific needs.

Patient-centered care is paramount for a future healthcare provider such as me. Possessing the knowledge and skills to deliver high-quality care is an invaluable asset and one of the most important takeaways from my education.

## Domain V: Safety and Quality

Domain V, focusing on safety and quality, is designed to enhance systems for delivering effective, person-centered care across all healthcare sectors. The Doctor of Nursing Practice

program at Montana State University incorporated this domain into various courses. For example, Evidence-Based Practice courses enabled students to appraise information and apply the most current guidelines to ensure safe, high-quality care. The Ethics and Policy course laid the groundwork for providers' crucial responsibility in safeguarding their patients and themselves.

These are just a few instances of how safety and quality have been integrated into our curriculum. Specifically, in our Program Planning & Evaluation, Outcomes, and Quality Improvement course, we were assigned to develop a theoretical quality improvement project, substantiate it with evidence, and devise an implementation strategy. We proposed a plan to align with the new guidelines for colorectal cancer screening, recognizing the need to inform patients about the updated recommended screening age. By identifying a gap in patient awareness, our project aimed to enhance the quality and safety of patient care, thereby underscoring the significance of Domain V.

## Domain VIII: Information and Healthcare Technologies

Domain VIII underscores the critical role of information systems and technology in enhancing and revolutionizing patient care. Acknowledging the dynamic nature of healthcare, Montana State University has developed targeted coursework to equip future Doctors of Nursing Practice students and graduates with the necessary skills for this transformation. The Healthcare Systems and Designs course instructs students on assessing and improving healthcare systems at various organizational levels. These competencies proved invaluable in our quality improvement projects. We analyzed system deficiencies and oversights and formulated improvements for systemic enhancement through tools such as a fishbone diagram, first introduced in our previous

courses. Understanding the integration of solutions within existing systems requires a deep knowledge of information systems and technologies beyond mere observation.

This knowledge prepares me to drive meaningful change within my healthcare organization. This might involve direct improvements to the electronic health record system, optimizing workflow processes, or proactively evaluating current systems to identify opportunities for enhancement, all of which aim to refine the experience for patients and providers alike.

## Domain IX: Professionalism and Professional Identity Formation

Domain IX emphasizes fostering a professional identity, ethical accountability, and collaboration throughout a healthcare career. This domain is not tied to a single course or task but is reflected in the entirety of the program at Montana State University. The university excels in equipping students to uphold professional standards and deliver exceptional patient care without compromise. The College of Nursing at Montana State University has intricately interwoven professionalism and exemplary patient care into the core of its curriculum, shaping every student who enrolls. As I advance in my nurse practitioner career, I will reflect gratefully on my time at Montana State University, appreciating a program that prioritizes and instills these essential qualities.

## Domain X: Personal, Professional, and Leadership Development

Domain X profoundly resonates with me, mirroring the sentiments of Domain IX in that its essence is captured not through a single course or assignment but through a collection of experiences within the program. It is an essential reminder of how focusing on a goal can

sometimes lead to self-neglect or overlooking others. The faculty at the College of Nursing have been pivotal in shaping my development as a person, a professional, and a nursing leader. The curriculum across various courses has afforded me numerous opportunities to reflect on my growth, helping me to value the journey as much as the destination. This introspection and acquired skill to appreciate the broader view fuels my desire for continuous learning and active participation in my professional community. We are encouraged to engage in critical discussions, collaborate with peers, maintain open patient dialogues, attend local and regional conferences, and prepare and disseminate our projects through poster presentations at the University level. Equipped with these abilities, Montana State University's Doctor of Nursing Practice program graduates are poised to deliver exceptional care within their communities and to their patients.

## Conclusion

During my three years in the Doctor of Nursing Practice (DNP) program at Montana State University, I am assured that the instruction, courses, and coursework have thoroughly met and even surpassed the ten domains laid out by the American Association of Colleges of Nursing (2021). The curriculum is deliberately structured to comply with AACN's requirements and deepen students' understanding of these domains' profound impact on their personal and professional lives. As I transition from student to practitioner, the ten domains will remain integral to my career, guiding my professional conduct and development.

