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Perinatal Mental Health: Improving the Quality and Consistency of Health Care Delivery in Kootenai County

Leanne Elisha
elis5570@bears.unco.edu

UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

PERINATAL MENTAL HEALTH: IMPROVING THE QUALITY AND CONSISTENCY OF HEALTH CARE DELIVERY IN KOOTENAI COUNTY

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Leanne Elisha

College of Natural and Health Sciences
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has been approved as meeting the requirement for the Degree of Doctor of Nursing Practice in College of Natural and Health Sciences, School of Nursing, Program of Nursing Practice

Accepted by the Scholarly Project Committee

_____
Kathleen N. Dunemn, Ph.D., APRN, CNM, Research Advisor

_____
Faye Hummel, Ph.D., RN, CTN-A, ANEF, Committee Member

_____
Carolyn Bottone-Post, DNP, RN, CNM, Committee Member

Accepted by the Graduate School

_____
Cindy Wesley, Ph.D.
Interim Associate Provost and Dean
Graduate School and International Admissions

ABSTRACT

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Perinatal mental health issues including depression, anxiety, posttraumatic stress disorder, mania, and psychosis occur frequently during pregnancy and after delivery; these issues have potentially devastating impacts on mothers, infants, other family members, and communities. Despite increasing awareness of perinatal mental health issues and formal recommendations to implement universal screening and ensure access to appropriate follow-up, there is wide variation in clinical practice across regions and providers. Inconsistent screening, paired with limited local resources for follow up, might prevent women from receiving appropriate treatment. The objective of this project was to develop a guide for clinician use to improve screening, referral, and follow up of perinatal mental health issues. The guide identifies an appropriate screening instrument, screening intervals, methods, recording practices, and follow-up recommendations. Additionally, an integrated mental health model was proposed for ongoing treatment and coordination of care. The project was developed using the Delphi method and ongoing engagement with seven local stakeholders to create a streamlined, consistent process that would match clinician needs with available resources.

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CHAPTER I

INTRODUCTION

Perinatal mood and anxiety disorders (PMADs) are one of the most common complications of pregnancy and childbirth. It is estimated that across the population, up to one in seven women who are pregnant or give birth have experienced PMAD symptoms with even higher incidence in women with elevated risk factors (Earls, 2010; O'Hara & Wisner, 2014). Perinatal mood and anxiety disorders can occur at any time during pregnancy or the postpartum period and include depression, anxiety, mania, and psychosis (Hanley, 2009). These disorders may be debilitating for women and can interfere with infant attachment and bonding, possibly impacting families for generations. Perinatal mood and anxiety disorders also impact fathers, same-sex parents, grandparents, and siblings. Anxiety and depression during pregnancy are independent risk factors for cesarean delivery, preterm birth, and low birth weight (Hanley & Oberlander, 2014). Babies born to women experiencing PMADs often require higher levels of care in early infancy and frequently have difficulty with sleep and temperament (Hoffman, Dunn, & Njoroge, 2017). Severe maternal stress during the first trimester has been associated with increased risk of congenital malformations; prenatal stress at any point during pregnancy increases the risk of depression, anxiety, and behavioral issues in offspring (Glover, 2014; Hoffman et al., 2017).

Despite increasing awareness of PMADs and their impact, as well as recommendations from professional organizations including the American College of

Obstetricians and Gynecologist (ACOG, 2016), the U.S. Preventive Services Task Force (USPSTF, 2018), and the American Academy of Pediatrics (AAP, Earls, 2010), many of the providers who care for pregnant/postpartum women and their babies do not routinely screen for these disorders, leaving many women without proper diagnosis and treatment (Cox, Sowa, Meltzer-Brody, & Gaynes, 2016). Reasons often cited for not routinely screening for PMADs include lack of time, lack of institutional support, and unfamiliarity or discomfort with mental health issues. Even if women are screened and identified as having or being at risk for developing PMADs, providers often lack access to appropriate resources to which the women could be referred. Developing comprehensive practice guidelines for screening, assessment, referral, and treatment of PMADs might improve outcomes for women, their children, their families, and communities (Cox et al., 2016; Evans, Phillippi, & Gee, 2015).

Significance of the Problem

Kootenai County is located in the northern "panhandle" region of Idaho. Home to some 150,000 people, an estimated 1,800 babies are born in the county annually. Approximately 53% of prenatal, obstetric, and postnatal care is rendered by providers at Kootenai Health (2018), a community-owned hospital. Until recently, Kootenai Health had not had any formal guidelines or protocols to direct screening for perinatal mental health issues. Within the past 24 months, the outpatient obstetrics-gynecology clinic has begun screening women at the first obstetric (OB) visit using the Patient Health Questionnaire-2 (PHQ; Kroenke, Spitzer, & Williams, 2003), and the PHQ-9 (Kroenke, Spitzer, & Williams, 2001) at the six-week postpartum visit. Beyond this, there are no organizational guidelines for treatment or referral. Currently, no universal screening

process is in place at the inpatient Family Birth Center (comprised of labor and delivery, post-partum, and a neonatal intensive care unit (NICU)). Informal discussions with staff and leadership on the outpatient and inpatient sides of prenatal and obstetric care indicated a high level of interest in receiving education, support, and assistance in implementing routine screening, treatment, and referral.

Several organizations in the community provide outpatient mental health services including psychotherapy, support groups, and medication management. Several providers (including this writer) have interest and experience in treating PMADs but no formal system for referral exists between agencies nor is there any process for expediting treatment of women in urgent need of mental health assistance.

Gap Analysis

On national, state, and local levels, significant gaps exist between recommendations and actual clinical practice when it comes to screening, identification, and treatment of PMADs. A meta-analysis by Yawn et al. (2012) found, "Despite nearly universal health care encounters at some time during [the perinatal period], only about 50% of women with significant depressive symptoms are recognized" (p. 1). Women with less pronounced symptoms are often less likely to be identified, especially when there is no formal, routine mechanism for assessment.

In a 2015 review of literature, Evans, Phillippi et al. found that across obstetric, pediatric, and family practitioners, 3 in 10 rarely or never assessed for postpartum depression (PPD). Slightly more than half of providers responded they "ever," "sometimes," "often," or "always" assessed for PPD but, overall, only one in four routinely used a validated screening instrument. The same authors found that while a

majority of providers in pediatrics, family practice, and obstetrics (OB) felt it was their responsibility to identify PPD, most of these providers reported feeling lack of confidence in their ability to do so. Additional identified barriers to screening included time constraints, financial disincentives, concern over liability, inadequate availability of mental health services, and the perception that mothers did not want to disclose or discuss symptoms (Evans, Phillippi et al., 2015).

Even if screening is completed, multiple barriers can prevent women from receiving appropriate treatment including external barriers (lack of local resources, lack of insurance coverage) and internal barriers (avolition, shame, and stigma). Cox et al. (2016) found only 15.8% of women identified as having PPD received treatment and only 6.3% received "adequate" treatment. Goodman (2009) found most women (92%) said they would engage in individual therapy to treat PPD if it was recommended and available. Women indicated a preference to receive treatment in their OB providers' office, either by the obstetric provider or by a mental health professional. Even if women with or at high-risk for PMADs were identified and referred to a mental health professional for further assessment and treatment, follow-through was variable. Puryear (2018) found in women identified as being high-risk for PMADs, the rate of completed follow-up for mental health evaluation was only 21.1% when the mental health provider's office was in a separate location from the OB provider's office but as high as 81.1% when the mental health provider was embedded in the OB office.

Very little published information is available regarding incidence or treatment of PMADs in Idaho but abundant data indicate that mental health services in Idaho are generally inadequate and unable to match the needs of the population. According to

Mental Health America (2018), a national non-profit mental health advocacy organization, Idaho ranked 42 out of 51 (U.S. states and the District of Columbia) in terms of access to mental health care. In 2016, Idaho had the eighth highest suicide rate in the nation with 20.8 completed suicides per 100,000 residents. This rate is 50% higher than the national average, and makes suicide the second-leading cause of death of Idahoans between ages 15-34 (Idaho Department of Health and Welfare; Suicide Prevention Program, n.d.).

In Kootenai County (n.d.), the third most populous county in Idaho, mental health services are provided by a variety of agencies including the community-owned hospital, the State Department of Health and Welfare, for-profit clinics, independent practitioners, and a federally qualified health center. The community's largest outpatient mental health provider is the federally qualified health center (Heritage Health), which provides primary care, dental, and mental health services to several thousand clients annually. The mental health department is comprised of Heritage Mental Health, which provides primarily psychotropic medication management, and Family Support Services, which provides psychotherapy, community-based rehabilitation services, assertive community treatment, and an intensive outpatient treatment program. Together, the departments employ 27 clinicians (primarily master's level professional therapists or clinical social workers), two full-time psychiatric physician assistants (PAs), and one full-time psychiatric nurse practitioner (NP, Kootenai County, n.d.). According to personal communication with the directors of Heritage Mental Health and Family Support Services, the average wait times for new-patient appointments for medication management and psychotherapy are two to three months and six to eight weeks,

respectively. Both agreed no formal systems were in place for expedited referral for patients needing urgent care (including those with PMADs), and that such a system would greatly benefit the community.

A preliminary survey of OB providers at Kootenai Clinic indicated many were starting to screen patients for PMADs in the outpatient setting and were aware of the importance of doing so—yet barriers persisted. First, most providers who responded to the survey reported that despite screening regularly and being "familiar with screening recommendations," they were not familiar with the Edinburgh Postnatal Depression Scale (EPDS; Mcbride, Wiens, Mcdonald, Cox, & Chan, 2014)—one of the most highly-validated and recommended tools for screening in the perinatal period. Despite recently implementing some screening into prenatal and postpartum care, detection of PMADs was still very low. The Kootenai Clinic's obstetrics-gynecology practice informally estimated they encountered one case of PPD per month but based on delivery rates and national incidence of PMADs, the number of affected women was likely more than 10 times higher (J. Stotz, personal communication, October 2018). A subsequent review of depression screening in the OB clinic using the PHQ-9 (Kroenke et al., 2001), a validated instrument used widely in primary care, indicated nearly one in five women (18.5%) rated "moderate/severe" or "severe" depression symptoms.

Responses indicated that while some OB providers felt comfortable discussing mental health issues with perinatal women, they did not feel familiar with local resources for follow-up treatment. Most respondents (80%) indicated that having a standardized guideline to standardize screening, referral, and follow up across clinical settings would greatly improve access to care and outcomes in this vulnerable population.

Background and Significance of Perinatal Mood and Anxiety Disorders

Suicide Statistics

In the developed world, suicide is a leading cause of maternal death during pregnancy and the first 12 months postpartum. In the United States, more maternal deaths are due to suicide than to either hemorrhage or hypertensive disorders (Palladino, Singh, Campbell, Flynn, & Gold, 2011). A recent study in Ontario, Canada, revealed 1 in 19 maternal deaths was attributable to suicide (Grigoriadis et al., 2017). The authors also noted these numbers were likely underreported (death certificates did not always accurately reflect pregnancy or recent childbirth) and underestimated (many only considered the postpartum period to extend six weeks after delivery), making the actual estimated incidence of perinatal suicide strikingly high. According to a study in the United Kingdom from 1997-1999, 10% of all postpartum deaths were the result of suicide (Oates, 2003). Evidence suggested the methods by which pregnant and postpartum women committed suicide were more violent than non-perinatal suicides (more likely to hang selves or jump; Palladino et al., 2011).

Impact of Perinatal Mood and Anxiety Disorders on Children

The effects of PMADs are not limited to mothers; they extend throughout the family and impact babies, siblings, partners, and communities. The health impacts on babies of women experiencing PMADs have been well documented. Severe maternal stress during the first trimester is associated with increased risk of congenital malformations (Glover, 2014). Anxiety and depression during pregnancy have been identified as independent risk factors for caesarean delivery, preterm birth, and low birth

weight (Hanley & Oberlander, 2014). Poor growth and reduced rates of breastfeeding (especially in first time mothers) are also potential effects of PMADs (Toler, Stapleton, Kertsburg, Callahan, & Tolsma, 2018).

Babies born to mothers struggling with PMADs often require higher levels of care in early infancy. They frequently have difficulty with sleep and temperament and are at elevated risk of depression, anxiety, and behavioral issues (Glover, 2014). These infants are at risk of developing impaired social interactions, developmental delays, and language acquisition (Earls, 2010; Hoffman et al., 2017). Impaired attachment and bonding can impede brain development in a neglected infant to the point that magnetic resonance imaging scans reveal visible, negative changes to brain structure (Earls, 2010). They may develop insecure attachment, putting them at risk for behavior problems later in life (Hoffman et al., 2017).

