

INCREASING POSTPARTUM DEPRESSION SCREENING
IN THE POSTPARTUM PERIOD

by
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of the requirements for the degree

of
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in
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GLOSSARY

AAP:	American Academy of Pediatrics
ACOG:	American College of Obstetricians and Gynecologists
AI/AN:	American Indian/Alaskan Native
AMA:	American Medical Association
CDC:	Centers for Disease Control and Prevention
DNP:	Doctor of Nursing Practice
DSM-5:	Diagnostic and Statistical Manual of Mental Disorders Fifth Edition
EHR:	Electronic Health Record
EPDS:	Edinburgh Postnatal Depression Scale
HMHB:	Healthy Mothers, Healthy Babies
HPA:	Hypothalamic Pituitary Adrenal
IRB:	Institutional Review Board
MDD:	Major Depression Disorder
MMAT:	Mixed Methods Appraisal Tool
MWP:	Maternal Wellness Packet
NCAQ:	National Committee for Quality Assurance
NICU:	Neonatal Intensive Care Unit
PDSA:	Plan-Do-Study-Act
PHQ-9:	Patient Health Questionnaire-9
PPD:	Postpartum Depression
QI:	Quality Improvement
USPSTF:	United States Preventive Service Task Force
WCC:	Well Child Check

ABSTRACT

Postpartum depression (PPD) affects approximately 15% to 20% of mothers and is the most common obstetric complication and leading cause of maternal mortality, which can be avoided with identification and intervention. The Plan-Do-Study-Act cycles were used throughout a 4-week pre- and post-intervention in a primary practice that provides postpartum care, whose PPD screenings were inconsistent and without a standardized screening tool. Descriptive statistics were used to evaluate post-intervention changes. By providing education to all clinicians, adding the Edinburgh Postnatal Depression Scale (EPDS) into standard provider practice, developing an algorithm for PPD screening and mental health referral, and developing patient education through a maternal wellness packet, the project aimed to enhance PPD screening up to 100% by project completion. When postpartum patients screened positive, the goal was that 100% of these patients were offered a referral to mental health and a maternal wellness packet. The goal of 100% staff education was achieved. Although the limited 4-week timeline allowed for only two postpartum patients, the 100% PPD screening goal was met and both were offered a referral and the maternal wellness packet, of which only one accepted services. Consistent universal PPD screening with standardized screening tools, such as the EPDS and PHQ-9, and process provided by the project's workflow process, increased overall PPD screening rates allowing for early identification and intervention.

CHAPTER ONE

INCREASING POSTPARTUM DEPRESSION SCREENING
IN THE POSTPARTUM PERIOD: LITERATURE REVIEWBackground and Introduction

Over 80% of pregnancy-related deaths in the United States (US) are avoidable with 53% of those deaths associated with postpartum depression (PPD) and occurring after the woman is discharged from the hospital, which is deemed avoidable (Gonzalez, 2022). Furthermore, it is estimated that depression in the US annually costs \$30-\$50 billion due to direct medical costs and loss of productivity with women carrying the burden of this illness, as they have an increased prevalence compared to males (Gjerdingen & Yawn, 2007). Postpartum depression, which is interchangeably referred to as perinatal depression or perinatal mood and anxiety disorders (PMADs), is the most common obstetric complication affecting 15% to 20% of mothers (Rafferty, 2019). The term PMAD includes both prenatal and postpartum depression, obsessive-compulsive disorder, bipolar I and II, posttraumatic stress disorder, and psychosis. The American Psychiatric Association (APA) describes PPD as a significant condition that has moderate to severe intensity, usually starting about 4 weeks to 1 year after delivery (Sriraman et al., 2017). Clinical manifestations include feelings of considerable sadness, apathy, fear of harming oneself or the newborn, extreme worry about the baby, doubt, guilt, and helplessness with possible anxiety where the mother may experience changes in energy, sleep, excessive crying, loss of interest in hobbies and usual activity, changes in concentration, memory, and appetite (Louden, 2015; Rafferty, 2018). In severe cases, there may be recurrent thoughts of

death including suicidal ideation. New mothers often experience many of these symptoms due in varying degrees to the changes in hormones, lifestyle, and the new responsibilities of motherhood.

Complications

The complications for the mother can be as serious as death with over one-half of all maternal deaths occurring after delivery (ACOG, 2018). According to the National Committee for Quality Assurance (NCQA), untreated postpartum depression can have long-lasting implications for mother and infant that include the hindrance of caregiver abilities, maternal-infant bonding, and attachment that can lead to cognitive and language delays, and developmental disorders for the infant, which can last into adolescence (Clevesity, 2018).

The American Academy of Pediatrics (AAP) reports that children of mothers affected with PPD/PMADs are at increased risk for delayed psychological, cognitive, neurological, and motor development and at higher risk of avoidance and distressed behavior (Gjerdingen & Yawn, 2007). There is a three-fold greater risk for infants of depressed mothers to develop emotional problems and a 10-fold higher risk for experiencing poor maternal-child relationships and maternal-infant attachment where infants make fewer positive facial expressions and vocalize less (Sriraman et al., 2017). The abnormal maternal-infant interactions create a vicious cycle that may increase the incidence of chronic mental and emotional health affecting family functioning.

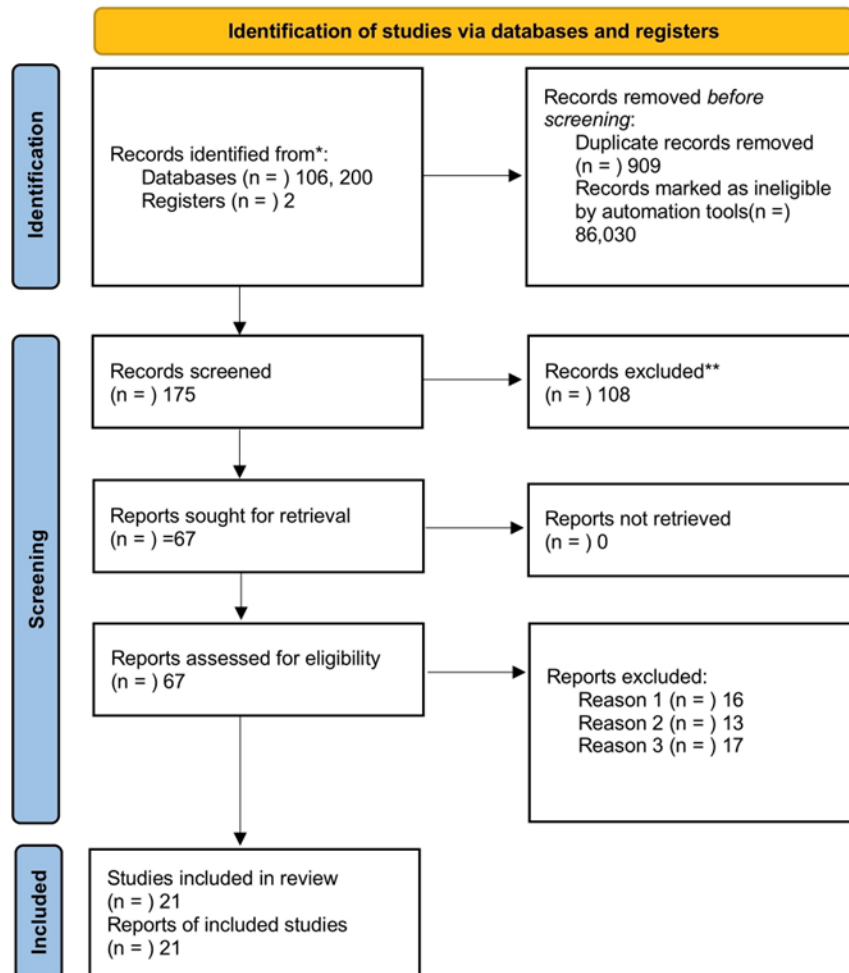
The majority of current PPD research and literature is focused on middle-class Caucasian women leaving a research gap for American Indian/Alaskan Native (AI/AN) women. Several sources indicate AI/AN have rates of PPD ranging from 14% to 29.7%, which is 10% to 20%

higher than their Caucasian counterparts (Heck, 2021). The contributing factors to this disparity may relate to increases in higher prevalence of compounding factors such as domestic violence, lower socioeconomic status, lower educational levels, lack of access to healthcare due to the rural environment AI/AN females reside in, and health insurance constraints (Heck, 2021; Ness, 2017).

Methods

The literature review was performed in Google Scholar and PubMed by using the terms “postpartum depression,” “mass screenings,” “postpartum depression in rural settings,” “Edinburgh screening,” and “standardization of postpartum screening.” The search criteria included a review on postpartum depression with the use of a systematic review whenever possible. Studies published in Western countries and in English resulted in 175 articles. Research studying women still or not yet pregnant, fathers, and teen mothers were excluded. Reference lists from retrieved studies were reviewed and added to the final sample size of 21 articles. See Figure 1.

Figure 1. PRISMA Tool Indicating Search Methods



Results

The review of literature on postpartum depression supports screening in various settings including prenatal visits, prior to discharge after delivery, the postpartum clinic visit, and during well child checks (WCC) (Louden, 2015; Rafferty, 2018). Literature supports the use of postpartum screening tools such as the Edinburgh Postnatal Depression Scale (EPDS), further emphasizing the education of nurses or providers to administer the screening (Rafferty, 2018;

Blackmoore, 2022; Levis, 2020; Clevesy, 2019). Education can be obtained post-degree per healthcare organization policy or purchased through various governing bodies (Louden, 2016). Although the EPDS is specific to PPD, the Patient Health Questionnaire-9 (PHQ-9) is also a widely used and accepted screening tool for depression (ACOG, 2018; HMHB, 2020). Early recognition will allow for the appropriate intervention and treatment of affected individuals, thus enhancing maternal and infant outcomes.

Discussion

Due to the seriousness of the potential complications of PPD, early identification and intervention by primary care providers is essential for these women.

Identification

Studies have shown that standardized screening can lead to increased behavioral health referrals and treatment, lowering depression scores and improving outcomes (McPhail, 2021). However, the rate of screening has been shown to be less than 50%. Rates of PPD diagnosis and treatment are low, primarily due to the lack of identification. Further follow-up for evaluation and treatment for women that test positive is approximately 23% (Levis, 2020). Both American College of Obstetricians and Gynecologists (ACOG) and United States Preventive Services Task Force (USPSTF) recommend screening for mood and emotional wellbeing in all pregnant and postpartum women, initially during pregnancy, prior to delivery, and at least once in the postpartum period, typically at the 2- to 6-week postpartum visit in the clinic (Clevesity, 2018).