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# APPENDICES

# APPENDIX A

## ADOLESCENT MODIFIED PATIENT HEALTH QUESTIONNAIRE-2 [PHQ-2 A]

## The Patient Health Questionnaire-2 (PHQ-2)

Patient Name _____ Date of Visit _____

| Over the past 2 weeks, how often have you been bothered by any of the following problems? | Not At all | Several Days | More Than Half the Days | Nearly Every Day |
|---|---|---|---|---|
| 1. Little interest or pleasure in doing things | 0 | 1 | 2 | 3 |
| 2. Feeling down, depressed or hopeless | 0 | 1 | 2 | 3 |

# APPENDIX B

## ADOLESCENT MODIFIED PATIENT HEALTH QUESTIONNAIRE-9 [PHQ-9 A]

# Severity Measure for Depression—Child Age 11–17*

*PHQ-9 modified for Adolescents (PHQ-A)—Adapted

**Name:**_____ **Age:** _____ **Sex: Male** ❑ **Female** ❑ **Date:**_____

**Instructions:** How often have you been bothered by each of the following symptoms during the past **7 days**? For each symptom put an "**X**" in the box beneath the answer that best describes how you have been feeling.

| | | | | | | Clinician Use |
|---|---|---|---|---|---|---|
| | | | | | | Item score |
| | | (0) Not at all | (1) Several days | (2) More than half the days | (3) Nearly every day | |
| 1. | Feeling down, depressed, irritable, or hopeless? | | | | | |
| 2. | Little interest or pleasure in doing things? | | | | | |
| 3. | Trouble falling asleep, staying asleep, or sleeping too much? | | | | | |
| 4. | Poor appetite, weight loss, or overeating? | | | | | |
| 5. | Feeling tired, or having little energy? | | | | | |
| 6. | Feeling bad about yourself—or feeling that you are a failure, or that you have let yourself or your family down? | | | | | |
| 7. | Trouble concentrating on things like school work, reading, or watching TV? | | | | | |
| 8. | Moving or speaking so slowly that other people could have noticed?<br><br>Or the opposite—being so fidgety or restless that you were moving around a lot more than usual? | | | | | |
| 9. | Thoughts that you would be better off dead, or of hurting yourself in some way? | | | | | |
| | | | | | **Total/Partial Raw Score:** | |
| | | | | | **Prorated Total Raw Score: (if 1-2 items left unanswered)** | |

Modified from the PHQ-A (J. Johnson, 2002) for research and evaluation purposes

**Scoring and Interpretation**

Each item on the measure is rated on a 4-point scale (0=Not at all; 1=Several days; 2=More than half the days; and 3=Nearly every day). The total score can range from 0 to 27, with higher scores indicating greater severity of depression. The clinician is asked to review the score of each item on the measure during the clinical interview and indicate the raw score in the section provided for "Clinician Use." The raw scores on the 9 items should be summed to obtain a total raw score and should be interpreted using the table below:

**Interpretation Table of Total Raw Score**

| Total Raw Score | Severity of depressive disorder or episode |
|---|---|
| 0-4 | None |
| 5-9 | Mild |
| 10-14 | Moderate |
| 15-19 | Moderately severe |
| 20-27 | Severe |

**Note:** If 3 or more items are left unanswered, the total raw score on the measure should not be used. Therefore, the child should be encouraged to complete all of the items on the measure. If 1 or 2 items are left unanswered, you are asked to calculate a prorated score. The prorated score is calculated by summing the scores of items that were answered to get a partial raw score. Multiply the partial raw score by the total number of items on the PHQ-9 modified for Adolescents (PHQ-A)—Modified (i.e., 9) and divide the value by the number of items that were actually answered (i.e., 7 or 8). The formula to prorate the partial raw score to Total Raw Score is:

$$\frac{\text{(Raw sum x 9)}}{\text{Number of items that were actually answered}}$$

If the result is a fraction, round to the nearest whole number.