Seymour, Giallo, Cooklin, and Dunning (2014) noted women with postpartum anxiety may be "insensitive to infants' cues," (p. 315), which can interfere with their ability to bond appropriately with their children. Adverse effects of impaired attachment become more entrenched and resistant to intervention over time, highlighting the need for early detection and intervention for depressed mothers (Hoffman et al., 2017; Seymour et al., 2014).

Impact of Perinatal Mood and Anxiety Disorders on Family

Perinatal depression often has a ripple effect on the entire family system. If a mother experiences postpartum depression, her partner is more likely to also experience depression (Earls, 2010). A correlation (though not clear causation) exists among perinatal depression and marital problems, substance abuse, and child abuse/neglect

(Norhayati, Hazlina, Asrenee, & Emilin, 2015). Parental depression could lead to poor implementation of recommended safety measures (i.e., using car seats properly or following safe-sleep guidelines) and excessive utilization of healthcare resources (Earls, 2010).

Financial Impacts of Perinatal Mood and Anxiety Disorders

Limited data exist regarding specific financial impacts of PMADs but much research confirmed the significant financial burden of depression in the United States and around the world. Greenberg, Fournier, Sisitsky, Pike, and Kessler (2015) estimated the economic burden of depression (major depressive disorder, bipolar depression, and dysthymia) in the United States in 2010 to be approximately $81.1 billion. The financial impacts of mental illness are multifactorial and include lost wages, lower productivity (due to missing work and struggling with cognitive challenges even if present at work), and significant medical comorbidities associated with increased healthcare utilization and spending (Greenberg et al., 2015; Kessler, 2012). In 2004, depression was the fourth leading cause of disability adjusted life-years (DALY), a measure of life lost to premature death and years lived with disability (Briley & Lepine, 2011). The World Health Organization (WHO, cited in Briley & Lepine, 2011) estimated that by 2030, depression would become the leading cause of DALY.

Diaz and Chase (2010) estimated the annual cost of untreated maternal depression is $22,647 per mother/infant dyad. This included lost wages and lower productivity by the mother, increased healthcare costs associated with the infant born to a depressed mother (risk of low birth rate, pre-term delivery), and downstream financial impacts to the child due to those complications. Cox et al. (2016) extrapolated that in 2008 this

could have accounted for almost $15 billion annually. It should be noted these financial estimates focused entirely on the economic burden of depression. The impacts of anxiety, posttraumatic stress disorder (PTSD), mania, and psychosis were not quantified in the literature and likely carried equally high economic impacts.

Risk Factors for Perinatal Mood and Anxiety Disorders

Multiple factors elevate a woman's risk of developing PMADs including history of anxiety or depression, history of interpersonal violence, adverse life events, unplanned pregnancy, physical illness or pregnancy complications, multiple births, sleep disturbance, low social and/or partner support, high perceived stress, high perceived childcare need, and low self-esteem (Paschetta et al., 2014; Toler et al., 2018). The strongest predictive risk factors for perinatal depression are history of depression (perinatal or non-perinatal episodes) along with psychosocial factors (O'Hara & Wisner, 2014; Paschetta et al., 2014;).

Personal or family history of psychotic disorders, previous episodes of postpartum psychosis, younger age, and sleep disturbance increase the risk of postpartum psychosis (Paschetta et al., 2014). Pregnancy complications including severe preeclampsia, cesarean delivery, lower birth weight, NICU admission, and perinatal death increase the risk of PTSD (Paschetta et al., 2014).

Definition of Terms

Two main diagnostic classifications systems used in psychiatry in the United States are the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5, American Psychiatric Association, 2013) and the 10th edition of the International Classification of Diseases (ICD-10) published by the WHO (2018). Each

system uses a different, but sometimes overlapping, taxonomy to describe PMADs. The DSM criteria are used widely for diagnostic and treatment purposes, while ICD-10 criteria are used primarily for coding and billing.

Neither the DSM-5 (APA, 2013) nor the ICD-10 (WHO, 2018) recognize postpartum depression as a separate diagnostic category. According to the DSM-5, if the patient meets diagnostic criteria for a major depressive episode (five out of nine neurovegetative symptoms present nearly every day within a two week period, symptoms not attributed to another condition, and symptoms caused significant distress or impairment), the specifier of "with peripartum-onset" is to be added if symptoms began during pregnancy or within four weeks of delivery (ICD-10 expanded the postpartum period to six weeks after delivery; WHO, 2018). The peripartum-onset specifier may also be added to episodes of Bipolar I and Bipolar II Disorders (including episodes of mania, hypomania, and depression; APA, 2013).

Organizations devoted to improving identification and treatment of PMADs, including Postpartum Support International (PSI; Segre & Davis, 2013) and the Marcé Society (Austin, 2014), have advocated for expansion of the "peripartum-onset" modifier to include onset within the first six months after delivery. In studies of postpartum women, depressive symptoms peak at six weeks, two to three months, and six months after delivery, rendering the four-week onset requirement overly restrictive and exclusionary (Earls, 2010; Sharma & Mazmanian, 2014). Additionally, these organizations support application of this modifier to episodes of brief psychotic disorder, mixed depression and anxiety disorder, and obsessive compulsive disorder (Segre & Davis, 2013). Postpartum Support International's rationale for this expansion included

acknowledgement that many women who suffer from PMADs present to their primary care and obstetric providers with mixed symptoms of anxiety and depression and these diagnoses more accurately reflect their clinical presentations. Of high concern was the incidence of obsessive compulsive disorder (OCD), which is very common in the postpartum period. Symptoms include intrusive and ego-dystonic thoughts of harming oneself or one's infant. If not properly assessed and diagnosed, these thoughts are often mistaken for psychosis and women might be wrongly accused of being potential threats to themselves or their children, which delays treatment and can—in worst case scenarios—result in inappropriate engagement of child protective services (Segre & Davis, 2013). If clinicians are able to confidently rely on DSM criteria to assess patients and therefore direct treatment, outcomes will be improved.

As DSM-5 (APA, 2013) and ICD-10 (WHO, 2018) taxonomy have limited use in clinical practice, many stakeholders—including mental health professionals and obstetric/gynecological providers—have developed pragmatic, clinically useful terms for describing mental health issues in the perinatal period (Milgrom & Gemmill, 2014). Mood, anxiety, and psychotic disorders exist on a spectrum ranging from mild depression and anxiety to severe, life-threatening depression and psychosis. Definitions and parameters might vary across clinical settings or cultures but the general consensus is these disorders begin during pregnancy or within the first 12 months after delivery (Earls, 2010; Norhayati et al., 2015; O'Hara & Wisner, 2014). It should also be noted that preexisting mental health disorders may be exacerbated during this time period (Fairbrother, Young, Janssen, Antony, & Tucker, 2015; Norhayati et al., 2015).

Baby blues. Mild or moderate symptoms that usually occur in the first few days or week after delivery. It is estimated that between 50-80% of postpartum women experience these symptoms including sadness, mood swings, tearfulness, anxiety, and worry. These symptoms might be distressing but do not interfere with functioning and usually resolve within one to two weeks with support and reassurance (Earls, 2010; O'Hara & Wisner, 2014).

Bipolar disorder. Characterized by fluctuation in mood or energy states that last days to weeks at a time. While popular culture focuses on episodes of mania (increased energy states with typically with decreased need for sleep, euphoria, impulsivity, risk taking behavior, and grandiose thinking), people with bipolar disorder (BD) generally spend significantly more time in a depressed state, which is often misdiagnosed as "unipolar" depression. Women with BD are at elevated risk for episodes during and after pregnancy with up to 50% of women with bipolar II disorder experiencing depression postpartum (Mandelli et al., 2016). Contributing factors include gonadal steroid withdrawal after delivery and sleep deprivation due to circadian rhythm shifts and care needs of the newborn (O'Hara & Wisner, 2014). Munk-Olsen et al. (2009) found that in the first 30 days postpartum, women with BD had a relative risk of 23.3 of having a psychiatric admission (compared to women at any other period postpartum). Pregnancy and birth could be triggers for de novo mania and hypomania in women without previous BD diagnoses and up to 20.4% of women experience symptoms of hypomania after childbirth (Sharma, Al-Farayedhi, Doobay, & Baczynski, 2018). Hypomanic, manic, and mixed episodes tend to occur immediately after childbirth

(Sharma & Xie, 2011). The elevated mood of hypomania might be misinterpreted as a normal joy of being a new parent and the diminished need for sleep might be obscured by the typical sleep disruption in the postpartum period. While manic and hypomanic episodes can occur later postpartum, depressive episodes are much more common, affecting up to 50-75% of women with BD (Mandelli et al., 2016).

Obsessive compulsive disorder. Mother has recurrent, intrusive, unwanted, and uncomfortable (ego-dystonic) thoughts—often of harming self or baby. Baby is at low risk; the mother takes steps to protect baby (possibly overprotect) and does not want to harm it (Paschetta et al., 2014). Occurs in up to 4% of women. Postpartum OCD is often misinterpreted as psychosis (O'Hara & Wisner, 2014).

Perinatal anxiety. Large umbrella term that includes generalized anxiety, panic, social anxiety, and obsessive compulsive disorders. Reported rates vary with prevalence rates from 4.5% to 15% (Paschetta et al., 2014). Prenatal anxiety is associated with adverse outcomes including miscarriage, low birth weight, preeclampsia, and premature birth. Prenatal anxiety is a strong predictor of postpartum depression; a large-scale study found 66% of women meeting diagnostic criteria for a major depressive episode in the postpartum period also had comorbid anxiety disorders (Fairbrother et al., 2015).

Perinatal depression (often called postpartum depression). Includes profound symptoms including dysphoria, hopelessness, helplessness, anhedonia, avolition, crying spells, and possibly suicidal ideation. Symptoms usually begin at least several weeks after delivery (but might be preceded by baby blues) and last at

least two weeks. Untreated depression might persist for months or even years. Prevalence depends on definitions; if using strict DSM 5 (APA, 2013) criteria for major depressive disorder, Gavin et al. (2005) estimated prevalence of 7.2% within the first three months postpartum, whereas the incidence of more broadly defined depression was estimated at 19.2%. A study of prevalence of depression during pregnancy estimated 18.4% with 12.7% meeting criteria for a major depressive episode (O'Hara & Wisner, 2014), indicating prenatal depression was just as prevalent as postnatal depression.

Postpartum psychosis. A break from reality that constitutes a medical emergency. The mother might be confused or disoriented; she might experience hallucinations or delusions, for example, believing her baby is possessed by a demon or that she needs to kill the infant to "save" it. These thoughts are ego-syntonic. Symptoms can wax and wane with periods between episodes when the mother feels and appears normal. Preexisting BD is a risk factor for developing postpartum psychosis; women who present with postpartum psychosis frequently meet diagnostic criteria for bipolar depression, manic, or a mixed-state, with psychotic features (O'Hara & Wisner, 2014). Onset is generally within the first one to two weeks after birth and incidence is one to three per 1,000 births (Earls, 2010; Paschetta et al., 2014). The risk of recurrence with subsequent pregnancies is between 30% and 50% (APA, 2013).

Posttraumatic stress disorder. Develops after exposure to a traumatic event associated with serious risk of death, injury, or threat to physical integrity. Symptom-clusters include re-experiencing the event (flashbacks, intrusive memories, or

nightmares), avoidance of reminders of trauma, negative thoughts or feelings about the trauma, and nervous system arousal related to the trauma (APA, 2013). Childbirth itself is frequently a risk factor for development of PTSD. Women who experience traumatic births (requiring urgent or emergent medical intervention) or experience medical complications during pregnancy (including hyperemesis, preeclampsia, eclampsia, and preterm labor—especially if these require hospitalization—are at elevated risk of PTSD in the perinatal period (Grekin & O'Hara, 2014). Other risk factors include history of non-birth related trauma, perceived low social support, and postpartum depressive symptoms (Grekin & O'Hara, 2014; Khoramroudi, 2018). Postpartum PTSD prevalence ranges from 1% to 21% in community samples and up to 43% in high-risk samples (Khoramroudi, 2018).