PPD Screening Tools

The literature has shown standard PPD screening is an effective means of clinician recognition of PPD. Of the 21 articles reviewed, 12 discussed screening in the postpartum period as a standard of care. Of these studies, nine were high quality as determined by the Mixed Methods Appraisal Tool (MMAT). Nine articles found that screening with the EPDS and PHQ-9, and three using the PHQ-9 only, was associated with early recognition of PPD, thus allowing for earlier counseling and pharmacological interventions.

The most sensitive PPD screening tool is the EPDS, as the PHQ-9 is not specific to PPD (Levis, 2020). Although the PHQ-9 is highly specific to MDD, many organizations, such as the AAP (Heck, 2021; Rafferty, 2018) and state-supported Healthy Mothers, Healthy Babies: The Montana Coalition (HMHB, 2022), consider both the EPDS and the PHQ-9 adequate means of depression recognition. Trained healthcare professionals should provide and evaluate PPD screening. The Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN) advises education for nurses regarding PPD and how to appropriately screen for it due to such high rates of PPD (Kendig et al., 2017). The literature would support not only screening for PPD in all pregnant and postpartum women up to 1 year postpartum, but also a referral to behavioral health services as well as a maternal wellness packet with local resources available for those that screen positive for PPD (HMHB, 2020; ACOG, 2018; Blackmoore, 2022).

The PHQ-9 incorporates the Diagnostic and Statistical Manual of Mental Health (DSM-IV) depression criteria, which are widely used by providers and supported by ACOG and state-supported organizations such as Healthy Mothers, Healthy Babies: The Montana Coalition (HMHB) (ACOG, 2018; HMHB, 2020; Blackmoore, 2020). The EPDS can be self-administered

and is a 10-item questionnaire that is a free, reliable, and validated method of detecting symptoms of PPD (Clevesity, 2018). The PHQ-9 is free, available in English and 30 other languages, with scores greater than 10 having a sensitivity of 88% and a specificity of 88% for Major Depressive Disorder (MDD) (APA, 2020).

Both the EPDS and the PHQ-9 depression screening can be self-administered, but require further assessment and action by trained healthcare professionals. A positive screening result means the red flag questions answered “yes” or a score of 10 or greater on the EPDS (Sriramen et al., 2017). Examples of red flag questions are: “The thought of harming myself has occurred to me” in the EPDS, and “thoughts that you would be better off dead,” or “thoughts of hurting yourself in some way” in the PHQ-9 (APA, 2020; Levis, 2020). A positive screen for the PHQ-9 is a score greater than 10 (Sriraman et al., 2017). The provider will use a clinical decision tree to recognize a positive screening for further evaluation of PPD symptoms (Bhat, 2017; Blackmoore, 2022; Healthy Mothers, Healthy Babies, 2020).

PPD in Montana

The Montana Healthcare Foundation supports the Meadowlark Initiative for prenatal care and behavioral health to improve maternal and infant outcomes. In order to keep families together, the Meadowlark Initiative’s goal is to bring community resources, healthcare providers, and patients together to address mental health concerns of the mother who may have prenatal substance abuse. In the state of Montana, there are 10,000 deliveries per year of which Meadowlark providers screen more than 6,000 for substance use, depression, and anxiety with the ability to offer immediate treatment and support (Montana Health Foundations, 2022). The literature supports the need for not only PPD screening, but a referral to behavioral/mental health

services, and support given by the provider, community, and social support systems (Blackmoore, 2022; Montana Health Foundations, 2022; HMHB, 2020; Ness, 2017). These evidence-based recommendations are provided in Montana through the Meadowlark Initiative. This program's goal is to assist the mothers and providers with resources for maternal and infant success. The Meadowlark Initiative is an example of available local resources to providers and patients, but is not accessed if PPD is not first identified.

Patient Education and Increased Awareness

To comprehensively address PPD, there is a need for empowerment of women to self-recognize and report PPD symptoms so they can seek appropriate treatments through shared decision-making with the provider. When given the opportunity to engage in her healthcare, the woman is empowered and shown a reduction in depressive symptoms up to 17% (Baranov, 2020). The maternal wellness packet is specifically designed to provide a clear plan of what resources, as recommended by HMHB (2022) are available to the individual woman. The maternal wellness packet may be individualized by the provider and patient to meet the patient's specific needs. This resource has information about the woman's healthcare provider, available social support, and local community and behavioral health resources. Due to the seriousness of PPD, suicide risk must be assessed and resources, both national and local, should be given to every postpartum woman (HMHB, 2022).

Risk Factors

Postpartum depression does not have a singular cause or risk factor. Risk factors include: violence and abuse, obesity, sleep disruption or poor sleep, lack of social support, lower income

levels, maternal age, immigration status, history of depression, Vitamin D deficiency, and pregnancy and postnatal complications (Zhau & Zhang, 2020). Examples of pregnancy and postnatal complications include a diagnosis of gestational diabetes, cesarean section, multiple births, preterm and low birth-weight infants that may or may not require neonatal intensive care unit (NICU) admission, postpartum anemia, and perception of a negative birth experience (Bhat, 2017; Zhau & Zhang, 2020). Conversely, there may be protective factors that include the promotion of maternal-infant bonding, skin-to-skin care, breastfeeding, healthy dietary patterns, and increased social supports (Soreg, 2019; Bhat, 2017). Since PPD is a common obstetric finding, the woman and her support system should be made aware of the risks, signs, and symptoms, and empowered through the MWP to reach out if symptoms occur.

The causes of PPD are poorly understood, but the common contributor is the sudden change in hormone levels after delivery, as several studies have found an association between hormone levels and PPD (Schiller, 2015). Other potential PPD causes include the interactions of the varied hormones with thyroid, immune and hypothalamic-pituitary-adrenal (HPA) axis function, as well as lactogenic hormones causing some women to be more sensitive than others (Schiller, 2014).

Barriers

The single appreciable barrier to PPD treatment is lack of identification and recognition of PPD symptoms (Loudon, 2015). There are three venues to capture PPD screening: at the hospital post-delivery, at the woman's postpartum office visit, and at their infant's well child check in the primary care clinic. There is a lack of information regarding a woman's screening

opportunity if PPD screening is done in the hospital post-delivery prior to hospital discharge. Unfortunately, approximately 40% of women do not attend their postpartum office visits, reducing the ability to capture possible PPD and attend to the woman's healthcare needs (ACOG, 2018). In contrast, approximately 70% to 80% of women will attend their infant's well child checks (McPhail, 2015). Although postpartum women are cared for in the primary care setting, this may be a limitation of early identification if the women do not attend postpartum visits.

Previous research on PPD has identified three types of barriers: patient-centered, provider-centered, and system-centered (Hansotte et al., 2017). Patient-centered barriers include transportation, cost of the office visit, lack of health insurance, the social stigma attached to PPD, lack of access to healthcare, and time constraints. Provider-centered barriers include the lack of time to conduct screening, insufficient training/knowledge of PPD screening, and competing demands for other assessments, documentation, and care needs. AWHONN recommends specific training for nurses in regard to screening and recognition of PPD symptoms (Blackmoore, 2022). Education is to be provided by specific healthcare organizations or can be purchased through various governing bodies. Systems barriers include the lack of objective and proactive monitoring of patients, lack of follow-up on missed visits, lack of standardization of screening, and separation of primary care and mental health (Gjerdingen & Yawn, 2007).

The screening for PPD is an essential part of identification of PPD. Clinicians may face barriers to implementation of screening. The changes the DNP project proposes will challenge clinicians to be consistent in obtaining universal PPD screening. Such training should be available for all healthcare professionals to perform the PPD screening. Furthermore, the use of the EPDS and the PHQ-9, as reliable and validated tools, should be done universally. In addition,

there is a need for a consistent referral process and time allowed the provider to conduct the screening, whether self-administered and reviewed or in-person screening.

Unfortunately, the literature was unclear how to implement or increase the referral process; just that a referral to behavioral health is indicated. Healthy Mothers, Healthy Babies suggests a 3-day follow-up with women that are referred to behavioral health (Healthy Mothers, Healthy Babies, 2020). The American Medical Association (AMA) recommends that depression screening should be documented in the patient's chart. Positive screenings need to have a follow-up referral for further evaluation to a practitioner that is qualified to diagnose and treat with appropriate behavioral health interventions that may include pharmacological interventions, therapy, depression management programs, support groups, and be followed by a case manager (CMS, 2020).

The reduction of stigma attached to mental health can be from both the healthcare provider and the patient. Mothers can be reluctant to report symptoms of PPD due to fear of the stigma attached to mental health and feelings of failure (Sorg, 2019). Although addressing the barrier of social stigma attached to PPD is important, the project may not be able to achieve this complex change through interventions. But the project will increase awareness of PPD and standardized and universal screening, which promotes equity for all patients. The hope is, by increasing PDD screening at the postpartum visit and the WCC, both patients and providers will become more comfortable with the conversation of PPD.

Implications for Practice

PPD is a serious complication that is underdiagnosed and, thus, untreated. Universal routine screening (screening of all postpartum patients) is an easy and cost-effective way to identify women suffering from PPD. The EPDS is a reliable and validated screening tool specific to PPD that can be self-administered. The PHQ-9 is a reliable and validated screening tool for MDD that can be self-administered, although not specific to PPD. Provider education and the addition of the EPDS into workflow, particularly in the electronic health record (EHR), have been shown to increase PPD screening rates. All healthcare professionals that provide healthcare to women in the prenatal and postpartum periods, as well as to their children, play a role in implementing the PPD screening process. This includes front desk clerks, nurses, medical assistants, obstetricians, primary care, and pediatric providers. A clinical decision algorithm for positive PPD screening should be available for further clinician evaluation and behavioral health referral as needed. Mothers that are requiring PPD intervention should be supplied by the provider with a maternal wellness packet and available local resources. This will assist in the empowerment of the woman to engage in her healthcare journey.

Limitations

The majority of the literature available is based on Caucasian women in an urban setting. Lack of available research regarding PPD and a sensitive screening tool in the AI/AN patient populations was found. There was also a lack of research specific to rural areas and maternal healthcare deserts as there is a lack of available healthcare professionals within a geographically accessible area to the project site. In addition, this literature review looked at the screening for

PPD and barriers to screening; not treatment and interventions for PPD, which are outside the scope of the project aims.