# APPENDIX C

## DATA COLLECTION TOOL

| | # of patients who meet criteria for screening | # of patients who were asked to be screened | # of patients who accepted screening | # of patients who declined screening (reason) | # of patients screened who had a positive result | # of patients with positive screen who received appropriate treatment |
|---|---|---|---|---|---|---|
| Week of 1/29/24 | 25 | 25 | 25 | 25 | 25 | 25 |
| Week of 2/5/24 | 25 | 25 | 25 | 25 | 25 | 25 |
| Week of 2/12/24 | 25 | 25 | 25 | 25 | 25 | 25 |
| Week of 2/19/24 | 25 | 25 | 25 | 25 | 25 | 25 |
| Week of 2/26/24 | 25 | 25 | 25 | 25 | 25 | 25 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 |

| Goal 3 | Week 0 | Week 1 | Week 2 | Week 3 | Week 4 | Total | Target |
|---|---|---|---|---|---|---|---|
| % of pts asked | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100% | 100% |
| % of pts participated | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100% | 90% |

| Goal 6 | Week 0 | Week 1 | Week 2 | Week 3 | Week 4 | Actual | Target |
|---|---|---|---|---|---|---|---|
| % of pts eval & treated | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100% |

**All data included is for example only.**

# APPENDIX D

## SMART GOALS

**SMART Goal #1 (Short-term): Implementation of physical paper-based reminders on all exam room computers by January 31st, 2024 to remind supportive staff to assess all patients who are 12 years and older for their annual depression screening using the PHQ-2/9 A tool integrated within the electronic health record.**

As previously discussed, the prior "hard stop" feature was very effective. However, due to organizational constraints, this feature is no longer available. Utilizing the other methods as a way to remind the supportive staff to assess the patient's need for a depression screening using the PHQ-2/9 A.

**Description of strategies to be utilized to accomplish goal including any needed resources.**

Creation and dissemination of the most effective physical paper-based reminder system.

The clinical director will be required to help facilitate this change as it pertains to her clinical setting.

| **Data to be collected** | **Method of collection and who is responsible** | **Planned data analysis** |
|---|---|---|
| N/A | DNP-S, Site Representative, and Clinical Director will be responsible for this goal. | N/A |

**SMART Goal #2 (Mid-term): 100% of support staff (RNs and MAs) will complete the education/training provided by the state's Suicide Prevention Coordinator before January 31, 2024.**

Education and training is pivotal for the understanding and ability to ask difficult questions to the patients and their families.

During discussions with staff, having difficult conversations and navigating this topic, was found to be a barrier for the supporting staff.

**Description of strategies to be utilized to accomplish goal including any needed resources.**

Karl Rosston, the state Suicide Prevention Coordinator has agreed to provide education and training to bolster the staff's confidence in having these conversations with patients and their families.

The ability to record the in-person education/training or the virtual training for those that are unable to attend.

| **Data to be collected** | **Method of collection and who is responsible** | **Planned data analysis** |
|---|---|---|
| List of staff that attends the training or those that watched the recording | Sign-in sheet for live attendance and recorded option<br><br>Will be collected by DNP-S and Site Representative | Evaluation of the number of staff members that participated in the training |

**SMART Goal #3 (Mid-term): 100% of appropriate patients will be asked to participate in screening with 90% agreeing and completing the screening by April 30, 2024.**

The physical paper-based reminder system should initiate the supportive staff to evaluate the patients need for screening. However, not all patients and families will agree to participate.

**Description of strategies to be utilized to accomplish goal including any needed resources.**

The education and training by the state Suicide Prevention Coordinator will be pivotal for the supporting staffs understanding of why these questions are important and must be asked.