Doctor of Nursing Practice Project Purpose and Statement of Objectives

The purpose of this Doctor of Nursing Practice (DNP) scholarly project was to develop a comprehensive guide to improve the mental health care provided to women in Kootenai County during the perinatal period. Developing this guide required the engagement of multiple stakeholders including OB and mental health providers, nursing and social services staff, and administrative staff. The guide recommended the following based on stakeholder consensus:

1. An appropriate screening instrument
2. Appropriate screening intervals
3. Screening method and process for recording results in the medical record

4. Specific actions the clinician should take based on pre-established cutoff scores
5. A method for transferring care and assessing follow up once risk or symptoms have been identified.

The final objective necessitated proposal of an integrated mental health model. Implementation of the proposed guide and model will occur outside the scope of this scholarly project given the significant institutional and financial investment required. Developing the scholarly project built a foundation and framework for such a program, served to mobilize stakeholders, and provided impetus to build a comprehensive maternal mental health clinic at Kootenai Health.

Significance of the Doctor of Nursing Practice Scholarly Project

The DNP degree has been promoted by the American Association of Colleges of Nursing (AACN, 2006) as the terminal professional nursing degree. The degree was developed in response to recommendations from the Institutes of Medicine (cited in Moran, Burson, & Conrad, 2014) reports, *Crossing the Quality Chasm* and *The Future of Nursing*, both of which identified the need for changes to the structure and implementation of healthcare delivery in the United States. The intended outcome of such restructuring was to

> promote health care that is safe, effective, client-centered, timely, efficient, and equitable; that health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement and informatics; and, that the best prepared senior

> level nurses should be in key leadership positions and participating in executive decisions. (AACN, 2006, pp. 5-6)

The DNP scholarly project also serves as a demonstration of the student's ability to synthesize evidence and translate it into clinical practice. Moran et al. (2014) indicated that when a student is developing a DNP scholarly project, the following questions should be considered: "Is there a contribution to comprehensive quality health care? Are there specific benefits for a group, population, community, or policy? Does the project advance nursing practice at the local, state, and national levels?" (p. 74).

This DNP scholarly project met the majority of the criteria noted above. The project focused on improving access to evidence-based treatment in a patient-centered setting. Implementation of the project would improve efficiency and promote safety while providing clinical benefits to a generally under-served population. Developing the project required this author to assume a leadership position and to work collaboratively with other healthcare professionals. When implemented, the initial impact would be at the local community level but if successful, the program would hopefully be adopted across the region and neighboring communities.

Congruence with Organization's Strategic Plan

Kootenai Health (2018) is a 292-bed community-owned hospital in Idaho's northern "panhandle." It provides services to residents of northern Idaho, eastern Washington, and western Montana. Kootenai Health's mission is to "improve health one patient at a time in a friendly and professional culture committed to superior quality and safety" (p. 1). The organization's vision is to become "a comprehensive regional medical center delivering superior, patient-focused care and [to] be recognized among the premier

health care organizations in the United States" by 2020 (Kootenai Health, 2018, p. 1). Kootenai Health received the "Baby-Friendly" designation in 2002, which indicates the highest standard of care for mothers and babies, and recognizes the organization's dedication to "improving infant health through breastfeeding and other maternal-infant care practices" (p. 1). The hospital opened a Level III NICU in 2016, reiterating their commitment to caring for the most vulnerable babies and families.

In 2006, Kootenai Health (2018) received Magnet status designation from the American Nurses Credentialing Center. This designation is recognized nationally as "the gold standard" for nursing excellence; hospitals with this designation are expected to promote a collaborative culture that values, supports, and retains nursing talent.

Support of the development and implementation of this DNP scholarly project was congruent with Kootenai Health's (2018) commitment to providing innovative, evidence-based, and patient-centered care as well as supporting the professional development of nurses.

Assumptions

Prior to and during development of this scholarly project, assumptions were made based on direct personal observation, professional clinical experience, and communication with stakeholders. This author became pregnant with her first child around the time she was formulating the concept for her scholarly project. She attended her prenatal and postpartum appointments with a provider whom she trusted, wondering if she would receive some form of screening for depression or anxiety—she did not. When she asked directly, her OB and her nursing staff revealed they believed mental health was an under-recognized issue but they felt unprepared to assess, much less

address it. As this author delved into the literature, she found her experience was fairly typical and further discussion with obstetric, pediatric, and mental health providers in her community confirmed they felt this was an area in need of much attention. This author recently gave birth to her second child and was encouraged to learn that her OB's office provided some screening (PHQ-2 at initial prenatal visit [Kroenke et al., 2003]; PHQ-9 at six-week postpartum visit [Kroenke et al., 2001]) but not surprised to hear that if someone scored 'positive' on the screens, the offices felt unequipped to manage patients or refer them to someone who could.

As a psychiatric provider in an acute inpatient behavioral health unit, this author frequently cared for women experiencing postpartum depression and anxiety (and less frequently mania and psychosis) and become frustrated to learn that (a) many of the women either had histories of mental illness prior to pregnancy and had either independently discontinued their psychotropic medications or had been taken off of medications by well-meaning but poorly-informed providers or (b) had not been formally diagnosed with mental health issues prior to pregnancy but clearly displayed signs and symptoms that could have been addressed earlier, potentially avoiding the need for hospitalization. Finally, this author became acutely aware of the difficulty her unit's case managers had finding appropriate and timely follow up for these women after hospital discharge. Her personal and professional experiences were unfortunately consistent with findings from across the country but she was encouraged to see a tremendous amount of support for an initiative to improve care of this vulnerable population.

Limitations

This project was limited in scope to developing a guide for the screening, referral, and follow up of mood and anxiety disorders in women who were cared for prenatally by Kootenai OBGYN providers (obstetricians and midwives). Upon evidence of support or interest, the guide could be shared with independent obstetric and midwifery practices in the community as well as pediatric and primary care providers. The scholarly project entailed developing the guide and seeking consensus and approval from stakeholders. Full implementation of a stepped care or integrated mental health model will occur outside the timeframe of the scholarly project as it would involve hiring and onboarding one or two clinicians to be embedded within the OB clinic, a process that would require significant institutional investment and could take many months. The guide did not make specific treatment recommendations (i.e., recommending specific medications or dosages) as doing so would have vastly expanded the scope of the project. The issue of under-recognized bipolar disorder was noted and discussed in the literature review but ultimately screening for bipolar disorder was not specifically addressed in the guideline. Similarly, separate instruments were not identified to screen for anxiety or psychosis. It was felt initial efforts should focus on building basic infrastructure and screening systems and further refinements could be completed at a later date.

CHAPTER II

LITERATURE REVIEW

Historical Background of Perinatal Mood and Anxiety Disorders

Disturbances in mood and sensorium in pregnant and postpartum women have been described in the literature for more than a thousand years, beginning with Hippocrates' descriptions of "agitation, delirium and attacks of mania" in a woman who had recently given birth to twins (Hanley, 2009, p. 3). Hippocrates (cited in Hanley, 2009) theorized these attacks were the result of suppressed lochial discharge flowing to the head, consistent with his theory that four "humors" determined health and temperament and that imbalance of said humors would result in illness. Modern scientists proposed that what Hippocrates described in the postpartum woman was in fact *Streptococcus A* infection leading to sepsis and delirium but the belief that mental disturbances in postpartum women resulted from excess moisture endured for centuries. The 13th century physician Trotula (cited in Hanley, 2009) wrote: "If the womb is too moist, the brain is filled with water, and the moisture running over the eyes compels them to involuntarily shed tears" (p. 3).

While the belief that women's psychiatric symptoms were due to fluid imbalance was misguided, things only got worse for women in the Middle Ages when various forms of mental illness were attributed to the practice of witchcraft and often punished by burning or drowning—if the accused did not first die of suicide (Tasca, 2012). Case

studies of postpartum mental disturbances began to emerge in the 16th century. By the mid-19th century, the French physician Jean-Etienne Esquirol compiled 92 detailed case reports describing postpartum delirium and melancholy (Hamilton, 1962). He described varying degrees of illness; some were severe, requiring psychiatric hospitalization, and others were milder and could be cared for in the home. He also identified proposed causes of the illness including heredity, "extreme susceptibility," previous similar episodes, emotional instability, and traumatic events (Hamilton, 1962, p. 126). These early observations bore striking resemblance to currently recognized risk factors for perinatal mental illness. However, Esquirol's recommended interventions reflected typical medical practice at the time, primarily tepid baths and purgatives (a contemporary American psychiatrist also prescribed copious amounts of opium to reduce restlessness and irritability; Hamilton, 1962).

Later in the 19th century, Louis-Victor Marcé (after whom the Marcé Society was named) emerged as an authority on psychiatric illness in the perinatal period (Hamilton, 1962). He wrote extensively about more than 300 cases he had observed and categorized symptom onset into three periods: during pregnancy, in the "puerperal period" (the first six weeks after delivery), and the "lactational period" (more than six weeks postpartum) (Hamilton, 1962, p. 128). His writings described "délére triste" or "sad delirium," which corresponded to what is currently called postpartum psychosis. Marcé might have been the first researcher to propose a biologic basis for perinatal mental health issues, noting illness corresponded to physical and functional changes in the female reproductive cycle (Hamilton, 1962; Hanley, 2009).

In the 1920s, three main theories arose to describe the etiology of perinatal mental health issues (Hamilton, 1962). The first asserted no mental disorders were unique to pregnant and postpartum states; the second attributed psychogenic causes to postpartum illness; and the third suggested perinatal mental illness was influenced by physiological changes (as Marcé had proposed almost 70 years earlier). In 1937, Kanosh and Hope (cited in Brummelte & Galea, 2016) concluded postpartum psychiatric symptoms were related to chemical changes that occurred a few days after birth, consistent with the modern observation that abrupt drops in estrogen and progesterone levels after delivery might contribute to postpartum psychiatric illness (Brummelte & Galea, 2016).

By the 1950s, dysphoria in the days after birth was discussed freely in women's magazines, including *Ladies' Home Journal* and *McCall's*. The former published a letter from a maternity nurse calling attention to the "cruelty of maternity wards" (Held & Rutherford, 2012, p. 112), resulting in a flood of letters from readers confirming their own negative experiences. A phenomenon known as "third day blues" was described as resulting from unpleasant birthing experiences in hospitals with inattentive staff, unnecessary 'medicalization' of the birthing process, and disregard for the mothers' autonomy. In response, Dr. Frank McGowan responded to rising levels of feminist-consciousness with an article in *McCall's* in which he assured women that brief, mild "postnatal blues" were normal and women with more severe symptoms had underlying psychological or characterological flaws (Held & Rutherford, 2012).

The term "postpartum depression" first appeared in a 1960 issue of *Good Housekeeping* (cited in Held & Rutherford, 2012) with some acknowledgement that if depression persisted beyond the first few days after delivery it might warrant professional

treatment with newly emerging tranquilizer and antidepressant medications. A 1968 study of more than 300 women estimated prevalence of postpartum depression at 10.8% (Rhodes & Segre, 2013). The impacts of PMADs on infants were noticed in the 1970s when researchers studying the negative effects of maternal schizophrenia on children used depressed mothers as a control group. To their surprise, similar negative effects were noticed in both groups of children including increased risk for cognitive, motor, and language delays (Rhodes & Segre, 2013).

Despite increasing awareness, the DSM did not acknowledge the existence of postpartum depression until its 4th edition, which was published in 1994 (Segre & Davis, 2013). In that edition, postpartum mood disturbance was not considered a distinct category or illness; rather, "postpartum onset" was a specifier that could be added to episodes of mania, depression, or psychosis. This specifier remained in the subsequent DSM-IV-Text Revision (DSM-IV-TR) and was modified to include "peripartum onset" in the current edition of DSM-5 published in 2013 (Segre & Davis, 2013).

The early 2000s brought intensely high levels of media coverage to the issues of perinatal mental health. In June 2001, three months after giving birth to her daughter and suffering from severe postpartum depression and psychosis, Melanie Stokes jumped to her death from the 12th floor of a hotel in Chicago (Postpartum Depression Alliance of Illinois, n.d.). After her death, Melanie's family became vocal advocates for perinatal mental health, eventually lobbying for the Melanie Blocker Stokes MOTHERS Act. Signed into law in March 2010, the legislation provides funding and support for research, awareness, and treatment of perinatal mental health issues (Postpartum Depression Alliance of Illinois, n.d.).