Conclusion

Due to the seriousness of the complications of PPD, healthcare providers need to consistently recognize the signs and symptoms of PPD. This can be easily obtained through universal, standardized screening in the primary care setting. The EPDS and PHQ-9 are supported in literature as validated and effective tools for detecting potential PPD. It is necessary to have the systems in place to allow the potential for universal screening, as well as a further behavioral health referral process when the appropriate interventions and treatments are needed. Providers with adequate knowledge and training will be better equipped to not only perform the screening, but to recognize when further evaluation and intervention is needed. With better identification and recognition of PPD, there will be reduction in negative outcomes, such as a poor maternal-infant attachment and bonding, as well as long-term decrease in cognitive and language delays, or even maternal-infant death.

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CHAPTER TWO

INCREASING POSTPARTUM DEPRESSION SCREENING
IN THE POSTPARTUM PERIOD: PROJECT PROPOSALIntroduction and Problem

Postpartum depression (PPD) in Montana may be underrecognized due to variable screening patterns, limited mental health resources, and lack of access to healthcare (Coombs et al., 2021). It is difficult to find exact numbers of PPD for the state of Montana. Governing bodies, American College of Obstetricians and Gynecologists (ACOG) and American Academy of Pediatrics (AAP), encourage providers to provide PPD screening. Yet, there is no central repository at the local, state, or national levels for the volume of screening, use of mental health referrals, or other intervention to manage PPD, where numbers are gathered from billing codes and health organizations' reporting (AAP, 2017; ACOG, 2018). To incentivize providers in PPD assessment, Montana Medicaid pays for providers to screen all newborn caregivers for PPD, mandating the provider to use an evidence-based screening tool during the postpartum visits and the well child check (WCC) visit at months 1, 2, 4, 6, and 9 (Rafferty, 2018). In this aspect, the state of Montana has made strides to support PPD screening. However, at the doctor of nursing practice (DNP) project site, the problems are the lack of PPD screening, provider variability and hesitancy in screening processes, and limited behavioral health resources, leaving portions of the population unrecognized. Therefore, infant and mothers do not receive services essential to their wellbeing.

There is consensus in the literature that universal PPD screening is to be done on every mother (Clevesy, 2019; Rafferty, 2018). The timing of the screening is not agreed upon in the literature. ACOG and AAP propose that the screening should be performed in the prenatal period as an initial screen, prior to delivery, and at least once during the postpartum period (ACOG, 2018; Rafferty, 2018). This can be at the postpartum visit or the well child check (WCC) visit.

The risk factors for PPD include lower socioeconomic levels, lack of access to healthcare, and lack of social support. Geographically, rural areas are at higher risk due to the lack of healthcare resources available and lack of access to healthcare, which includes long distances to healthcare sites and lack of transportation (Bhat, 2017). This particular area is at greater risk due to the rural location and lack of resources available to the population, which has been shown by the American Pediatric Academy to increase the risk of harm to mother and infant (Kerker, 2016; McPhail, 2021; Mgonja, 2017). Due to the higher-risk postpartum population served at this site, it is imperative that the PPD screening be consistently completed. Moreover, it is essential to empower mothers to recognize and acknowledge PPD in themselves, collaborate with healthcare providers, and review available PPD resources for mothers, as there are numerous barriers to mental health resources at the DNP project site.

Microassessment

The site for this DNP project is located on an American Indian Reservation in rural Montana that provides healthcare to numerous ethnicities. The predominant are Caucasian and American Indian; however, the site does not regularly collect this data. This particular site serves

as a family practice healthcare clinic caring for underserved populations. On average, the DNP site location provides maternal care to approximately 150 women per year.

Strength

The stakeholder group within the site is unique in being able to provide prenatal, labor and delivery, postnatal, and well child care, thus offering a broad spectrum of opportunities to engage women in their healthcare and provide screening for mental health, particularly PPD. The project stakeholders requested one location for project implementation among the larger healthcare organization. This clinic consists of two family-practice physicians, each with a nurse, who provide women's health services, both of whom have verbalized willingness to participate in the DNP project. In addition, there are two front desk staff workers and a nurse case manager in the clinic.

The Meadowlark Initiative System of Care, which the site participates in, has validated that the organization meets the recommended PPD screenings in the postpartum period. This is funded by the Montana Healthcare Foundation, which provides collaborative health to mothers and families by integrating prenatal and behavioral health services specifically for mothers affected by substance abuse and mental illness to improve maternal and neonatal outcomes (Meadowlark Initiative, 2022). Meadowlark outlines a system of care that collaborates healthcare with providers, patient case managers, behavioral health, and community resources. The state of Montana has approximately 10,000 births per year with over 6,000 PPD screenings completed. PPD screening is supported at the site as they already participate in prenatal and post-delivery screens. However, they are deficient in postpartum screenings with only 12% of mothers currently being screened for PPD per the site representative. The causes of the lack of screening

cited by the stakeholders are the lack of a consistent screening method, lack of a designated staff member responsible for performing the screening, and lack of behavioral health referral options or a process when PPD screening is found positive.

Weakness

There are limited psychological resources available in the community. According to Montana Psychology Today (2022), there are eight private-practice therapists in the community with only one specializing in perinatal and postpartum women. Unfortunately, this particular therapist is not accepting new patients at this time, which is a trend with most of the therapists in the area (Psychology Today, 2022). The project site has an in-house mental health clinician who, due to credentialing, is unable to see any patient unless solely insured by Medicaid (Harbin, 2022). Additional options available to patients include Telehealth and Tribal Health Behavioral, but only for eligible tribal members. Telehealth services have become more accessible after the COVID-19 pandemic, which is available to all clinic patients through a provider referral.

The lack of mental health resources is worsened by their clinic's location in a rural area where there is no public transportation system and healthcare facilities are an hour or longer drive. The recent rising fuel costs can exacerbate financial resources and limit follow-up with behavioral health referrals. According to the Montana State Pregnancy Risk and Monitoring Systems (PRAMS) data, 32.1% of the state's maternal population lives in rural areas, 40.4% are below the poverty level, and 26.4% had only a high school education level (PRAMS, 2020). The United States Census Bureau (2022) identifies the county where the project site is located as having a 24.2% American Indian/Alaskan native (AI/AN) population, but it is unclear what percentage this particular site services as they do not routinely collect demographic data. This

county could be considered a maternal health desert as there are barriers to the limited maternal health services available to women of childbearing years. Even though many services are available at the site, there are not enough healthcare providers, specifically mental healthcare providers, available for in-person follow-up. These microsystem factors support the importance of consistent PPD screening and resources in the primary care setting that are close to home and serve both women and children of various ethnicities. Providing the maternal wellness packet (MWP), which includes online and phone call resources, helps to mitigate the travel, geographic isolation, and limited in-person behavioral health services.

Rationale

Based on the literature recommendations, this project intervention is to develop a process to support clinician screening of every postpartum woman using either the EPDS or the PHQ-9 (ACOG, 2018; Bhat, 2017; Clevesy, 2019). Both screening tools are free, widely used, easy to read, and validated for the clinical setting in the perinatal periods (Healthy Mothers, Healthy Babies, 2022). These tools are currently in use and preferred by the providers, so the project will focus on process improvement regarding delivery of PPD screening, staff responsibilities, and standardizing nursing and provider interventions. When PPD is suspected, the site stakeholders will refer positive screens to mental health providers, if available. When behavioral health resources are unavailable, the use of a MWP developed by the DNP student will provide Telehealth resources to the mother. This patient-education tool is recommended by the HMHB (2022) initiative. Currently, the family practice doctors themselves are managing all recognized

PPD. Additionally, the site does not have a MWP and relies on provider and nurse follow-up and management of patient, which is not standardized.

The DNP project plans to use the Plan-Do-Study-Act (PDSA) framework due to the quick implementation and adaptability necessary within the 4-week project time constraints. The PDSA is an easy method to test changes by working through the four steps: Plan, Do, Study, and Act (Plan-Do-Study-Act [PDSA] Directions and Examples, n.d.). The four steps break down the thought process of the task into smaller steps and evaluate the outcome. Once the outcome has been evaluated, the stakeholders can decide what went well and what needs to be improved upon (Plan-Do-Study-Act [PDSA] Directions and Examples, n.d.). The next step is to put that improvement into action, study the results, and continue to improve as needed. This simple framework will allow the project to evolve and quickly improve interventions to support PPD screening in the family practice setting. The six-person stakeholder group at the site will allow the DNP student to hold a productive weekly collaboration with the stakeholders comprised of two providers, two nurses, one front desk staff, and one case manager. Frequent feedback and action on a productive weekly basis will enhance and achieve project aims.

Specific Aims

The DNP project aims to enhance PPD screening and improve provider knowledge of the importance of universal PPD screening while also providing resources for empowering the mothers to recognize PPD themselves. Through the DNP student's development of PPD screening and management process flow, standardization of care will be achieved. The necessary inputs include stakeholder support, which has been promised, educational time to clinic staff, and

copies of the chosen screening tools and the maternal wellness packets. Activities and outcomes for the project are detailed in a logic model (see Appendix A). The ultimate goal of the project is to create a sustainable maternal care program that empowers women to engage in their healthcare, and to have an adequate referral process in place by increasing the recognition of PPD.

The project goal is an increase in nurse/provider compliance with PPD screening by 50% by the project's third week by adding the EPDS into the postpartum workflow in the electronic health record (EHR), since prior to the project only the PHQ-9 was available, and providing initial staff education including a step-by-step workflow process. By the completion of the project, the goal is to have at least 100% of postpartum patients screened for PPD with 100% of positive patients being offered a referral to behavioral health and an MWP.

Context

PPD is a common and serious obstetric complication. Maternal healthcare deserts like this project site may serve more underrecognized women, meaning fewer treated PPD than their urban counterparts. This project aims to increase the recognition of PPD by increasing the PPD screening rates and empowering women to participate in their mental health. The site location is one family practice clinic within a larger organization that provides care to women and children.

Intervention and Implementation

The DNP student will provide initial and ongoing education on the importance of PPD screening, the staff workflow and algorithm for mental health referral, a maternal wellness

packet, and available local resources. Both the PHQ-9 and the EPDS are currently in the organization's EHR with only the PHQ-9 routinely used; thus, the nurse will have to manually add the EPDS into the patient's chart. The front desk staff will register the patient and flag for PPD screening, for the nurse, with notation on the daily schedule. The nurse will screen all postpartum patients for PPD, alerting the physician in a verbal handoff for positive screenings, and will document the screening results in the EHR. The doctor will review all PPD screenings with the patient and document specific interventions for the patient. For patients that have a positive PPD screen, each will be referred to behavioral health and will receive an MWP with available local resources and other PPD interventions.