| **Data to be collected** | **Method of collection and who is responsible** | **Planned data analysis** |
|---|---|---|
| The total number of patients that qualified for screening<br><br>The total number of patients that were asked to be screened | Manual chart audit by the DNP-S and the Site Representative | Evaluation of data will result in percentage of people screened and those that declined in relation to the total number of qualified patients. |

| | | |
|---|---|---|
| The total number of patients that declined screening | | |
| | | |
| **SMART Goal #4 (Mid-term): Create and place informational posters, pamphlets, and other literature within the exam rooms by January 31, 2024.**<br><br>Informational posters, pamphlets, and other literature normalize the conversation for the patient and their families to increase confidence in having these discussions (van Landschoot et al., 2021). | | |
| **Description of strategies to be utilized to accomplish goal including any needed resources.**<br><br>Project Semi-Colon provides educational literature that may be used.<br><br>Karl Rosston provides useful tools, educational pieces, and infographics applicable to this goal and project. | | |
| **Data to be collected**<br><br>N/A | **Method of collection and who is responsible**<br><br>DNP-S and Site Representative will be responsible for creation and distribution of educational literature for exam rooms. | **Planned data analysis**<br><br>N/A |
| | | |
| **SMART Goal #5 (Mid-term): Implement a standardized hand-off report from support staff to the provider for patients who receive a positive screening by January 31, 2024.**<br><br>Though the current electronic health record does have an alert system for patients who have positive screening results, many concerns were discussed regarding the acknowledgment of these alerts.<br><br>Providers and supportive staff alike recommend a standardized hand-off report to help eliminate outside factors that might contribute to a missed positive screening. | | |

| | | |
|---|---|---|
| **Description of strategies to be utilized to accomplish goal including any needed resources.**<br><br>Situation, Background, Assessment, and Recommendation/Request (SBAR) hand-off format will be utilized | | |
| **Data to be collected**<br><br>The number of handoff reports given to providers from the supporting staff | **Method of collection and who is responsible**<br><br>Visual observation by the DNP-S and reporting by the providers | **Planned data analysis**<br><br>Percentage of reports given in relation to the total number of cases for the day. |
| | | |
| **SMART Goal #6 (Long-term): 100% of positively identified patients evaluated will receive an appropriate treatment or plan by the end of the project.**<br><br>Though there will be some patients who decline to be screened, every patient that is screened and has positive results should be evaluated for appropriate planning and/or treatment. | | |
| **Description of strategies to be utilized to accomplish goal including any needed resources.**<br><br>Appropriate screening and hand-off reports will be utilized to help the provider positively identify patients who need further evaluation for potential treatment. | | |
| **Data to be collected**<br><br>The number of patients who had a positive screen<br><br>The number of those patients who were appropriately evaluated for their positive screening | **Method of collection and who is responsible**<br><br>Manual chart audit by the DNP-S and the Site Representative | **Planned data analysis**<br><br>Percentage of positively identified patients who received appropriate evaluation |

# APPENDIX E

## DATA COLLECTION: RESULTS

| | # of patients who meet criteria for screening | # of patients who were asked to be screened | # of patients who accepted screening | # of patients who declined screening (reason) | # of patients screened who had a positive result | # of patients with positive screen who received appropriate treatment |
|---|---|---|---|---|---|---|
| Week of 1/29/24 | 43 | 10 | 10 | 0 | 2 | 2 |
| Week of 2/5/24 | 33 | 26 | 24 | 2 | 5 | 5 |
| Week of 2/12/24 | 38 | 27 | 26 | 1 | 7 | 7 |
| Week of 2/19/24 | 37 | 37 | 37 | 0 | 6 | 6 |
| Week of 2/26/24 | 35 | 30 | 30 | 0 | 3 | 3 |
| Total | 143 | 120 | 117 | 3 | 21 | 21 |

| Goal 3 | Week 0 | Week 1 | Week 2 | Week 3 | Week 4 | Total | Target |
|---|---|---|---|---|---|---|---|
| % of pts asked | 23.26% | 78.79% | 71.05% | 100.00% | 85.71% | 84% | 100% |
| % of pts participated | 100.00% | 92.31% | 96.30% | 100.00% | 100.00% | 98% | 90% |

| Goal 6 | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Actual | Target |
|---|---|---|---|---|---|---|---|
| % of pts eval & treated | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100% |

Week 1: These are not included in the totals for this project. Final implementation occurred the Thursday of this week (1/29/24-2/2/24), which was the education and training. The patients who were screened this week were screened Thursday and Friday following the training, indicating the impact that the education/training has on screening rates compared to the reminder system and conversation with staff alone.