The same month Melanie Stokes died, a mother in Houston, Texas, drowned her five children in a bathtub in the midst of a postpartum psychotic episode. The Andrea Yates case shocked the nation on multiple levels—first the disbelief that a mother could calmly and methodically kill her small children and then the disbelief she could be tried and potentially sentenced to death for actions carried out when suffering from a severe mental illness (Charatan, Eaton, & Eaton, 2002). In 2002, Yates was convicted of capital murder and sentenced to life in prison (over the objection of the prosecution who recommended the death penalty). The conviction was later overturned and in 2006, Yates was acquitted by reason of insanity and committed to a state psychiatric facility (McLellan, 2006).

These highly publicized cases dramatically shifted the public narrative about perinatal mental health. News media ran stories highlighting the prevalence and seriousness of postpartum depression while advocates for mental health and criminal justice reform aligned to advance awareness and shape legislation (Levin, 2016; Moran, 2002). In the mid-2000s, American celebrities began going public with their own mental health struggles. One of the first was Brooke Shields who appeared on *Oprah* in 2005 to discuss her battle with postpartum depression and to release her new memoir, *Down Came the Rain: My Journey Through Postpartum Depression*. In subsequent years, Shields was joined by Courtney Cox, Gwyneth Paltrow, Amanda Peet, Drew Barrymore, Adelle, and other famous women who shared their experiences with postpartum depression.

As awareness of PMADs has advanced in recent years, and so have advocacy and legislation. In 2006, New Jersey became the first U.S. state to mandate postpartum

depression screening; it was soon followed by Illinois, Massachusetts, and West Virginia. Many other states have convened task forces to expand education, screening, and access to care (Rhodes & Segre, 2013; 2020 Mom, n.d.). In 2010, the Melanie Blocker Stokes MOTHERS Act was included in the text of the U.S. Patient Protection and Affordable Care Act (ACA), mandating ongoing research and development of evidence-based treatment approaches to PMADs (Postpartum Depression Alliance of Illinois, n.d.). This legislation was unfunded but in 2016 the Bringing Postpartum Depression Out of the Shadows Act was signed into law and allocated $5 million to states to develop and expand treatment of PMADs (2020 Mom, n.d.).

In June of 2018, Illinois enacted new legislation that allowed postpartum mental illness to be considered as a mitigating factor in criminal sentencing (Prokos, 2018). While laws in the United Kingdom and Europe recognize postpartum psychosis is a mental illness requiring treatment and rehabilitation rather than incarceration and punishment, Illinois' law is thus far the only one in the United States that acknowledges or references perinatal mental illness (Prokos, 2018). Understanding of perinatal mental health issues has progressed immensely since ancient times but there is still much work to be done. Expanding awareness and advocacy must be translated into improved access and treatment, which in turn must improve outcomes for women, their babies, and their communities.

Theoretical Framework

The Stetler (2001) model was initially developed in 1976 and refined in 1994 as a practitioner-oriented model to assist individuals and groups to translate research into evidence-based practice. The model emphasized the importance of critical-thinking and

acknowledged non-research related forms of information are frequently combined with research in the decision-making process. Use of the model involved "determination of the availability of needed resources and, if applicable, the cooperation, support, or readiness of the stakeholders" (Stetler, 2001, p. 273). The Stetler model was used as the theoretical framework for this DNP scholarly project because the emphasis on both external evidence (formal studies, systematic reviews, consensus of national experts) as well as internal factors (experiences, local consensus) allowed a valuable level of flexibility and creativity that would facilitate implementation of a new clinical practice that matched the needs of the providers as well as the community. The model consisted of the following five phases:

- Phase I: Preparation
- Phase II: Validation
- Phase III: Comparative Evaluation & Decision-Making
- Phase IV: Translation/Application
- Phase V: Evaluation

Phase I: Preparation involved use of "conscious, critical thinking," (Stetler, 2001, p. 275) to identify a problem, define the purpose and outcomes of a project, affirm priorities, consider influential factors, and perform initial review of sources of information. For this scholarly project, this phase involved informal discussion with stakeholders, general review of related literature, and observation of community trends. Stakeholders included local OB, pediatric, and mental health providers; nurse managers; social workers; as well as patients who tried to navigate the system with varying degrees of success. This phase overlapped with the author's first pregnancy, during which time

she was increasingly aware of the prevalence of PMADs as well as the dearth of local resources available. This phase involved considering both external and internal factors when determining how to obtain and assess information.

Phase II: Validation required critical evaluation of sources that would be used in project development and implementation and synthesis of those findings. If sources of information were not found to be valid, the process could not continue. This involved a comprehensive literature review and discussion with national experts in the field of perinatal mental health. Additionally, a brief survey was distributed to local stakeholders to assess their current practice with regard to PMADs.

In Phase III: Comparative Evaluation and Decision-Making, this author assessed substantiating evidence, fit of the setting, feasibility, and current practice in order to guide her decision-making. While a brief survey was distributed to stakeholders during the validation phase, this project used the Delphi method to formally solicit more detailed feedback from OB and mental health providers in the community regarding their perceived needs, beliefs, and barriers. A wealth of literature was available regarding the assessment, referral, and treatment of PMADs; however, without stakeholder engagement and without ensuring a good 'fit' for the target community, potential benefits of this project would be diminished.

In Phase IV: Translation/Application, evidence received in Phase III was translated into action. For this scholarly project, this culminated in the development of a guide related to screening, assessment, and referral of PMADs that fit the needs of the community (including providers, consumers, and other stakeholders). This guide took

into account current clinical practice, workflows, perceived needs of the users, and available community resources.

According to Stetler (2001), Phase V: Evaluation could be formal or informal and focused on an individual or an institution. Evaluation of the effects of the guide will occur outside the scope of this scholarly project and will involve discussion with administration, providers, and staff, as well as chart audit and case review. Individual impacts will be assessed through face-to-face discussion with stakeholders to gather feedback to make ongoing refinements to the guide.

Synthesis of the Literature

An extensive and reiterative review of literature was conducted prior to and during development of this scholarly project. The review focused on three primary domains: (a) a review of position statements, best practices, and formal recommendations for screening and treatment of PMADs issued by pertinent organizations (American College of Obstetricians and Gynecologists, American Academy of Pediatrics, American Academy of Family Physicians, U.S. Preventive Services Task Force, American Psychiatric Association, and others); (b) a review of exemplar guidelines, algorithms, and "toolkits" for screening and treatment of PMADs actually used in clinical practice around the country; and (c) a review of evidence supporting the recommendations and current practices.

The literature search included use of PubMed, Cumulative Index to nursing and Allied Health Literature (CINAHL), GoogleScholar, the Agency for Healthcare Research and Quality's National Guideline Clearinghouse, and individual organizations' webpages. Keywords included perinatal, pregnancy, postpartum, depression, anxiety, mood disorder,

psychosis, mental health, screening, treatment, referral, system, guideline, algorithm, toolkit, referral, and system.

Professional Organization Recommendation:
American College of Obstetricians and Gynecologists

In a committee opinion published in May, 2015 (reaffirmed in 2016 and updated in 2018), the American College of Obstetricians and Gynecologists (ACOG) recommended that "clinicians screen patients at least once during the perinatal period for depression and anxiety symptoms using a standardized, validated tool" (p. e208). The opinion noted perinatal depression and anxiety were among the most common complications of pregnancy and if untreated could have significant negative impacts on women, their infants, and their families. The ACOG opinion noted that identifying women during the perinatal period might help to mitigate potentially devastating effects: "There is evidence that screening alone can have clinical benefits, although initiation of treatment or referral to mental health care providers offers maximum benefit" (p. e208).[1] The committee advised that OB providers and clinical staff be poised to initiate treatment and refer the patient to appropriate behavioral health resources if indicated. These resources were not described and the opinion simply stated, "Systems should be in place to ensure follow-up for diagnosis and treatment" (ACOG, 2018, p. e208).

In 2018, ACOG published a "Postpartum Toolkit," developed by a task force dedicated to "redefining the concept of the postpartum visit by reevaluating the timing

[1] The November 2018 update to the ACOG recommendation cited meta-analyses commissioned by the USPSTF (O'Connor, Rossom, Henninger, Groom, & Burda, 2016; Siu, 2016) as evidence that screening alone might improve outcomes; however, in-depth review of those documents in fact indicated there was *no* evidence that screening alone improved outcomes. The authors specifically noted these studies did not separate women who received screening alone from women who received treatment and screening.

and content of postpartum care" (p. 1). This toolkit included information, recommendations, and resources focused on improving the quality and comprehensiveness of postpartum care across multiple domains including pregnancy complications, preventative care, vaccinations, weight management, reproductive planning, substance use, breastfeeding, and depression. A section on postpartum depression discussed incidence, risk factors, signs and symptoms, screening instruments, treatment, and referral resources.

Screening timing and interval. The ACOG (2016) opinion was relatively vague in terms of when screening should be completed, specifying only "at least once during the perinatal period" (p. 1). This period included pregnancy and the first 12 months postpartum. The opinion noted that if a woman screened positive for depression or anxiety during pregnancy, additional screening should be completed during the comprehensive postpartum visit. The postpartum toolkit (ACOG, 2018) did not make any specific recommendations regarding depression screening intervals but generally recommended all postpartum women see their providers within three weeks after delivery and again no later than 12 weeks postpartum.

Screening tools. The ACOG (2016) opinion did not specifically endorse use of any one screening tool but outlined the pros and cons of several tools that had been validated for use during pregnancy. The opinion listed seven tools: the Edinburgh Postnatal Depression Screen (EPDS), Postpartum Depression Screening Scale (PDSS), PHQ-9, and several others (ACOG, 2016). The EPDS was discussed most extensively and was recommended over the other tools in part because it assessed anxiety and excluded somatic symptoms that are normal in the postpartum period. It was noted the

screening tools were not diagnostic and results must be interpreted with clinical judgment and consideration to context.

In the ACOG (2018) toolkit under the subheading "Screening and Diagnosis," seven different screening instruments were listed in bullet-point format (including the EPDS, PDSS, and PHQ-9, Beck Depression Inventory I and II, and others).

Beyond screening. In the original 2015 opinion and the 2016 revision, ACOG acknowledged that screening alone would not improve clinical outcomes and must be paired with appropriate treatment and follow up. This might include initiation of medical therapy by the OB provider and/or referral to other appropriate resources. The use of collaborative care, including use of a "depression care manager," (suggested to be a nurse or social worker) possibly even within the OB office, is suggested, though no further guidance is issued in the committee opinion.

In the postpartum toolkit (ACOG, 2018), the subheading "Treatment" lists peer counseling, cognitive behavioral therapy, and antidepressants, and the subheading "Anticipatory Guidance and Follow-up" recommends encouragement, support, and referral to a behavioral health specialist in cases of suicidal ideation, severe symptoms, or bipolar disorder. As of February, 2018, the toolkit echoed the previous ACOG (2016) committee opinion that screening alone did not improve clinical outcomes and it was imperative that providers promptly refer patients to appropriate mental health resources when appropriate (ACOG, 2018).

U.S. Preventive Services Task Force Recommendation Statement: Screening for Depression in Adults

In 2016, the USPSTF (Siu, 2016) published an updated statement on screening for depression in adults, recommending "screening for depression in the general adult population, including pregnant and postpartum women. …Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up" (p. 380). *Convincing evidence* indicated screening improved identification of depression in primary care settings and subsequent treatment with psychotherapy, antidepressants, or a combination of both improved clinical outcomes. The USPSTF's review of fair or good quality trials found 28%-59% reductions in risk of depression in postpartum women who received screening and some form of follow-up as compared to care-as-usual (Siu, 2016).

Adequate evidence was found that the magnitude of harms for screening of depression across the adult population was small to none (Siu, 2016). The magnitude of harms for treatment of depression in pregnant and postpartum women with cognitive behavioral therapy was small to none and the magnitude of harms related to treatment with second-generation antidepressants in this population was determined to be small to moderate, taking into consideration the low, but potential risk of fetal harm from medications (Siu, 2016, p. 381). The recommendation was rated as Level B, with a level of certainty regarding net benefit rated as "moderate." The USPSTF (Siu, 2016) concluded there was a moderate net benefit to screening for depression in adults, including pregnant and postpartum women *if* there were "adequate systems in place to

ensure accurate diagnosis, effective treatment, and appropriate follow-up after screening" (Siu, 2016, p. 381).