Special attention needs to be placed on those mothers that answer "yes" to red flag items on the PPD screenings as these indicate severe symptoms and necessitate immediate interventions. Such questions include the patient marking "yes" to thoughts of self-harm or harm to her baby. The current site protocol is to transfer to the emergency department for immediate evaluation by a mental health provider if high-risk red flag screening is assessed. The national suicide prevention number is 988, which is included with other educational resources in the maternal wellness packet. HMHB recommends the following: (a) not to leave the patient alone or alone with the infant; (b) it may be necessary to obtain childcare for the infant and to make a Child Protective Services (CPS) report; (c) create a safety plan with patient, and (d) document (Healthy Mothers, Healthy Babies, 2022). For those scored over 10, the provider will need to provide patient education on treatment options, signs and symptoms, create a safety plan, and provide an MWP and local resources. For each of these high-risk categories, there needs to be follow-up with the patient within 3 days, assistance in coordinating care, and support services

such as home visiting programs and family support services, along with the appropriate clinician documentation (CMS, 2020; Healthy Mothers, Healthy Babies, 2022).

The “Study” portion is detailed under Evaluation. If crisis questions on the Algorithm for PPD screening per HMHB Montana Coalition (see Figure 6 in Chapter Three) are answered “yes,” immediate referral to behavioral health via the Emergency Department is warranted for urgent intervention. These referrals are tracked, as indicated below, with the long-term goal of 100% of positive screens referred to behavioral health and given an MWP. The goal is 100% of postpartum mothers will be screened by 3 months. To improve PPD screening rates, this project will adopt the standardized screening tools—the EPDS and PHQ-9—which are already available in the EHR, thus requiring no additional cost to incorporate. The process flow (or algorithm) below aids in engaging staff and providing a visual of the proposed PPD process while clearly delineating each staff member’s responsibilities in PPD screening and management. The weekly meetings with the DNP student will not only remind all staff members of the new process and provide follow-up education on the importance and need for this work, but also elicit feedback from the stakeholders on how the process can be continually improved.

Figure 2: PPD Workflow

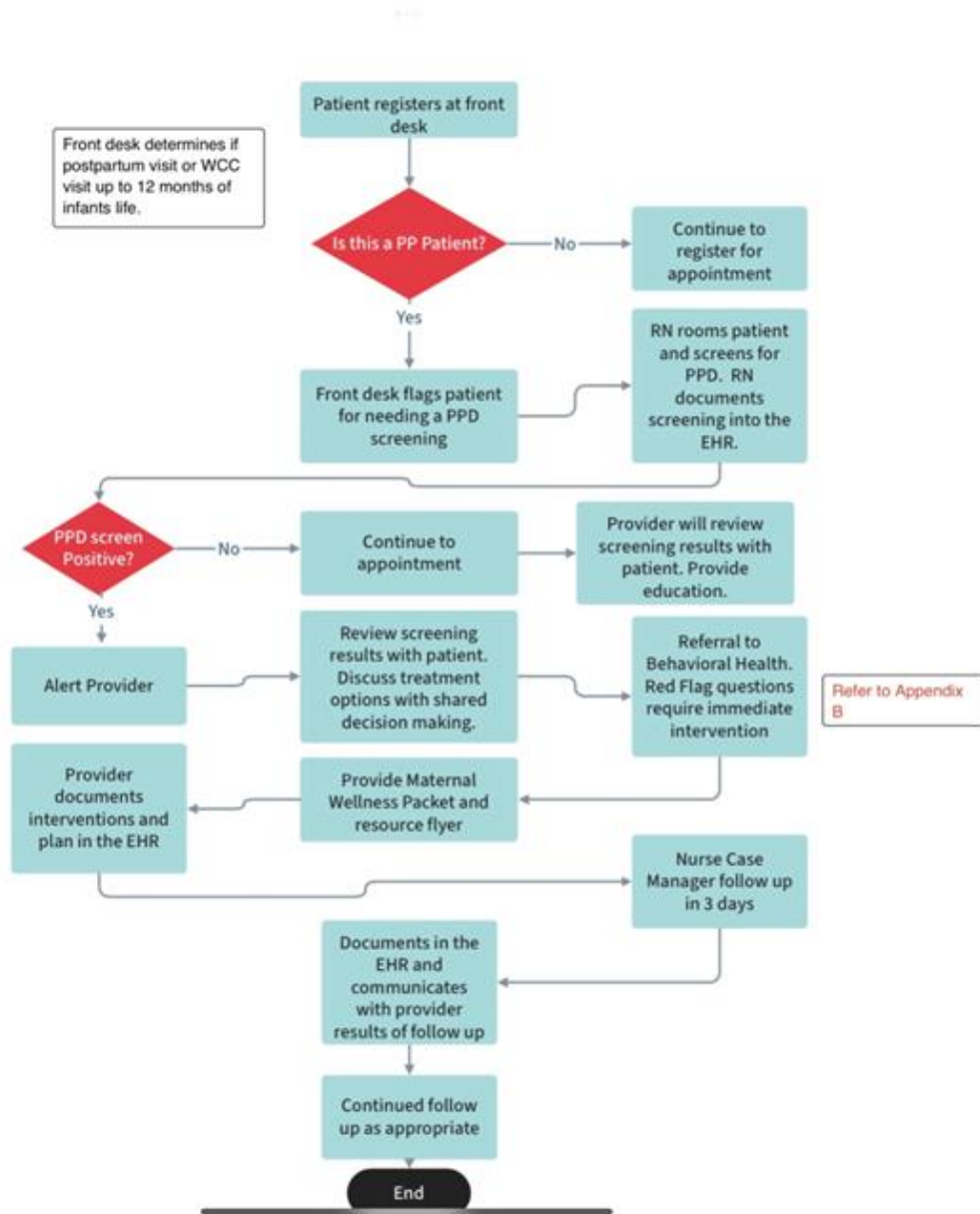


Table 1: Timeline: Project Length 4 Weeks

Plan/Do	Study/Act	Conclusion Project Defense
August 29, 2022- December 31, 2022	January 19, 2023- February 16, 2023	February 17, 2023 to March 27, 2023

The evidence supports the making of a referral to behavioral health providers for positive PPD (ACOG, 2018). However, with the lack of referral resources available, the provider will need to be more diligent in screening and treating postpartum women. As part of the project planning phase, the DNP student will first collaborate with stakeholders at the site including the family practice doctors, two nurses, front desk staff, and nurse case manager. The small group will assist in all PDSA stages, including planning and data collection during the study phase, and allow for frequent feedback necessary for action and related change. During the planning, the DNP student will provide education for the staff at the clinic on the importance of PPD screening by December 21, 2022. Educational content is listed below as it follows the HMHB Montana recommended topics.

Table 2. Components of Postpartum Depression Screening Education

◦ Components of Postpartum Depression Screening Education	
◦ Definition of PPD: ◦ Depression suffered by a mother following childbirth	Signs and Symptoms: -Feeling of considerable sadness -apathy -fear of harming self or the newborn -extreme worry about the baby -doubt, guilt, and helplessness -possible anxiety -the mother may experience changes in energy, sleep, excessive crying, loss of interest in hobbies and usual activities, changes in concentration, memory, and appetite

Table 2. Components of Postpartum Depression Screening Education Continued

◦ Components of Postpartum Depression Screening Education	
◦ Risk Factors: ◦ -Violence and abuse ◦ -Obesity ◦ -Sleep disruption or poor sleep ◦ -Lack of social support ◦ -Lower socioeconomic level ◦ -Maternal age ◦ -Immigration status ◦ -History of depression ◦ -Vitamin D deficiency ◦ -Pregnancy and postnatal complication ◦ - diagnosis of gestational diabetes ◦ - cesarean section ◦ - multiple births ◦ - postpartum anemia ◦ - perception of a negative birth experience ◦ -Adverse newborn condition ◦ - newborn admission to NICU ◦ - preterm or low birth weight infants ◦ - adverse newborn conditions ◦ - fetal demise or neonatal death	Protective Factors: -Skin-to-skin care after birth -Breastfeeding -Healthy dietary patterns -Increased social support -Adequate sleep -Physical activity -Self care -Social support systems
Importance of Screening: -PDD is one of the most common obstetric complications affecting 15-20% of women. -23% of maternal deaths related to mental health complications to include suicide -Decreased maternal-newborn bonding -Neglect of infant -Development and Cognitive delays for infant -Infanticide	Screening Tools: -EPDS -specific to PPD -validated -easy to use -PHQ-9 -easy to use -validated

Table 2. Components of Postpartum Depression Screening Education Continued

◦ Components of Postpartum Depression Screening Education	
◦ Barriers for Providers: ◦ -40% of women do not attend PPV ◦ -Lack of knowledge/training on PPD screening ◦ -Lack of or unaware of resources available ◦ -Lack of time to conduct screening ◦ -Competing demands ◦ -Personal bias	Barriers for Patients: -Lack of access to healthcare -Transportation -Cost of the office visit -Lack of health insurance -Lack of health care providers available -Social stigma attached to PPD -Cultural or community values -Time constraints
◦ Education: ◦ -Each Staff members role in the PPD screening and Behavioral Health referral Process ◦ -Process of providing Maternal Wellness Packet ◦ -Documentation ◦ -Follow-up processes per Nurse Case Manager	

The DNP student will develop a maternal wellness packet (MWP), based on HMHB resources utilized throughout Montana, to be implemented by January 6, 2023. The “Do” portion begins with the implementation of the workflow process (or algorithm), use of the chosen PPD screening tools, and the packet on maternal wellness, which includes education for the new parents, a list of local resources available, and crisis numbers. A copy of the maternal wellness packet and resource flyer can be found in Appendices B and C.

The proposed expenses for this project are largely the materials needed to bring the MWPs since the screening tools are currently in the EHR. Although the screening tools are in the EHR, one of the providers likes to give the patient the ability to answer the questions in private

as that provider feels it evokes more honest answers. There are approximately 150 births per year for the organization, and two of the providers are included in the project. Thus, it is estimated that 30 copies of the maternal wellness packet will need to be printed. The hours of the DNP student used towards completion of this project will be a savings for the organization. Table 3 describes budget itemization.

Table 3. Budget Itemization

Item needed	Estimated cost
Print EPDS/PHQ-9 and laminate it- 4 copies	\$7.87
Maternal Wellness Packet: 30 copies	\$28.97
Labor: hours DNP student spent (savings to organization). 135 hours	\$4,725

Limitations

There is little literature regarding PPD screening and treatment of AI/AN patient populations with no current screening tool having been validated for AI/AN populations. There are many barriers to access to healthcare for AI/NA women. In addition to the barriers noted above, such as transportation, socioeconomic, and access to a provider, there are additional barriers unique to the indigenous population (Heck, 2021). A member of the Aaniiih (White Clay) Tribe and a descendant of the Chippewa Cree and Blackfeet Tribes describes the historical trauma of colonization and forced appropriation of indigenous people that creates a sense of mistrust in the healthcare system (A. Stiffarm, MPH, personal communication, October 13, 2022). Further research is needed to gain accurate and actionable data on PPD screening and interventions for AI/AN populations.

The integration of PPD screening into the EHR workflow offers the advantage of a reminder to nursing staff and ease of data collection. However, it may present a challenge to the busy clinical schedules, as it is a challenge for many family practice doctors to complete all required documentation while still addressing the primary concern of the patient. This time constraint could create some hesitancy from both nursing staff and the family practice doctors. Providing education on the importance of early recognition and, thus, treatment of PPD may ease the nursing staff and family practice doctors' hesitancy in universal screening. In addition, there is the ability to add to the patient portal where the patient can complete information prior to their appointment, and it is automatically updated into the patient chart. However, this option is currently unavailable at the site, though the site representative reports that it is being considered and could aid in long-term project sustainability if initiated in the future.

Prior to project implementation, this particular site had no formal PPD education in place for clinic staff and providers, leaving staff with a feeling of insecurity in their ability to provide adequate postpartum follow-ups. In addition, there is a lack of referral to behavioral health services and behavioral health providers available to the site. Systems barriers include the lack of objective and proactive monitoring of patients, lack of follow-up on missed visits, lack of standardization of screening, and separation of primary care and mental health (Gjerdingen & Yawn, 2007). The site recognizes that there is deficiency in follow-up with missed visits and screening for PPD in the postpartum period. The other barriers include the lack of behavioral health providers and referral system available due to the rural location.

Evaluation

Data will be collected weekly by the DNP student from the Data Collection Tally sheet that the nurses will complete (see Table 4). All data will be documented in aggregated number form by each nurse who has agreed to use the data collection sheet. The data collected will not include any patient identifiers, maintaining patient confidentiality and protecting patient healthcare information. This project will have obtained an Institutional Review Board (IRB) approval through Montana State University. Because the project site is on an American Indian Reservation, an IRB approval will also be obtained through the local tribe, and project results will be reported at the completion of the project presentation. The data collected will only be the number of patients seen versus the number who received the PPD screening, either at the postpartum visit or at the WCC visit, and those receiving the MWP and behavioral health referrals in tally form. The DNP student will analyze the data weekly via run charts, and will provide feedback on the progress of the project with the stakeholders on areas of improvement or if a change will be needed. This discussion will take place via face-to-face discussions weekly. Weekly DNP student and stakeholder meetings have been scheduled on Monday morning for 10 minutes before the workday. The DNP project did set a long-term outcome of increase of referral and distribution of MWPs, but, due to time constraints, this will not be measured during implementation.

Table 4. Data Collection Tally Sheet

	Monday	Tuesday	Wednesday	Thursday	Friday
Postpartum Appointments					
Patient no shows					
PPD screening complete at PPV					
Screening at WCC					
Referral to Behavioral Health					
Those received Maternal Wellness Packet					
Those needing emergency services					

Table 5. Smart Goals

SMART Goal #1 - 50% of postpartum patients will be screened using the EPDS or PHQ-9 in 3 weeks.
Description of strategies to be utilized to accomplish goal including any needed resources. ◦ The DNP student and clinic stakeholders will: ◦ Agree to implement the EPDS and PHQ-9 as the standardized postpartum screening tools at the first postpartum follow-up appointment. IT department will have the EPDS integrated into patient chart. ◦ Determine how and by who the EPDS and PHQ-9 screenings will be documented. ◦ Develop process flow to identify each stakeholders' role.

Table 5. Smart Goals Continued

Data to be collected	Method of Collection and who is responsible	Planned data analysis
Number of postpartum patients vs the number of patients screened with the EPDS or PHQ-9	Daily tally will be completed by nursing staff. DNP student will collect tally sheet weekly.	The DNP student will collect the daily tally sheets weekly. The DNP student will have a weekly run chart to identify the number of postpartum patients/ total of patients screened with the EPDS and PHQ-9.
SMART Goal #2 - 100% of patients screened positive for PPD will be offered a maternal wellness packet and referral to behavioral health by 6 weeks.		
Description of strategies to be utilized to accomplish goal including any needed resources.		
◦ The DNP student and clinic stakeholders will: ◦ Agree to implement the EPDS and PHQ-9 as the standardized postpartum screening tools at the first postpartum follow-up appointment ◦ Develop a maternal wellness packet by January 6, 2023, for the process of offering maternal wellness packets when positive EPDS and PHQ-9 screenings are found. ◦ Determine how positive EPDS and PHQ-9 screenings will be documented to assure maternal wellness packets are offered. ◦ Determine the process for referrals to behavioral health.		
Data to be collected	Method of Collection and who is responsible	Planned data analysis
Number of postpartum patients who screen higher than 10 via EPDS or PHQ-9 Number of patients scoring positive for PPD will be offered maternal health packet. Number of patients scoring positive for PPD provided with behavioral health referral.	Each nurse (one for each doctor) will keep a daily tally of postpartum visits, those that were screened and those that were offered a maternal wellness packet. The tally will be kept in a log for data collection purposes.	The DNP student will collect the daily tally's weekly. The DNP student will have a weekly run chart to identify the number of patients that screened higher than 10 on the EPDS or PHQ-9/ total of patients offered the maternal wellness packet.

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CHAPTER THREE

INCREASING POSTPARTUM DEPRESSION SCREENING
IN THE POSTPARTUM PERIODIntroduction

Over 80% of pregnancy-related deaths in the United States (US) are avoidable, with 53% of those deaths associated with postpartum depression (PPD) (Gonzalez, 2022). According to the Centers for Disease Control and Prevention (CDC), the maternal mortality rate in the US is 32.9 deaths per 100,000 live births in 2021 compared to 23.8 in 2020 and 20.1 in 2019 (Hoyert, 2023). PPD is the most common and underrecognized obstetric complication affecting 15% to 20% of all mothers, but can be managed with proactive screening (Rafferty, 2019). In severe cases, there may be recurrent thoughts of death including suicidal ideation. Due to the seriousness of the potential complications of PPD, it is essential for primary care providers to identify and intervene early. Studies have shown that standardized screening can lead to increased behavioral health referrals and treatment, thus lowering depression scores and improving maternal outcomes (McPhail, 2021).

The doctor of nursing practice (DNP) project site is located in rural Montana on an American Indian Reservation that provides healthcare to numerous ethnicities. PPD in Montana may be underrecognized due to inconsistent screening, limited behavioral health resources, and lack of a designated staff member responsible for performing the screening related to lack of healthcare staff knowledge, awareness, and comfort with PPD (Montana Health Foundations, 2022). Prior to project planning, the DNP project site had been deficient in postpartum

screenings within the previous year, with only 12% of mothers screened for PPD at the maternal or well child visit.

Review of Literature

PPD Screening

Organizations, such as the AAP (Rafferty, 2018) and the Montana Coalition of Healthy Mothers, Healthy Babies (HMHB, 2020), consider both the Edinburgh Postnatal Depression Scale (EPDS) and the Patient Health Questionnaire-9 (PHQ-9) appropriate tools for PPD recognition. The rate of PPD screening has been shown to be less than 50% nationwide in both the inpatient and outpatient settings (McPhail, 2021). Rates of PPD diagnosis and treatment are low, primarily due to the lack of healthcare staff identification related to various barriers to include short staffing, and the lack of knowledge and comfort with PPD. This is an issue at the DNP project site. When women are screened and found positive for PPD, only 23% seek evaluation and treatment (Levis, 2020). Both American College of Obstetricians and Gynecologists (ACOG) and United States Preventive Services Task Force (USPSTF) recommend screening for mood and emotional wellbeing in all pregnant and postpartum women, initially during pregnancy, prior to delivery, at least once in the postpartum period, typically at the 2- to 6-week postpartum visit in the clinic, which may be done at the first well child check (WCC) up to 1 year of age (Kerker et al., 2016). Studies have shown that standardized screening can lead to increased behavioral health referrals and treatment, lowering depression scores, and improving outcomes by enhancing the bond between mother and newborn and overall health (Clevesy et al., 2019). Improved outcomes of PPD management include decreasing maternal

deaths related to PPD, while also preventing delayed cognitive and language development, insecure attachment, and behavioral problems of the child (Rafferty, 2018).

Behavioral Health Referrals and Patient Education

Universal PPD screening allows providers to identify women at risk for PPD and offer behavioral health referral (Blackmoore, 2022). The maternal wellness packet (MWP) is specifically designed to provide a clear plan of what resources, as recommended by HMHB (2022), are available to the individual woman. The maternal wellness packet may be individualized by the provider and mother to meet her specific needs, as well as enhance the mother's depression awareness and self-efficacy. The MWP contains information about the mother's healthcare provider, available social support, local community, and behavioral health resources.

Screening Tools

The literature supports the need for not only PPD screening but also a referral to behavioral health services, and maternal support by the provider, community, and social support systems (Montana Health Foundations, 2022; HMHB, 2020; Ness, 2017; Blackmoore, 2022). The most sensitive PPD screening tool is the EPDS (Levis et al., 2020). Many organizations, such as the AAP (Heck, 2021; Rafferty, 2018) and state-supported Healthy Mothers, Healthy Babies: The Montana Coalition (HMHB, 2022), consider both the EPDS and the PHQ-9 appropriate means of PPD recognition. When a positive screening occurs, a provider can use a clinical decision tree to determine further depth of additional PPD symptom evaluation for

appropriate interventions and behavioral health referral (Bhat, 2017; Blackmoore, 2022; Healthy Mothers, Healthy Babies, 2020).

Figure 3. Patient Health Questionnaire-9 (PHQ-9)

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)				
Over the <u>last 2 weeks</u> , how often have you been bothered by any of the following problems? (Use "✓" to indicate your answer)	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
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

FOR OFFICE CODING 0 + + +
=Total Score:

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

Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
☐	☐	☐	☐

Figure 4. Edinburgh Postnatal Depression Scale (EPDS)

Edinburgh Postnatal Depression Scale¹ (EPDS)

Name: _____ Address: _____

Your Date of Birth: _____

Baby's Date of Birth: _____ Phone: _____

As you are pregnant or have recently had a baby, we would like to know how you are feeling. Please check the answer that comes closest to how you have felt **IN THE PAST 7 DAYS**, not just how you feel today.