Screening timing and interval. The USPSTF (Siu, 2016) recommendation noted limited information was available regarding the optimal timing and frequency of screening for depression in pregnant and postpartum women. In light of limited evidence, it was recommended to use a "pragmatic approach," to consider screening all adults who have not been previously screened, and to use clinical judgment to screen individuals with risk factors or presentations that raise suspicion of depressive disorders (Siu, 2016, p. 382).

Screening tools. The USPSTF (Siu, 2016) did not specifically recommend any one screening tool but identified the EPDS as a commonly used and validated instrument for screening pregnant and postpartum women. The USPSTF reviewed 23 studies of the accuracy of the EPDS and found sensitivity ranging from 0.67 (95% CI, 0.18-0.96) to 1.00 (95% CI, 0.67-1.00). Specificity for detecting major depressive disorder (MDD) across the studies was at least 0.90 (Siu, 2016, p. 384).

Beyond screening. The USPSTF (Siu, 2016) specifically recommended that "screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up"; the statement expanded on this recommendation, specifying the "appropriate systems and clinical staff must ensure (1) screening is conducted; (2) if screens are positive, patients are either appropriately diagnosed and treated in that clinical setting, or referred to the appropriate setting for follow-up" (p. 383). The USPSTF recommendation acknowledged these systems could take a variety of forms. The *lowest effective level of support* was described as a system in

which a designated nurse advised physicians of positive screen results and implemented a protocol to refer the patient to appropriate follow-up. The other end of the spectrum, the *highest level of support* involved providing educational workshops to clinical and support staff, providing ongoing monthly educational lectures, clinician manuals, printed educational materials for providers, staff, and patients; personalized visits with a nurse specialist in which the patient receives assessment, education, and ongoing support; and visits with a therapist trained in cognitive behavioral therapy (Siu, 2016, p. 383).

Recommendation Statement: American Academy of Pediatrics

The AAP (Earls, 2010) recognized that perinatal depression was "the most underdiagnosed obstetric complication in America" (p. 1032) and pediatric providers were ideally positioned to facilitate early detection and intervention that could minimize negative outcomes for the infant, mother, and family unit. In 2010, the AAP published a clinical report entitled, *Incorporating Recognition and Management of Perinatal and Postpartum Depression into Pediatric Practice* (Earls, 2010). The report offered a review of pertinent literature and made recommendations regarding screening, treatment, and referral of perinatal depression. The report also specified which current procedural terminology (CPT) code should be used for screening to facilitate reimbursement. The recommendations were drawn largely from the Surgeon General's Conference of Children's Mental Health report (U.S. Department of Health and Human Services, 2000), USPSTF recommendations (Siu, 2016), and the AAP's own Bright Futures guidelines, which provided a suggested schedule of screenings for preventive pediatric health care (Earls, 2010).

The AAP report (Earls, 2010) recognized that while the infant, not the mother, was the pediatric provider's patient, supporting the mother and ensuring timely assessment and referral to appropriate resources would positively impact the entire family system. Because the pediatric care provider might have the most regular and frequent contact with the mother/family after birth, they were in an optimal position to provide early screening and facilitate intervention (Earls, 2010).

Screening timing and interval. The AAP (Earls, 2010) recommended screening at the one-, two-, four-, and six-month visits based on statistical peaks in onset of postpartum depression at six weeks, two to three months, and six months after delivery. Screening was not specifically recommended at a prenatal visit but the report noted this could be an ideal opportunity to identify risk factors and anticipate care needs. The report recommended using CPT code 99420 for screening, indicating this assessed a measure of risk in the child's environment. This CPT code has since been deleted and replaced with code 96161, indicating "administration of caregiver-focused health risk assessment instrument (e.g., depression inventory) for the benefit of the patient, with scoring and documentation, per standardized instrument" (AAP News, 2016).

Screening tools. The AAP (Earls, 2010) recommended using either the EPDS (Mcbride et al., 2014) or the PHQ-2 (Kroenke et al., 2003). It should be noted the AAP report was published in 2010 and based on the USPSTF 2002 depression screening recommendations, which have since been updated and specifically recommend use of the EPDS in perinatal women and the PHQ (various forms) in the general adult population (USPSTF, 2018).

Beyond screening. The AAP (Earls, 2010) recognized symptoms and illness exist on a continuum and responses to positive screens should be appropriately tailored to the individual and situation. Reassurance and education might be the most appropriate response to milder symptoms, whereas moderate or severe symptoms might require referral to another provider including obstetric, primary care, or mental health providers. If there was any indication of psychosis or suicidality or if the EPDS (Mcbride et al., 2014) score was greater than 20, the AAP recommended "using the referral process for local public mental health crisis/emergency services" (Earls, 2010, p. 1036). The report recommended considering referral to a variety of community-based programs including Early Head Start, Mother's Morning Out, or the Nurse-Family Partnership. No guidance was provided regarding use of psychotropic medications or specific forms of psychotherapy.

Recommendation Statement: Postpartum Support International

Postpartum Support International (PSI, 2019a) is an organization founded in 1987 with the purpose of increasing "awareness among public and professional communities about the emotional changes that women experience during pregnancy and postpartum" (p. 1). The organization advocates for research and legislation to support perinatal mental health and provides printed and electronic educational materials, online support groups, a toll-free warm-line, and comprehensive training for health systems, support group leaders, clinicians, and volunteers. Postpartum Support International maintains a section on their website with up-to-date recommendations for screening, treatment, and referral of PMADs.

Screening timing and interval. Postpartum Support International (2019b) recommends screening (a) at the first prenatal visit, (b) at least once in the second trimester, (c) at least once in the third trimester, (d) at the first or the six-week postpartum OB visit, and (e) at 6- or 12- months postpartum either in the OB or primary care settings. Additionally, PSI recommends screening be performed at the 3-, 9-, and 12-month pediatric visits.

Screening tools. Postpartum Support International (2019b) recommends use of the EPDS (Mcbride et al., 2014) or the PHQ-9 (Kroenke et al., 2001) with 10 being a recommended cut-off score for a positive screen using either tool. Postpartum Support International also notes the EPDS is a reliable screening tool for fathers but requires a lower cut-off for a positive score (recommended to use 5 or 6 to determine a 'positive screen'). It is recommended the screening be provided in the patient's native language if possible, in a private setting, and be introduced in a "caring and informative manner that normalizes perinatal mental health needs" (PSI, 2019a, p. 1).

Beyond screening. Postpartum Support International's (2019b) recommendations note that screening must be performed within a system that provides appropriate providers, supports, and an established protocol for referral for follow-up. The organization actively supports such systems by providing education to patients and clinicians, maintaining provider directories to facilitate referrals, and advocating for improved systems at community and state levels (PSI, 2019b).

Recommendation Statement: Department of Veteran Affairs/Department of Defense

The Department of Veteran Affairs and Department of Defense (Veterans Affairs, 2016) published an updated clinical practice guideline for management of pregnancy in 2018. New to this update (since 2009) is the recommendation that pregnant women be screened for depression during pregnancy and postpartum. This guideline was accessed through the Agency for Healthcare Research and Quality (2018), which has scored the guideline as "excellent."

Screening timing and interval. According to the VA/DoD guideline, screening for depression was recommended "periodically during pregnancy and postpartum" (Veterans Affairs, 2016, p. 21). No further recommendations were given regarding timing for frequency.

Screening tools. The VA/DoD (Veterans Affairs, 2016) guideline recommended using the EPDS (Mcbride et al., 2014) or PHQ-9 (Kroenke et al., 2001).

Beyond screening. There was no discussion in the VA/DoD (Veterans Affairs, 2016) guideline about further evaluation, referral, or treatment of depression in pregnant or postpartum women. Potential harms of screening included time spent screening and possible discomfort with screening questions.

Recommendation Statement: Marcé Society for Perinatal Mental Health

The Marcé Society (2019) was formed in England in 1980 and its stated aim was to "promote, facilitate and communicate about research into all aspects of the mental health of women, their infants and partners around the time of childbirth" (para. 2). In

2013, the Society published a position statement on psychosocial assessment and depression screening in perinatal women that discussed arguments for and against universal psychosocial assessment and depression screening (Austin, 2014). The statement outlined general principles involved in this work but explicitly avoided making specific recommendations regarding tools, instruments, or systems to facilitate such screening, instead stating, "These will need to be devised locally depending on existing resources and models of care" (Austin, 2014, p. 179). The position statement included a bullet-pointed list of "Guiding Principles" and suggested these be considered when providing psychosocial assessment and depression screening. These were fairly broad, non-specific recommendations (Austin, 2014).

Screening timing and interval. The Marcé Society's position statement suggested screening be completed during pregnancy and "at an appropriate time postpartum (e.g., 3 months)" (Austin, 2014, p. 185). No further or more specific recommendations were made.

Screening tools. The Marcé Society (Austin, 2014) did not endorse use of any one screening tool or instrument. The EPDS (Mcbride et al., 2014) was briefly mentioned and the statement noted Australian guidelines recommended universal use of the EPDS within integrated screening programs. Scottish and British guidelines suggested the EPDS be used only as an adjunct to clinical practice and also mentioned use of the Whooley Questions—a two-question depression-screening tool very similar to the PHQ-2 (Austin, 2014).

Beyond screening. The Marcé Society (Austin, 2014) emphasized the importance of psychosocial assessment that involved evaluating multiple domains, which

could impact a woman's mental health including social, cultural, psychological, and biological risk factors. Such assessment is generally completed through clinical interview and, in addition to identifying risk factors, could serve as a way of establishing a trusting relationship between the woman and her provider and providing an opportunity for education (Austin, 2014).

The Marcé Society's (Austin, 2014) position statement emphasized a collaboration between providers and professions to improve care with appropriate referral by the primary care provider to a specialist when indicated. These systems should take the mothers' preferences into consideration and respect her personal and cultural needs (Austin, 2014). Table 1 provides more information regarding professional organization recommendations for PMAD screening.

Table 1

Professional Organization Recommendations for Perinatal Mood and Anxiety Disorders Screening

Organization, Year Published	Disorders Addressed	Tool Recommended	Screening Frequency	Systems	Comments
ACOG, 2018	Depression and anxiety	Standardized, validated. Ranks 7 tools preferentially; EDPS is first	Once during perinatal period, If positive screen during pregnancy, repeat screen postpartum	Appropriate follow up and treatment. No specific guidance, discussion of collaborative care and depression care manager	
USPSTF, 2018	Depression	Does not specifically recommend a single tool; identifies EPDS as commonly used and validated	Pragmatic approach. Consider screening all who have not been previously screened; use clinical judgment if risk factors, signs or symptoms	Adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up. Stepped care, ranging from designated nurse who alerts provider and implements protocol for referral, to intensive and ongoing training of clinical and support staff	
AAP	Perinatal depression. Brief discussion of psychosis	EDPS, PHQ-2	Infant's 1-, 2-, 4-, 6-month visits	Recommends familiarity with local resources, especially for psychosocial support and emergencies; no discussion of formal referral systems. Consider community-based programs: Early Head Start, Mother's Morning Out, Nurse Family Partnership	CPT code 99420 for screening (code has since been updated to 96161). Referral to crisis/ emergency services if psychosis, suicidality, or EPDS >20.
PSI, 2019a	Mood and anxiety disorders	EPDS or PHQ-9, with cutoff of 10 as recommended for positive screen.	First prenatal visit, at least once in second trimester, at least once in third trimester, at first or 6-week postpartum OB visit, at 6-and 12-months postpartum, at 3-, 9-, and 12-month pediatric visits	Emphasizes development of established protocol for referral and follow up. Encourages use of community resources.	Organization is actively involved in advocacy work, provider directories/referral systems, warm-line for patients, and consultation services for providers.

Table 1 continued

Organization, Year Published	Disorders Addressed	Tool Recommended	Screening Frequency	Systems	Comments
VA/DoD, 2018	Depression	EPDS or PHQ-9	Periodically during pregnancy and postpartum.	No recommendations	
Marcé Society, 2019	Depression	Does not specifically recommend a single tool; identifies EPDS as commonly used and validated	During pregnancy and at an appropriate time postpartum.	Recommends collaboration between primary care and specialists.	Emphasizes importance of psychosocial assessment to identify risk factors for depression and to provide education and rapport building.