Here is an example, already completed.

I have felt happy:

☐ Yes, all the time

☒ Yes, most of the time This would mean: "I have felt happy most of the time" during the past week.

☐ No, not very often Please complete the other questions in the same way.

☐ No, not at all

In the past 7 days:

1. I have been able to laugh and see the funny side of things ☐ As much as I always could ☐ Not quite so much now ☐ Definitely not so much now ☐ Not at all 2. I have looked forward with enjoyment to things ☐ As much as I ever did ☐ Rather less than I used to ☐ Definitely less than I used to ☐ Hardly at all *3. I have blamed myself unnecessarily when things went wrong ☐ Yes, most of the time ☐ Yes, some of the time ☐ Not very often ☐ No, never 4. I have been anxious or worried for no good reason ☐ No, not at all ☐ Hardly ever ☐ Yes, sometimes ☐ Yes, very often *5. I have felt scared or panicky for no very good reason ☐ Yes, quite a lot ☐ Yes, sometimes ☐ No, not much ☐ No, not at all	*6. Things have been getting on top of me ☐ Yes, most of the time I haven't been able to cope at all ☐ Yes, sometimes I haven't been coping as well as usual ☐ No, most of the time I have coped quite well ☐ No, I have been coping as well as ever *7. I have been so unhappy that I have had difficulty sleeping ☐ Yes, most of the time ☐ Yes, sometimes ☐ Not very often ☐ No, not at all *8. I have felt sad or miserable ☐ Yes, most of the time ☐ Yes, quite often ☐ Not very often ☐ No, not at all *9. I have been so unhappy that I have been crying ☐ Yes, most of the time ☐ Yes, quite often ☐ Only occasionally ☐ No, never *10. The thought of harming myself has occurred to me ☐ Yes, quite often ☐ Sometimes ☐ Hardly ever ☐ Never
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Administered/Reviewed by _____ Date _____

¹Source: Cox, J.L., Holden, J.M., and Sagovsky, R. 1987. Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry* 150:782-786.

²Source: K. L. Wisner, B. L. Parry, C. M. Plonk, Postpartum Depression N Engl J Med vol. 347, No 3, July 18, 2002, 194-199

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Methodology

Project Participants

Participants consisted of two family-practice physicians, two nurses, and one office support staff in a primary care practice that provides care to postpartum women and their infants during their WCC. Project planning began September to December, 2022. During the planning phase, two issues raised in the current process were inconsistent PPD screening practice and no responsible person identified for collecting and inputting PPD screening dates. Through stakeholder discussion, it was agreed the PPD screening was to be done by the provider at either the postpartum visit or the first WCC, by the provider using either the EPDS or PHQ-9, which had previously not been a standardized process. Implementation occurred for 4 weeks from January 19, 2023, through February 19, 2023.

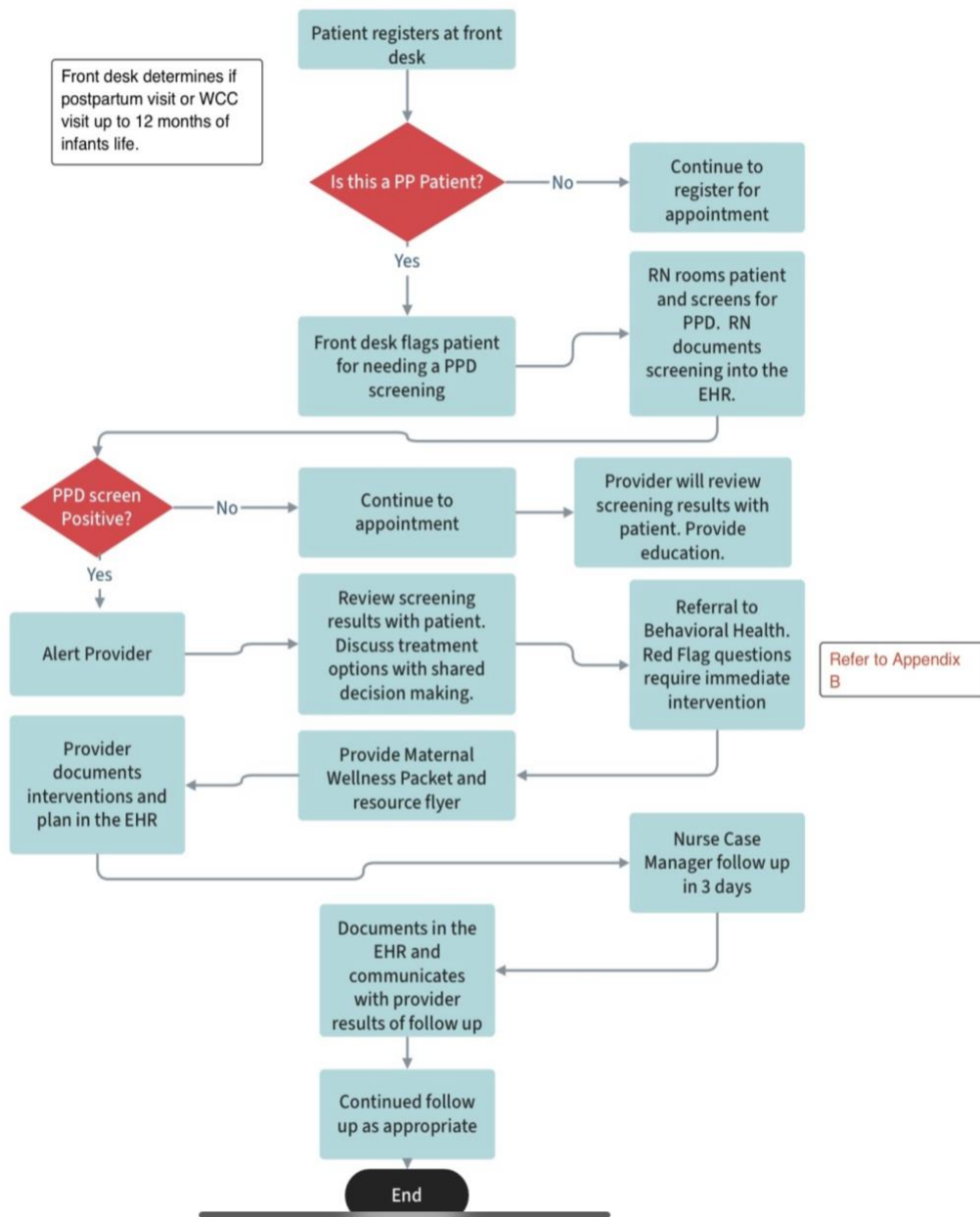
Provider and Staff Training

The DNP project aimed to increase PPD screening and to improve provider knowledge of the importance of universal PPD screening at the postpartum visit or the first WCC. The educational session provided in the planning phrase included the severity of PPD and risks to mother and infant, the importance of early identification and consistent screening of PPD for appropriate intervention to include referral to behavioral health through provided referral algorithm, patient education and provided local resources, as well as the workflow process developed by the DNP student. For accurate PPD identification staff is to utilize either the EPDS or the PHQ-9 as a screening tool.

Workflow Process Change

The project goal was an increase in nurse/provider compliance with PPD screening by adding the EPDS into the postpartum workflow and the electronic health record (EHR) since, prior to project implementation, only the PHQ-9 was available and not used consistently by both providers. In the project planning phase, a step-by-step workflow process was devised. Prior workflow process had no person responsible for identifying which postpartum woman needed PPD screening, nor which staff member was responsible for entering PPD screening results into patients' charts.

Figure 5. Workflow



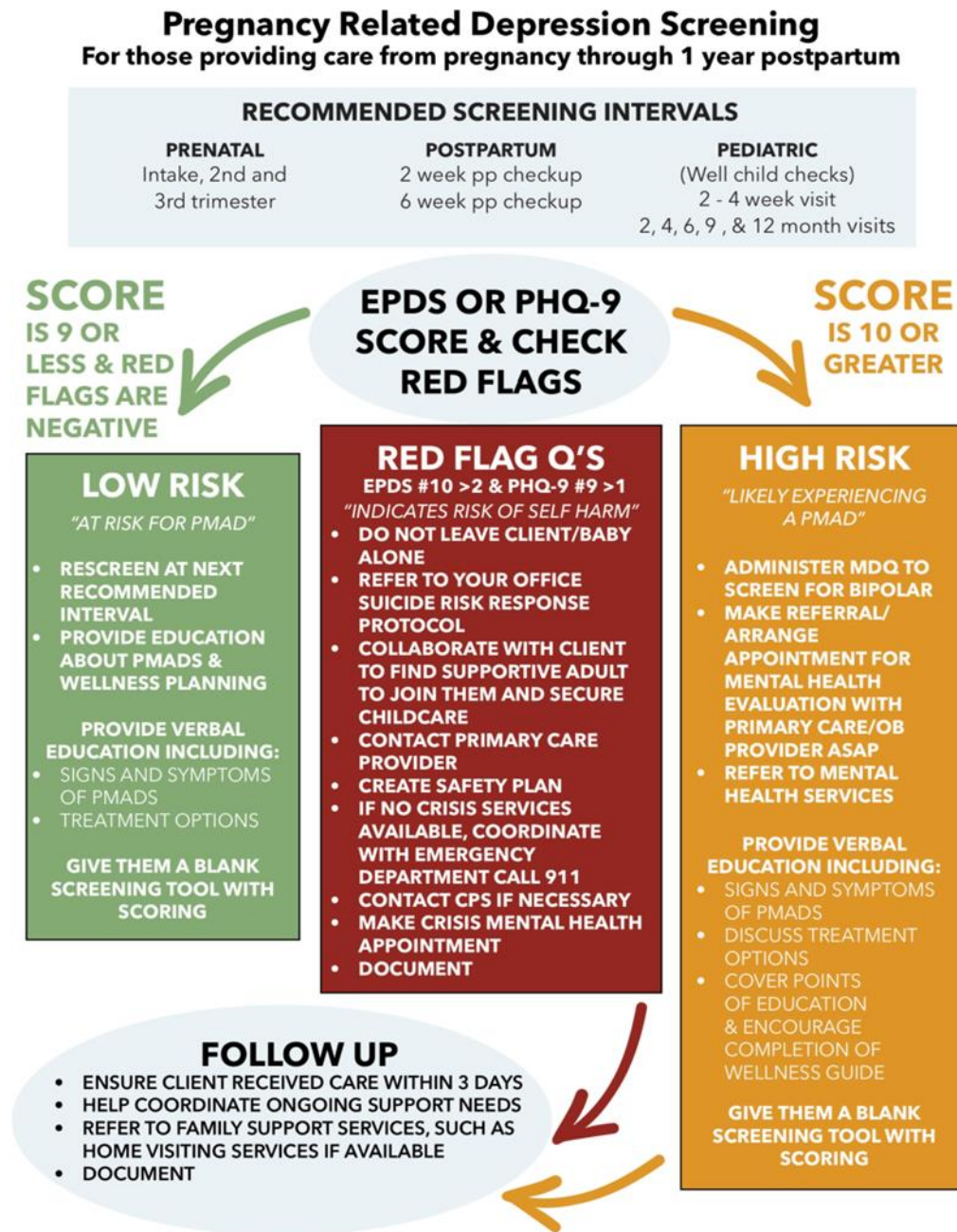
Project Framework

The Plan-Do-Study-Act (PDSA) model was utilized as a quality improvement (QI) framework for practice change aimed at increasing PDD screening rates and, when PPD screening was positive, offering a behavioral health referral and individualized MWP combined with provider education.