Established Protocols/Systems for Screening, Referral, Treatment, and Follow Up

Through the literature review process, several protocols and algorithms pertaining to screening, referral, and treatment of PMADs were identified. Algorithms were included for review if they met the following criteria: included specific recommendations for which screening tool to use and when to perform screening, included cut-off values for 'positive' screens, and outlined specific steps for referral based on scores. This was not an exhaustive review of protocols; some identified were similar to the ones detailed in the following paragraphs. The protocols reviewed were chosen for inclusion in this literature review because they are comprehensive and innovative, are widely utilized, and are supported by research, respectively.

University of North Carolina School of Medicine

The University of North Carolina (UNC, 2016) has developed one of the few inpatient perinatal psychiatry units in the United States. In addition to the inpatient program, the Department of Psychiatry offers a Perinatal Mood Disorders Clinic

(PMDC), offering outpatient treatment including psychotherapy, medication management, and a perinatal support group. The program's founders developed a comprehensive perinatal depression screening and treatment algorithm that is used throughout the University's healthcare system.

Overview of process. Screening is performed at initial OB, prenatal 28-32 weeks, lactation problem, and postpartum visits (UNC, 2016). A nurse or medical assistant gives the patient a paper copy of the EPDS (Mcbride et al., 2014) in the appropriate language and the patient fills it out independently. The nurse or medical assistant then enters the patient's responses into an EPDS flowsheet in the EPIC electronic medical record (EMR), and the provider then reviews these answers, follows up on any positive answers, and assesses the patient for safety (with special attention to question #10, which asks about thoughts of self-harm). Subsequent actions are determined by the EPDS score in conjunction with clinical judgment. All EPDS scores, assessments, and treatment plans are documented in the EMR (UNC, 2016).

Scoring and follow-up. Scores of =<6 generally prompt supportive counseling and encouragement to reach out to the provider should symptoms change. For scores of 6-9, the recommendation is to follow up at future visits, repeat EPDS screening if there is any indication of symptoms, and to provide printed material about the PMDC (UNC, 2016).

Scores of 10-12 indicate concern for minor depression and the provider is prompted to discuss stress relief, coping strategies, self-care, and sleep hygiene (UNC, 2016). An ICD9 code of 648.4 ("elevated EPDS") is added to the patient's problem list

(WHO, 2018). The patient is provided with printed material about the PMDC and follow up is conducted at future visits with repeat EPDS if there is any indication of symptoms.

Scores of =>12 indicate concern for major depression and further clinical assessment is indicated (UNC, 2016). If, after discussion, the clinician is not alarmed about the patient's psychiatric situation or if there is no intent or plan for self-harm, the patient is offered counseling, medications, and referral for outpatient psychiatric evaluation. The patient is also provided with the interventions provided for patient with scores of 10-12.

If the clinician IS alarmed by the patient's presentation or if there is any intent or plan for self-harm, the clinician pages one of the PMDC psychiatric providers (psychiatrists or psychiatric nurse practitioners) to discuss a plan of care (UNC, 2016). If there is concern for immediate harm to self or others, the patient is escorted to the nearest emergency department for evaluation.

Massachusetts Child Psychiatry Access Project

The Massachusetts Child Psychiatry Access Project (MCPAP, 2015) is a network of behavioral health consultation teams that provides support to primary care providers and facilitates integration of behavioral health into the primary care setting. The MCPAP developed a downloadable toolkit, the MCPAP for Moms Toolkit, to help providers implement screening into their pediatric visits as well as provide education, prompts, and suggestions for providers. Included in the toolkit are a primer with background information about the prevalence, risk, and potential complications of PMADs as well as available treatment options, a screening algorithm with suggested talking points, PDFs of the EPDS (Mcbride et al., 2014) and PHQ-9 (Kroenke et al., 2001), and PDFs of

checklists that incorporate EPDS questions into comprehensive well-child assessments for specific age groups (MCPAP, 2015). The toolkit also includes a handout with clinical pearls that can help a provider assess levels of risk and a summary of PMADs including Baby Blues, perinatal anxiety, perinatal depression, PTSD, OCD, and postpartum psychosis. Finally, the toolkit provides information about resources available in Massachusetts including emergency services, expedited referral to mental health providers, and home visitation programs (MCPAP, 2015).

Overview of process. Postpartum depression screening is completed during well-child visits within the first month after birth, at the two-, four-, and six-month visits, and at other visits if indicated (MCPAP, 2015). The recommended screening tool is the Survey of Wellbeing of Young Children (SWYC; Tufts Medical Center, 2019), which is described as "a comprehensive screening instrument used to assess children's cognitive, language, motor, and social-emotional development as well as family risk factors" (para. 1). The SWYC is provided in versions specifically tailored to the two-, four-, and six-month visits with the original EPDS (Mcbride et al., 2014) embedded in each version.

Clinical support staff explains the screen to the parent at the time of the first screening, and the parent self-completes the SWYC in a waiting room or private exam room. The MCAPA toolkit instructs the provider to document a clinical plan based on screening results but notes the screen itself is not required to be included as part of the medical record. The provider might bill for screening (using the SWYC with embedded EPDS [Mcbride et al., 2014], or the standalone EPDS) using the developmental-behavioral procedure code 96110 (WHO, 2018).

Scoring and follow-up. An EPDS (Mcbride et al., 2014) score of <10 is considered to not suggest depression, and clinical staff provide the parent with information about community resources to support emotional wellness (MCPAP, 2015). An EPDS score of ≥10 is considered to be a positive screen and further steps are based on clinical assessments of safety and risk. If there is any indicated risk of self-harm or suicide, immediate further assessment is indicated; talking points and assessment questions are provided in the screening algorithm. The parent/baby are not to be left unattended until further assessment and treatment plans have been established. The provider is instructed to call the MCPAP (2015) regional hub with any clinical questions and to refer to emergency services for any safety concerns.

For positive screens without concern for self-harm or suicide and if the patient is currently or previously engaged in mental health treatment, they should be referred back to their mental health provider and the provider should be notified of the positive screen (with the patient's consent). If the parent is not already engaged in mental health treatment, the provider can contact a MCPAP for Moms care coordinator for community referral resources and referral information. The parent's primary care provider (PCP) and/or OBGYN should also be notified of the need for monitoring and follow-up. Throughout this process, the pediatric provider can provide the parent with supportive counseling and encouragement (MCPAP, 2015).

The Women's Place-Texas Children's Hospital

The Women's Place is reproductive psychiatry program at the Texas Children's Hospital (affiliated with Baylor College of Medicine) in Houston, Texas, that provides psychiatric and psychological services for women across the reproductive lifespan

including preconception, during pregnancy, postpartum, and through menopause (Puryear, 2018). The program has recognized the need for enhanced detection, referral, and treatment of perinatal mental health issues in primary care, noting there are not enough mental health specialists to treat all those who need help. The program also notes that while screening recommendations and legislation are an important first step, it is imperative that appropriate systems be developed for follow-up, treatment, and ongoing support in the community. Using funding provided through the Texas Delivery System Reform Incentive Payment program, researchers and providers at The Women's Place developed a pilot project with the goal to increase access and improve the early detection and treatment of perinatal mental health (Puryear, 2018). The team surveyed primary care providers (pediatric and OB) and found common barriers to screening and assessment of perinatal mental health issues included lack of adequate mental health referral destinations, fear that screening meant 'ownership' of the problem, and lack of time and reimbursement. Additional challenges faced by pediatric providers included overcoming new mothers' fear of Child Protective Services (CPS) involvement should she disclose any symptoms of mental illness or thoughts of harming herself or her baby (Puryear, 2018).

Through this pilot program, The Women's Place team provided one-hour trainings to providers and clinical staff in pediatric and OB practices focused on the signs and symptoms of PMADs, administration and scoring of the EPDS, and documentation and submission of electronic referrals through the electronic medical record (Puryear, 2018). The team provided ongoing consultation, education, and support for the pediatric

and OB providers as well as analysis of rates of screening, referrals, and completed follow-ups.

Of very high interest, data analysis showed significant differences in follow-up completion depending on the location of the mental health provider (Puryear, 2018). In "coordinated referral" or referral to a mental health provider in a separate, distinct location, the rate of completed appointments was only 21.1% (Puryear, 2018). When mental health services were co-located (affiliated with the primary care office, within the same building or floor but in a separate office), the completion rate was 75.7% and when mental health was coordinated (an embedded provider within the primary care office), the completion rate was 81.1% (Puryear, 2018).

Overview of process. The OB providers performed depression screening during pregnancy at the first prenatal visit, between 34-36 weeks gestation, and at six weeks postpartum (Puryear, 2018). Pediatric providers performed screening at the initial well-child visit around two weeks, and two-, four-, and six-month well-child visits. In both settings, the mother self-completed the EPDS (Mcbride et al., 2014), which was scored by staff. Scores and treatment plans ere documented electronically in the EPIC EMR (Puryear, 2018).

Scoring and follow-up. If a score was =>10, the physician was to be notified and would discuss the results, referral, and treatment options with the mother (Puryear, 2018). If the mother agreed to the referral, an electronic referral was sent to The Women's Place or another appropriate resource. If the mother did not agree to the referral, this was documented in EPIC. There was no specific process for ongoing follow-up or assessment outlined in the High-Level Process Map detailing the screening

and referral process but during a conference presentation of this initiative, the importance of an integrated, comprehensive care network was emphasized (Puryear, 2018). Such a system would include culturally appropriate interventions, peer support, social work, emergency services, home visit, phone outreach, and a mobile van/clinic that could provide services in a woman's community. Table 2 provides detailed information regarding the aforementioned clinical protocols for assessment and referrals of patients with perinatal mood and anxiety disorders.

Table 2

Clinical Protocols for Assessment and Referral of Patients with Perinatal Mood and Anxiety Disorders

Institution	Tool Used	Location	Timing	Cut-off Values	Direction for Urgent Intervention
UNC	EPDS	OB offices	Initial OB, prenatal 28-32 week, lactation problem, postpartum visit	0-5: no 6-9: mild 10-12: moderate >12: major	Clinical assessment, contact designated psychiatric provider by pager to discuss care plan; if immediate potential for harm: escort patient to nearest ED
MCPAP	EPDS (embedded in SWYC)	Peds offices	Initial well-child visit within first month; then 2-,4-,6-month appointments, or if indicated	=>10: positive screen	Emergency services if acute concern for harm to self/others; contact MCPAP regional hub with clinical concerns
The Women's Place	EPDS	OB, peds offices	OB: initial OB, 34-36 weeks gestation, 6 weeks postpartum. Peds: 2 week follow up, 2-,4-, 6-month follow up	=>10: positive screen	Referral to "appropriate resource"

Evidence for Perinatal Mood and Anxiety Disorders Screening

Conflicting evidence exists related to universal screening for depression in pregnant and postpartum women. A systematic review completed by Thombs et al. (2014) concluded, "There is currently no evidence from any well-designed and conducted

[randomized control trial] that screening for depression would benefit women in pregnancy or postpartum" (p. 433). The authors recommended current screening guidelines be reconsidered until quality, randomized control trials could be completed. They further recommended healthcare providers educate women and their families about depression and that providers be alert for signs or symptoms of depression in pregnant or postpartum women and provide appropriate "assessment, […] referral or management" (Thombs et al., 2014, p. 439).

In their recent systematic review of evidence around screening for perinatal mood and anxiety disorders, Long, Cramer, Jenkins, Bennington, and Paulson (2018) asserted providers too often relied on clinical judgment rather than standardized assessment, which could lead to under-recognition of potentially serious illness. They recommended, "Given the prevalence and negative impacts of PMAD on mothers and children, further interventions to improve screening and referral are needed" (Long et al., 2018, p. 25).

A USPSTF commissioned systematic review of evidence published in 2016 by Siu found sufficient evidence to support universal screening of pregnant and postpartum women. The systematic review found 28-59% reductions in risk of depression at the three- to five-month follow up in women who participated in screening programs. However, the study did not differentiate between studies in which women received screening alone versus screening and additional treatment (Siu, 2016).

In January of 2019, a group of researchers in Canada conducted a systematic review to evaluate the evidence around screening for depression in pregnant and postpartum women but it was unknown when this study would be completed (Hamel et al., 2019). In light of the limited and sometimes conflicting data, it might be appropriate

to take a more pragmatic approach when considering whether or not it is appropriate to screen pregnant and postpartum women for PMADs. Milgrom and Gemmill (2014) suggested, "If a health condition is serious, prevalent, under-detected and treatable, and if a tolerable screening procedure of known accuracy is available, then screening can be an effective measure in principle" (p. 14). In the case of perinatal mental health issues, these five criteria are satisfied.

Seriousness

Perinatal mood and anxiety disorders have been associated with significant morbidity and mortality. In the United States, postpartum women are more like to die from suicide than from either hemorrhage or hypertensive disorders (Palladino et al., 2011). Grigoriadis et al. (2017) found at least 1 in 19 maternal deaths in Ontario, Canada were attributable to suicide and it was noted that the actual incidence might be significantly higher due to underreporting of postpartum status on death certificates. Even when the outcome is not death, PMADs severely impact the mother, infant, partner, extended family, and community. Women are at risk for poor self-care, preterm delivery, feelings of shame and worthlessness, and suicide (Hanley & Oberlander, 2014). Infants are at risk for complications including low birth weight, difficulty with sleep, and cognitive deficits that might persist into adolescence or beyond (Glover, 2014). Un- and undertreated PMADs might interfere with the mother's ability to form a healthy relationship with her new baby and to maintain relationships with partners and family members (Seymour et al., 2014).

Prevalence

Estimates of the prevalence of postpartum depression have ranged from 7.2% to 19.2% (Gavin et al., 2005; O'Hara & Wisner, 2014) and depression during pregnancy is estimated to be almost as common. Clinically significant anxiety affects up to 15% of pregnant and postpartum women (Paschetta et al., 2014) and up to 43% of women in high-risk groups might experience PTSD symptoms (Khoramroudi, 2018). Merrill et al. (2015) commented the background prevalence of bipolar disorder in perinatal women (2-6%) is similar to that of gestational diabetes (5%) and gestational hypertension (4.4%), for which both are routinely screened. Up to 70% of women with BD experience perinatal depressive symptoms (Merrill et al., 2015)

Under-Detected

Many experts believe the numbers above might be artificially low as many women experiencing PMADs do not independently seek treatment (Milgrom & Gemmill, 2014). Beck and Gable (2001) and Cox et al. (2016) estimated up to 50% of all cases of perinatal depression go undetected and approximately 85% of affected women do not receive treatment. Furthermore, it was estimated only 3-5% of affected received *adequate* treatment that resulted in symptom remission (Cox et al., 2016). Barriers to detection included lack of awareness about PMADS and available treatment, stigma, unrealistic expectations about parenting roles and fear of being perceived as a failure, and lack of appropriate resources or ability to navigate the mental healthcare system. The neurogevative symptoms of PMADs including anergia, avolition, impaired concentration, and low self-worth can feel insurmountable and can interfere with a woman's ability to advocate for her needs and seek treatment.

Treatable

Extensive literature supports the effectiveness of pharmacological and non-pharmacological interventions for PMADs. Cognitive behavioral therapy, supportive psychotherapy, brief dynamic psychotherapy, and interpersonal therapy were identified as effective modalities (Cox et al., 2016).

Evidence for Screening Tools

The screening tools most commonly used in perinatal women include the EPDS (Mcbride et al., 2014), the PDSS (Tatano Beck & Gable, 2002) and the PHQ-9 (Kroenke et al., 2001). Each has been validated to some degree for use in the perinatal population; provider or organizational preference might largely influence their use in clinical practice. The Mood Disorder Questionnaire (MDQ; Hirschfeld, 2002) is widely used to screen for BD in the general population and in recent years, evidence has emerged supporting its use in perinatal women. The tools are described followed by a review of the literature pertaining to their use.

Edinburgh Postnatal Depression Screen

The EPDS (Mcbride et al., 2014) is one of the most broadly used, most widely validated screening tools for depression in the perinatal period. This brief, self-administered screen was developed in 1987 by researchers in Scotland who recognized that existing depression screening scales did not adequately assess depression in postpartum women (Mcbride et al., 2014). The primary deficit in existing depression-screening scales was they included somatic symptoms that could suggest depression in the regular population but occurred naturally and non-pathologically in postpartum women (i.e., changes in sleep or appetite). Additionally, the existing scales were rather

extensive and time-consuming, whereas the EPDS could be completed and scored in approximately five minutes and scoring did not require specialized training in mental health issues. The EPDS was developed by integrating questions selected from existing scales (the Irritability Depression and Anxiety Scale, the Hospital Anxiety and Depression Scale, and the Anxiety and Depression Scale of Bedford and Foulds) with questions developed specifically by Mcbride et al. (2014). Extensive testing on mothers with young babies helped refine the scale into a 10-item, self-administered scale that has been widely validated for assessment of postpartum and antenatal depression (Mcbride et al., 2014).

The EPDS (Mcbride et al., 2014) consists of 10 items in which subjects are asked to rate their symptoms in the previous seven days on a scale of 0-3 (0 = *Not at all*, 1 = *Not very often*, 2 = *Most of the time*, 3 = *All of the time*). Questions are related to emotional symptoms and specifically exclude somatic symptoms common to many women in the perinatal period (changes in sleep or appetite). The 10th item specifically asks about self-harm thoughts. The most commonly used value for a positive screen is ≥13. However, some sources recommend using scores of ≥ 9 for enhanced sensitivity, arguing that given the potentially detrimental effect of missing cases of perinatal depression, false positives are preferable to false negatives. Any value > 0 on item 10 (self-harm thoughts) was considered a positive screen and required rapid intervention. Using a cutoff score of 13, a USPSTF systematic review by O'Connor et al. (2016) found sensitivity of the English-language ranged from 0.67 (95% CI, 0.18-0.96) to 1.00 (95% CI, 0.67-1.00). The same systematic review found specificity to be 0.87 across all

reviewed studies. The EPDS is available for free and published in more than 35 languages at a third to sixth grade reading level.

Items 3, 4, and 5 on the EPDS (known collectively as the EPDS anxiety subscale or EPDS-3a, Mcbride et al., 2014) inquired about symptoms associated with anxiety (blaming oneself, feeling anxious or worried, scared or panicky). Some studies validated the EPDS to screen for perinatal anxiety disorders (Swalm, Brooks, Doherty, Nathan, & Jacques, 2010), while others concluded more research was needed for validation (Evans, Spiby, & Morrell, 2015; Matthey, Fisher, & Rowe, 2013).

Postpartum Depression Screening Scale

The PDSS (Tatano Beck & Gable, 2002) is a 35-item, self-rated, Likert response scale that assesses seven dimensions including sleeping and eating patterns, anxiety and insecurity, emotional lability, cognitive impairment, loss of self, guilt and shame, and thoughts of self-harm. Women are asked to rate their symptoms in the previous two weeks on a 5-point scale. Scores range from 35-135 with scores of 60 or greater indicating significant symptoms of depression and 80 or greater indicating a positive screen for major depression. The PDSS is less widely validated than the EPDS but literature indicates it performs similarly in terms of sensitivity and specificity (Milgrom & Gemmill, 2014). The tool is published in English and Spanish at approximately a third to seventh grade reading level. It is available for purchase for $85 for 25 test forms and a scoring manual.

Patient Health Questionnaire-9

The PHQ-9 (Kroenke et al., 2001) is a brief, nine-item, self-administered screen. Questions correlate to DSM-5 (APA, 2013) criteria for a major depressive episode

including questions about interest in previously enjoyed activities; feeling of depression; changes in energy, sleep, concentration, and appetite; psychomotor agitation or retardation; low self-image; and thoughts of death or self-harm. Subjects rate symptom frequency over the previous two weeks using a Likert scale of 0-3. Total scores of 0-4 suggest minimal or no depression; 5-9 indicate mild depression; 10-14 indicate moderate depression; 15-19 indicate moderately severe depression; and scores of 20-27 suggest severe depression. The sensitivity and specificity for major depression are both calculated at 88% using a PHQ-9 score of ≥10 (Kroenke et al., 2001). The PHQ-9 has been validated for use screening for prenatal and postpartum depression, though less widely so than the EPDS. It is freely available and has been translated into dozens of languages; however, the validity of translations has not been consistently documented.

In a systematic review and evidence report for the USPSTF, O'Connor et al. (2016) found the EPDS was consistently sensitive to perinatal depression across diverse populations and languages while concluding "evidence on the accuracy of the PHQ for pregnant and postpartum women was very limited" (p. 400). Neither the evidence report nor the Task Force report specifically recommended a single screening tool but commented there was evidence that screening instruments could help identify women who needed further evaluation and treatment.

In a 2013 meta-analysis for the Agency for Healthcare Research and Quality, Myers et al. found a wide range of cutoff values and vague descriptions of testing protocols in the studies of various screening tools, leading them to conclude "the ideal characteristics of a screening test for postpartum depression, including sensitivity, specificity, timing, and frequency, have not been defined" (p. ES-22). They suggested

that initial screening with a two-item instrument (PHQ-2; Kroenke et al., 2003) followed by a second, more comprehensive screen, if indicated, might be an appropriate way to strike a balance of reducing both false positives and false negatives. Finally, they observed while more studies were needed to elucidate variables, current evidence showed the availability and accessibility of follow-up care was significantly more important than the choice of one screening tool over the other.

Mood Disorder Questionnaire

No instruments have been developed specifically to screen for BD in the perinatal period but the Mood Disorder Questionnaire (Hirschfeld, 2002) has been identified as a potentially effective tool for such screening. The MDQ is a 15-item, self-report inventory that is freely available. The screen is divided into three sections: (a) 13 yes-or-no questions, (b) co-occurring symptoms, and (c) level of functional impairment (moderate or serious). As initially validated in an outpatient psychiatric population, the tool had sensitivity of 0.73 and specificity of 0.9 (Sharma & Xie, 2011). Subsequent studies showed variation in sensitivity and specificity depending on the population in which it was used and modification or exclusion of Sections 2 and 3. Frey, Simpson, Wright, and Steiner (2012) concluded the ideal scoring algorithm during pregnancy and postpartum used cutoff scores of ≥7 and excluded the supplementary questions, resulting in sensitivity of 0.88 (95% CI, 0.70–0.98) and specificity of 0.89 (95% CI, 0.82–0.94). Sharma and Xie (2011) suggested an optimal cut-off score of ≥8 symptoms endorsed *without* the supplementary questions with sensitivity of 87.72% (95% CI: 76.32%-94.92%) and specificity of 85.29% (95%CI: 74.61%-92.72%).

Citing the common misdiagnosis of BD as MDD and the potential for worsened outcomes with inappropriate treatment, Sharma et al. (2018) proposed "changing the paradigm" (p. 27) of assessment of PPD so a diagnosis of BD must first be excluded before a diagnosis of MDD can be made. Clark et al. (2015) found that using the MDQ in conjunction with the EPDS helped differentiate unipolar depression from bipolar depression in up to 70% of women studied. However, it bears repeating that the MDQ and EPDS are both screening instruments, not diagnostic tools, and comprehensive evaluation by a mental health professional is imperative for accurate diagnoses.

Evidence for Screening Intervals

A review of the available literature did not produce any firm evidence to support specific intervals for screening. In the 2016 recommendation, the USPSTF acknowledged, "There is little evidence regarding the optimal timing for screening" and encouraged a "pragmatic approach" (Siu, 2016, p. 382). In the absence of clear evidence, organizations have adopted recommendations that range from vague (i.e., ACOG's [2016] suggestion to screen at least once during the perinatal period) to specific (AAP [Earls, 2010] recommends screening at the one-, two-, four-, and six-month visits). The latter was based on recognition that postpartum depression tended to peak at six weeks, two to three months, and six months after delivery (Earls, 2010). Yawn, Bertram, Kurland, and Wollan (2015) recommended clinicians consider screening for depression at 6- and 12-months postpartum, noting up to one in three women had elevated depression screen scores (PHQ-9 score of ≥10) at those intervals. In a study of nearly 9,000 women, Venkatesh et al. (2016) found women were significantly more likely to complete a follow-up mental health evaluation if they had a positive depression screen prior to

delivery compared to after delivery. This might reflect the fact that after birth, women are busy caring for a newborn and might have less time or energy to tend to their own health needs, thus highlighting the importance of repeated screening at different points in the perinatal period.