Interventions

The project DNP student developed a workflow for consistent use of universal PPD screening and patient education in the form of an MWP. Additionally, an HMHB algorithm for behavioral health referral was given to providers for consistent care for the women that scored positive for PPD. The proposed process designated the nurse to be responsible for the actual PPD screening, entering the results into the EHR, while the provider is responsible for reviewing the PPD screening score. With a positive screening result, the provider makes a behavioral health referral and offers the MWP and appropriate interventions.

Figure 6. Referral Algorithm



Ethical Considerations

The DNP project received institutional review board (IRB) approval from both Montana State University and Salish Kootenai College, according to governing Tribal policy. Both institutions' IRB approvals were provided as exempt status with minimal risk criteria. There was no author conflict of interest. The participants in the quality improvement (QI) project were staff whose participation in this project was kept anonymous. Participants gave written consent with the understanding that participation in the project was voluntary with the ability to withdraw at any time. The project had no negative financial impact with minimal workflow changes. All screening tools and the PPD management algorithm were free of copyright restrictions and available for clinical use without an associated fee. Thus, the project only had an estimated cost of implementation of less than \$50.

Data Collection

Using a data tally collection sheet, the staff recorded the number of postpartum women who were scheduled, either at a postpartum visit or first WCC, the number of women who received the PPD screening, the number of women that scored positive, and the number of women who had referrals to behavioral health services. All data remained secured or confidential until being provided by staff to the DNP student in a deidentified, aggregate number on the tally form. The DNP student held weekly in-person and telephone meetings with the site stakeholders to determine strengths and weaknesses of the process.

Results

The first goal for 100% of staff to attend the training on the importance of universal PPD screening and the process developed by the DNP student was achieved in the planning phase of the project. The second goal was to meet with all the presenting postpartum women being screened for PPD, which is an increase from previous project site numbers of 12% of postpartum women being screened for PPD. Of the two postpartum women screened for PPD, both (100%) were offered a referral to mental health and a maternal wellness packet as both women had positive PPD screenings. Both women declined behavioral health referral and the MWP citing previous experience with PPD and the desire to utilize traditional cultural methods. Due to the limited 4-week timeline of the DNP project, there were only two postpartum patients. Of the two postpartum mothers, 100% were screened for PPD. The EPDS was not able to be implemented in the current EHR system during the time of the project as the healthcare system needed to wait for a system-wide update. However, this provider/nurse team utilized the preprinted, laminated EPDS screening tool for the mothers to fill out independently, and the nurses documented screening results in the EHR as they followed the new process.

The DNP student had a project conclusion session with stakeholders to share project results and elicit feedback. The stakeholders felt the process encouraged leadership skills of the nurses and front desk to ensure that the right patient was identified for PPD screening, and the screening was completed and charted appropriately. One provider did not see any differences in their practice as they routinely utilize universal PPD screening on patients. The second provider did not have any postpartum or WCC visits scheduled during the project timeframe. Thus, the second provider had no feedback on the workflow process change. For future sustainability, the

stakeholders suggested the MWP and education be provided as a handout to each postpartum mother by the provider regardless of screening results. The most frequently stated concern of staff and providers was the lack of local behavioral health referral options. Some of the staff participants reported frustration with “one more thing” added to their role responsibilities. However, the simplicity of the data collection tally sheet and ease of having the screening available in each patient room, along with the preprinted MWP, made these additional tasks easier and faster than originally thought.

Discussion

A consistent process and role delineation support early identification of PPD and offers an opportunity for providers to discuss symptoms of PPD with patients and refer them for behavioral health and treatment when needed. Standardization of healthcare processes such as universal, standardized PPD screening, improves health outcomes and quality of care. PPD management enhances maternal/newborn bonding and the reduction of maternal mortality related to PPD, and minimizes decreases in cognitive and language delay for the child. This DNP project implied to demonstrate that standardization of PPD screening in the form of an evidence-based workflow process could increase the rate of PPD screening and patients being offered referrals to behavioral health in conjunction with the MWP. The small sample size limits any conclusive interpretation of the results. The results may not be a true representation of the studied population. An additional barrier was the documentation of the EPDS score in the EHR. Nursing staff reported the documentation process was cumbersome, as the EPDS was not in the current

EHR and required manual entry. Future adaptability of the EHR to have tabs including the EPDS, PHQ, and printable MWP would minimize staff's concerns for additional tasks.

By the completion of the project, the goal was to have 100% of postpartum patients screened for PPD with 100% of positive patients being offered a referral to mental health and an MWP. This was achieved by the DNP student providing education to all clinicians, developing an algorithm for PPD screening and referral process that defined staff responsibilities, and developing patient education and a MWP for mothers. However, the result is based off only two patients that received care from the same provider at the postpartum visit. The DNP project was not able to capture any results of the second provider or from WCC. This is missing data that could change the project results.

Changes to the project that could have made it more successful include: (a) a longer implementation timeframe to allow more patients to be part of the dataset, (b) recruit more than one clinic of the larger healthcare system to participate, (c) the EPDS added to the EHR, and (d) a staff participant being a champion of the project, either nurse, provider, or both. In hindsight, it would have been advantageous to query when and how many mothers were due to deliver so as to estimate opportunities to implement the project interventions. The completion of this project provided some questions that need additional research for evidence-based solutions. Is giving a handout on PPD and behavioral health resources enough? What are the barriers to patient's acceptance of a behavioral health referral? What interventions increase behavioral health referral acceptance rates? The unique skill set of a nurse practitioner would be able to provide the leadership required to provide quality, evidence-based practice change to improve health outcomes while providing patient-centered care.

Limitations

The limitations of the DNP project include a decrease in the DNP project timeline, which was adjusted to 4 weeks instead of 6 weeks due to delayed IRB approval. There was a lack of patients in the postpartum or initial WCC seen in the project timeline. The project was dependent on the number of expectant mothers delivering and returning for postpartum follow-up visits during the allotted time. The smaller dataset limits conclusions and suggestions to future replication of the project. Data inclusion by only one provider limits result interpretation on consistency. The DNP project timeline and project focus did not evaluate follow-up of mothers who screened positive for PPD. There was no way to determine the mothers' next steps in management or if they actually went to the behavioral health appointment. A future workflow process for ongoing management of mothers with PPD would be of benefit to the practice. In the developed workflow process, the case manager would follow-up within 3 days of behavioral health referral. This was not evaluated during the project as there were no mothers that fit this requirement during the allotted timeframe.

Conclusion

PPD is a serious obstetric complication that can have significant consequences for the mother and her child. The research shows that early identification of PPD can improve maternal outcomes through early interventions. This PPD identification can be done with consistent, universal PPD screening using standardized screening tools such as the EDPS and PHQ-9. Despite current recommendations by professional organizations to use standardized universal screening, further efforts need to be employed to increase overall PPD screening rates. The DNP

project intervention—an educational in-service to the care provider team, provider agreement to use both the EPDS and PHQ-9, a simple PPD screening workflow with defined staff responsibilities, along with a behavioral health algorithm—were possibly associated with increased PPD screening rates. However, considerations of longer data collection time, inclusion of increased providers’ patient load, and having a staff project champion for buy-in may benefit future projects. The nurse practitioner caring for postpartum patients should include a standardized screening and behavioral health process to meet national recommendations and early PPD detection and management.

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CHAPTER FOUR

A REFLECTION OF THE DOCTORATE OF
NURSING PRACTICE ESSENTIALSEssential I: Scientific Underpinnings for Practice

The doctor of nursing practice (DNP) graduate will be able to demonstrate competencies of DNP essentials by incorporating nursing science with ethics, psychosocial, biophysical, and organizational sciences as a foundation of advanced nursing practice (American Association of Colleges of Nursing [AACN], 2006). The first essential, scientific underpinnings for practice, requires that the graduate improve healthcare delivery by creating and critiquing new practices, determine the impact of actions to improve healthcare delivery, and critically evaluate healthcare outcomes.

During the DNP program I participated in several assignments and the completion of quality improvement (QI) projects, both group and individual, to meet the first DNP essential of scientific underpinning. I demonstrated the ability to utilize scientific theories and concepts to develop a management plan for the target patient population of postpartum mothers. The use of descriptive statistics allowed me to interpret the data and identify variables that could lead to overall improvement. In NRSG 675 Scholarly Project, I was able to implement the Plan-Do-Study-Act (PDSA) cycle, allowing the student to identify areas of strengths in the QI project and areas of improvement while coordinating with the project stakeholders. Through evaluation of the PDSA and descriptive statistics results I was able to determine the best course of action for improvement of health outcomes and system process.

Essential II: Organizational and Systems Leadership

The second DNP essential, Organizational and Systems Leadership,

emphasizes practice, ongoing improvement of health outcomes, and ensuring patient safety. Nurses should be prepared with sophisticated expertise in assessing organizations, identifying system's issues, and facilitating organization-wide changes in practice delivery. This also requires political skills, systems thinking, and the business and financial practice quality and costs (AACN, 2006).

The Evidence-Based Practice I (NRSG 604) and II (NRSG 605) courses provided me with the opportunity to complete this essential through the completion of matrix tables requiring scientific-based studies. Development and completion of literature review matrix tables aided in the organization of information of articles into pertinent evidence-based categories. In Evidence-Based Practice II (NRSG 605), I was able to draw on the matrix tables' conclusions for patient care plans. Each care plan was different and flexible to meet the changing needs of patients. I was able to communicate the results, care plan, and changes through a written paper. My particular paper was on postpartum depression throughout the postpartum period. Additionally, I was able to demonstrate completion of the second DNP essential through coursework of the Design Healthcare (HC) Delivery System (NRSG 608) course with the completion of the 5P Microsystems assessment. I was able to demonstrate effective communication and was challenged to achieve new skills in the development of a Pareto chart. The course required clinical hours to identify systems in place and areas where the system was wasteful in resources, and how to minimize waste through systems change.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice

I was able to meet the elements of the third DNP essential of utilizing analytical methods to critically appraise existing literature and other evidence to determine and implement the best evidence for practice (AACN, 2006). This was demonstrated through several of the DNP program courses to include Evidence-Based Practice I (NRSG 604) and II (NRSG 605), Translational Research (NRSG 615), and the Scholarly Project (NRSG 675) courses. The program emphasized working in teams with leaders and followers to promote the best health outcomes for populations and individuals, specifically through the literature review and creation of matrix tables. Working as part of a team allowed individual strengths to lend to the overall success of the project and allowing others' insights to be represented. Both in Design Healthcare (HC) Delivery Systems (NRSG 608) and Healthcare Information (NRSG 610), I evaluated system process to determine practice pattern changes necessary for improving patient outcomes with value stream mapping of a healthcare organization site's current processes in materials management.

Essential IV: Technology for the Improvement and Transformation of Health Care

DNP graduates are distinguished by their abilities to use information systems/technology to support and improve patient care and healthcare systems, while providing leadership within healthcare systems and/or academic settings. Knowledge and skills related to information systems/technology and patient care technology prepare the DNP graduates to apply new knowledge, manage individual and aggregate level information, and assess the efficacy of patient

care technology appropriate to a specialized area of practice along with the design, selection, and use of information systems/technology to evaluate programs of care, outcomes of cares, and care systems. Information systems/technology provide a mechanism to apply budget and productivity tools, practice information systems and decision supports, and utilize web-based learning or intervention tools to support and improve patient care. This assignment, Quality Improvement Project Paper, was a group assignment that required the students to identify a healthcare problem and intervention and develop a quality improvement project. The team had to evaluate the process of the project as well as the outcomes.

This assignment meets the essential as it had the students work in a collaborative group to develop a healthcare program that identified the problem, provided interventions, and established a process for implementation. Also, the group used the PDSA method to determine if the intervention and process were working, what went well, and what needed to be improved upon based on patient outcomes. This was a hypothetical project. I learned the steps involved in program planning and implementation and the knowledge that, even when there are unexpected results, there is valuable learning to be had from that experience. Much of the data required to identify the problem and assess outcomes come from technology in the form of the electronic health record (EHR). The NP must know how to interpret the data and, even more so, know what data are needed. This is especially true in an age where information and data are easier to access and can be overwhelming.

Essential V: Health Care Policy for Advocacy in Health Care

I was able to demonstrate the fifth DNP essential through various courses to include Ethics, Law, Policy in Healthcare (NRSG 612), Advanced Leadership (NRSG 609), and the DNP Scholarly Project (NRSG 675) quality improvement (QI) project. The first course included group projects about teamwork, where I worked as both a leader and a follower. I needed to evaluate other members of the group as well as accept evaluation and criticism from the other group members. Additionally, I was required to analyze health policy on the local, state, and national levels for Ethics, Law, and Policy in Healthcare (NRSG 612) through discussion posts and interactions with peers. The QI project allowed me to put all the pieces together and work within a healthcare organization to invoke process change.

Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes

I was able to demonstrate the completion of the sixth DNP essential through the coursework of Advanced Nursing Leadership (NRSG 609) with the Personal Leadership Philosophy paper and the Conflict During Disaster paper. These papers allowed me to develop an effective communication and leadership style while influencing health outcomes for populations. The Conflict During Disaster paper emphasized collaboration of many members of the healthcare organization and community to assist in disaster relief. This assignment was particularly helpful when the COVID pandemic hit. Additionally, I demonstrated this essential through the coursework on Vulnerability and HC Diversity (NRSG 614) assignments. I was required to work in a group, complete an ABCDE Assessment, and develop a PowerPoint

regarding a vulnerable population of veterans. Through this assessment, specific healthcare vulnerabilities and areas to improve health outcomes for this specific patient population were identified. Some of the vulnerabilities include lack of access to healthcare through systems barriers, lack of transportation, or psychosocial barriers.

Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health

The DNP graduate student is prepared to synthesize complex concepts that affect clinical prevention and population health including psychosocial dimensions, social determinants of health, and cultural diversity, to address health promotion and disease prevention. Throughout the DNP, I was able to demonstrate this essential. Specifically in the Vulnerability and Healthcare Diversity (NRSG 614) assignment of the ABCDE assessment of veterans. Additionally, in Advanced Leadership (NRSG 609) in disaster reliefs and Ethics, Law, Policy and Healthcare (NRSG 613) discussions on various ethical and legal concerns facing patients and providers. Furthermore, Program Planning, Evaluation, and Outcomes (NRSG 611) gave the foundations to prepare for the Scholarly Project (NRSG 675) quality improvement project assignment through various discussion and group assignments requiring me to synthesize data, assess the reliability of evidence-based research, and understand the project planning process. Moreover, I was able to demonstrate this essential through the Scholarly Project (NRSG 675) quality improvement project on increasing postpartum depression screening in the postpartum period. This project spanned over two semesters and incorporated health prevention through screening a vulnerable population to identify patients in need. The overall goal of the quality

improvement project was to improve health outcomes for mothers who suffer from postpartum depression and the health of their infants.

Essential VIII: Advanced Nursing Practice

The eighth and final DNP essential prepares me to complete a comprehensive and systematic assessment of health and illness in a complex situation and then demonstrate advanced clinical judgement and systems thinking to deliver evidence-based care in order to improve patient outcomes (AACN, 2006). Through the completion of Evidence-Based Practice I (NRSG 604) and II (NRSG 605), Translational Research (NRSG 615), Advanced Clinical (NRSG 621, 622, 623, 624), and the Scholarly Project (NRSG 675), I demonstrated completion of the final DNP essential. Specifically through the literature review and design of and completion of the QI project, I was able to demonstrate a comprehensive assessment of healthcare system process and improvement to patient-population outcomes. In Advanced Clinical (NRSG 621, 622, 623, 624), I demonstrated critical thinking in the assessment of individual patients, and used evidence-based practice to design patient plan of care and use of evidence-based interventions.

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APPENDICES

APPENDIX A

LOGIC MODEL

Appendix A: Logic Model

Inputs What we will invest	Outputs		Outcomes - Impact		
	Activities - What we will do	Outputs (No. and%)	Short Term Results	Intermediate- Term Outcomes (%)	Long Term Results
✓ Stakeholder support for providers, nurses, staff that provide PPD screening ✓ Copies of Edinburgh Postnatal Depression Scale (EPDS) screening tool ✓ Identification of available community resources for patients that screen positive ✓ Time for education to complete the screening.	✓ Develop staff education regarding PPD screening and process. ✓ Develop pre- and -post educational surveys for staff ✓ Standardize screening tools use. ✓ Develop staff education on screening for PPD. ✓ Develop an algorithm for patients who need to be screened. ✓ Make patient wellness and education packet on PPD.	✓ Total number of staff vs those that attend education in service. ✓ Total number of postpartum patients vs total number of screened. ✓ Total number of postpartum patients screened vs total number of patients screened positive. ✓ Total number of patients screened positive vs total number received wellness packet/ referral to behavioral health.	✓ Education provided to 100% of staff by December 21, 2022 ✓ Increase in nurse/provider compliance PPD screening by 10% by week 2. ✓ Develop and implement wellness packet by January 6, 2023.	✓ 50% of postpartum patients will be screened using the EPDS or PHQ-9 in 3 weeks. ✓ 100% of patients screened positive will be offered a wellness packet by 6 weeks. ✓ 100% of patients screened positive will be offered a referral to behavioral health.	✓ Increase PPD screenings to 100% by end of 6 weeks.

APPENDIX B

MY MATERNAL WELLNESS PLAN

My Maternal Wellness Plan

PLAN AHEAD

My best place for relaxing in my home is: _____

Healthy, easy foods I like to eat are: _____

People I can ask for help when I need it:

1. _____ 2. _____

Ways I like to exercise and connect with other people, which I could do with a small baby:

1. _____ 2. _____

JUST IN CASE

Having a baby is a huge change and there are
Resources to help parents. If you are having
Feelings that is not going well, it is good to
recognize that and get help.

My early signs that I am feeling bad,
depressed, or too anxious

- _____

- _____

GET HELP

If it is not an emergency, but I need advice:

Provider's office daytime: _____

Provider/clinic after hours: _____

If it is an emergency and I am scared I
will hurt myself or my baby:

* 911

* National Suicide Crisis hot line: 988

If you feel like this, who are 3 people you
would talk with?

1. _____

2. _____

3. _____

APPENDIX C

MATERNAL WELLNESS PLAN EDUCATION

Maternal Wellness Plan Education

Sleep- It is very difficult to sleep with a newborn baby. It is important that you sleep when the baby sleeps. This may be in 2-3 hour blocks as baby needs to wake up to eat frequently. Create a healthy sleeping environment. Baby should sleep in the same room as you but in their own crib. The bed needs to be a flat surface without blankets, pillows, or stuffed animals. It is recommended to use blanket sleepers. When baby wakes it is important to care for baby's needs- feed them and change diaper if needed- then go back to bed. Quiet, dark, and comfortable places are the best sleep environments. Remember to avoid screen time at bedtime. You may need to take naps during the day. This could mean resisting doing household chores while baby is sleeping. Research shows that quality sleep helps with depression and anxiety.

Eat Well- It is important to stay well hydrated. Drink water throughout the day and have it readily available. Keep healthy snacks available for ready use. You may find it easier to prep single serve portions for snacking. Foods that are important to have on hand include: veggies, Protein, fruit, and whole grains.

Physical Activity- Engaging in 30 minutes of physical activity a day can reduce feelings of stress, depression, and anxiety. Remember to start easy and not to over do it. Walks with the baby, light housework and gardening are good activities

Connect- Having a new baby can feel overwhelming and isolating. Remember to stay connected with family, friends and community support systems such as church and social groups by phone, e-mail, text and social media. Short visits from friends and family are encouraged. Be very clear of your "visiting hours" as to set clear boundaries for self-care. These short visits are a good time to connect and allow the visitor to help if needed. It is ok to accept help and to ask for it when you need it. Everyone needs help!