Evidence for Follow Up/Referral

Throughout the literature, there was consensus that screening alone had little to no effect on improving outcomes and appropriate follow up, referral to specialists, and treatment are imperative (Beck & Gable, 2001; Cox et al., 2016; Milgrom & Gemmill, 2014). Although many women might accept screening for depression, they might decline or not follow through with referral for further psychiatric evaluation and treatment; additional systems and resources are required to enhance engagement. A variety of treatment models have been developed to work in conjunction with universal screening to improve women's access to treatment, enhance continuity of care, and improve clinical outcomes. Most of these models are variations of integrated or stepped-care models, which typically deliver treatment in a step-wise fashion, starting with the least resource-intensive treatment and moving on to more resource-intensive, specialist-provided treatment as clinically indicated.

Gjerdingen, Katon, and Rich (2008) conducted a systematic review of the literature in search of the most effective interventions for improving perinatal mental health. In their findings, they described a stepped care system incorporating the following:

1. Screening and diagnosis: screening is completed using a brief, validated tool followed by clinical interview, if indicated. Patient education is provided

regarding diagnosis, treatment, and prognosis by the provider or a case manager.

2. Initiation of active treatment: psychotherapy and/or pharmacotherapy. This might be initiated by the primary care (OB) provider or referral to a specialist.
3. Specialty consultation in the primary care setting: if illness is complicated or symptoms persist despite initial treatment, consultation with a psychiatric specialist would be indicated. Ideally, this would also be completed within the primary care (OB) office.
4. Referral to specialty care: should be completed when patients have severe or persistent mental illness.

Benefits of the stepped-care model include more efficient use of resources, improved continuity, and improved clinical outcomes. Gjerdingen et al. (2008) noted women were significantly more likely to engage in treatment when it was integrated than when they were referred to a distinct office for treatment (71% vs 49%). If at all possible, they recommended specialty psychiatric care be provided on-site within the primary care (OB) setting to improve continuity of care, communication, and patient engagement. Case managers (or care managers) are integral parts of the treatment team and are able to provide close follow-up and monitoring.

In their 2013 meta-analysis, Myers et al. found completed referral rates were less than 50% except in studies where screening, diagnosis, and treatment were co-located, which resulted in "substantially higher" rates of follow up (p. 61). Venkatesh et al. (2016) also observed improved follow through when a social worker in the OB clinic

provided in-person or telephone referral to a mental health professional located within the same OB clinic. They also noted the importance of recording screening scores and follow up actions in the EMR to prompt providers to continue addressing mental health needs in future visits.

Summary of the Evidence

A review of the literature showed evidence in support of routine screening for mood and anxiety disorders during pregnancy and postpartum. Professional and governmental screening recommendations focused almost exclusively on depression (and to a smaller extent anxiety) with very little discussion of BD. From a psychiatric and public health perspective, this might be a dangerous oversight and some experts proposed a paradigm shift to prioritize screening for bipolar spectrum disorders. Merrill et al. (2015) noted that initiatives to improve screening for perinatal depression might "inadvertently lead to misclassification if there was no simultaneous screening for bipolar disorder" (p. 579). Women with BD who experience symptoms during pregnancy often present with depressive or mixed symptoms in early pregnancy; without appropriate diagnosis and mood stabilizing treatment, they are at risk for being treated with antidepressant monotherapy (Merrill et al., 2015). Use of antidepressants in BD without appropriate mood stabilization could precipitate hypomania, mania, rapid cycling, and psychosis, and might increase the risk of suicide or psychosis (Sharma & Xie, 2011). Sharma, Khan, Corpse, and Sharma (2008) reported that more than half of patients with depressive episodes in the postpartum period actually had BD, suggesting onset of depressive symptoms during or after pregnancy might represent a bipolar diathesis.

At this time, evidence supports use of the EPDS (Mcbride et al., 2014) for routine screening of perinatal depression but does not necessarily rule out use of other validated screening tools (PHQ-9, PDSS). In the absence of clear, overwhelming evidence in one direction or the other, it would be reasonable to take into consideration professional organizational recommendations, provider preferences, and available resources when choosing a depression-screening instrument. To date, the MDQ (Hirschfeld, 2002) has the most evidence to support its use as a screen for BD in pregnant and postpartum women. Evidence supports use of the EPDS and MDQ together for enhanced detection of bipolar and major depressive disorders. There is no clear evidence on the optimal intervals at which screening should be completed but consensus is that screening should be provided at least once during pregnancy and several times during the first year postpartum. Beyond simply identifying women experiencing or at risk for PMADs, routine screening provides an opportunity to discuss risk factors, to educate, and to normalize women's experiences.

Throughout the literature echoed the consistent refrain that screening does not equal diagnosis and screening alone does not improve outcomes. Prompt evaluation by a qualified mental health professional is essential for accurate diagnosis, treatment initiation, and follow-up. Careful clinical assessment is imperative to differentiate unipolar MDD from BD because incorrectly applied treatment could be detrimental. The stepped care model and co-location of mental health services in the OB setting were identified as ways to optimize mental health treatment in the perinatal population.

CHAPTER III

DOCTOR OF NURSING PRACTICE PROJECT DESIGN AND METHODOLOGY

The purpose of the DNP scholarly project was to develop a guide for screening, referral, assessment, and treatment of PMADs. This project began by engaging stakeholders in a productive, ongoing dialogue and involving them in development of a guide that could be used by primary care providers (OB, certified nurse-midwives, family practice, pediatrics) to ensure women were being consistently screened, referred, and treated, and followed appropriately. This guide recommends (a) a screening instrument, (b) screening intervals, (c) screening and documentation methods, (d) specific clinical actions to be taken for certain cutoff scores, and (e) a method for transferring care and assessing follow up once risk or symptoms had been identified. Developing this project also provided opportunities for education of clinical and non-clinical staff including brief in-services, question-and-answer sessions, and distribution of printed materials.

Implementation of the guide will occur outside the scope of this scholarly project as it will require approval and logistical support from Kootenai Health (2018) administration. Developing a referral destination might take up to a year including time to recruit, hire, and onboard appropriate staff. Implementation of the final guide will likely begin with the obstetric practice affiliated with the community hospital (including obstetricians and certified nurse midwives) and expand over time to include other local OB providers, primary care, and pediatric practices.

Stakeholders included providers, nursing, clinical, and administrative staff at Kootenai Health (including the Family Birthing Center, Kootenai OBGYN, and Kootenai Outpatient Psychiatry), Heritage Health/Family Support Services, Coeur d' Alene Pediatrics, Lakeside Pediatrics, and other local, independent OB providers.

Project Design and Method

This project was a non-experimental field study. The Delphi method was used to solicit opinions, experiences, suggestions, and concerns of stakeholders. Institutional Review Board (IRB) approval was granted by the University of Northern Colorado with the project classified as "exempt" (see Appendix A); each round of Delphi survey questions was approved separately. The Kootenai Health Nursing Research Coordinator authorized this author to distribute the survey to several Kootenai Health employees at their institutional "kh.org" emails (see Appendix B). Invitations to participate in the study were sent to participants' personal or work emails depending on their preference. The introductory email included a brief description of the project and its objectives, language about informed consent to participate and associated risks/benefits, and a link to the online platform SurveyMonkey. No risks or ethical considerations were identified with this field study. No identifiable patient information was exchanged and data were kept on a password-protected computer in a locked office. Anticipated barriers to implementation and engagement included individuals' reluctance to participate in the survey, primarily concern for survey fatigue or time constraints. To improve engagement, the surveys were brief, succinct, and easy to complete.

The initial round of the Delphi study used multiple choice and open-ended questions to query participants' demographics, comfort/familiarity with various screening

tools, current clinical practices, and perceived needs (see Appendix C for consent form and Delphi questions). The second round of the Delphi study presented themes that had emerged in the first-round responses and asked participants to approve or reject specific steps in a proposed guideline. Seven individuals participated in the first round of the Delphi study and six completed the second round. Based on feedback from the initial survey and supported by evidence in the literature review, the EPDS (Mcbride et al., 2014) was proposed as a screening instrument and was embedded in the survey for participants to review (see Appendix D). Participants were asked to approve its use, along with recommended screening intervals, methods for recording and communicating scores, actions clinicians should take based on scores, and methods for referral and follow up.

Results from the second round Delphi survey were adapted into a flowchart (see Appendix E) intended for use by emergency department and OB clinicians. A supplementary guideline was developed to provide users with background information, evidence underlying the recommendations, talking points, and additional resources (see Appendix F).

Project Evaluation Plan

The stated primary objective of this scholarly project was to develop a guide to improve the mental health care provided to women in Kootenai County (n.d.) during the perinatal period. Evaluation of the project, which will focus on assessing how effectively this guide serves the needs of the community, will occur outside the scope of the DNP project after the guide had been implemented in the outpatient OB clinic.

A group of providers, OBs and certified nurse-midwives in the Kootenai Health (2018) outpatient OB clinic will be asked to utilize the guide. Evaluation will occur after one to two weeks; however, depending on patient population characteristics (i.e., very few pregnant or postpartum women being see during those weeks), this timeline will be extended to collect sufficient data. Evaluation will occur primarily through chart review (with the assistance of the practice's clinical coordinator) and face-to-face discussion with providers. Charts will be selected for review if they belong to a pregnant or postpartum woman seen by a participating provider within the designated screening times and will be assessed for use of an appropriate screening tool, documentation of a score, and documentation of any subsequent actions for treatment or referral. Discussion with providers will focus largely on their perceptions of the guide and its clinical application, and solicitation of any feedback they might have to improve its efficacy. Other clinical and non-clinical staff members will also be interviewed to solicit their feedback about processes (i.e., a nurse making referrals to mental health offices might have valuable insights to improve workflow). Finally, providers in the receiving mental health offices will be interviewed about their experiences receiving patient referrals from the OB offices and asked to provide feedback to help refine the process.

Timeline

- March 2019: DNP scholarly project proposal submitted
- April 2019: Scholarly project proposal defended
- June 2019: Received University of Northern Colorado Institutional Review Board (IRB) approval (see Appendix A)

- June/July 2019: First round Delphi study conducted (see Appendix C); results synthesized
- September 2019: Second round Delphi study conducted (see Appendix D), results synthesized, guide finalized
- October 2019: final scholarly project defended
- Fall 2019—onward: continue development of mental health integration

Resources

Few monetary expenses were incurred for development of this scholarly project. Paper, printer cartridges, and additional office supplies were the primary expenses and were purchased by this author. The online platform SurveyMonkey was used to disseminate the Delphi study and the author paid for the subscription. Participants graciously donated their time to respond to the study and participate in follow-up discussions.

CHAPTER IV

DATA ANALYSIS AND RESULTS

The Delphi method was used to solicit the opinions, experiences, suggestions, and concerns of stakeholders. Participants included OB providers, mental health providers, therapists, and clinical social workers. Most of the participants were employees of Kootenai Health and Heritage Health. One was a certified nurse midwife (CNM) from a local OB practice and one was an employee of Bonner General Hospital, a critical access hospital located approximately 45 miles north of Kootenai Health. Kootenai Health administrative staff members were invited to participate but did not. Stakeholders were sent an email link to the survey using the online platform SurveyMonkey. Information about privacy practices and informed consent to participate were embedded in the invitation email as well as the introduction page on the survey website. The first survey was available online from June 22 through July 22, 2019. Participation was lower and slower than anticipated, possibly due to the summer vacation season. The surveys included multiple choice and open-ended questions. The first and second round Delphi questions are attached in Appendices C and D, respectively. Responses were kept confidential.

Delphi Round One Questions

The first Delphi study solicited demographic information and asked broad questions to survey the current/local healthcare landscape and assess perceived need. Seven individuals participated in the first round. The first question asked: “What is your

role?" Table 3 presents the responses participants gave regarding their role within the organization.

Table 3

Role of Participants

Role	*N*	%
Administrative	0	0
OB provider: CNM	1	14.29
Mental Health Provider: Psychiatrist, NP	3	42.86
Social Worker	2	28.57
Therapist	1	14.29
RN	0	0
Other	0	0

Note. One participant, a CNM, inadvertently identified herself as a mental health provider. If corrected, two participants were OB providers (28.57%) and two were mental health providers (28.57%).

The second question asked: "Do you encounter PMADs in your professional role? –either directly, providing patient care, or indirectly, in developing systems/programs." Six respondents (85.71%) answered "Yes" and one (14.29%) participant responded "No." Estimated frequencies given by the participants were "at least twice a week," "approximately 10 patients annually," "several patients monthly, between 3-5," "1-2x month," and "I would say at least 60% of our pregnant patients have some sort of PMAD."

The third question asked: “Are you (or your organization) currently using any sort of guideline/protocol in clinical practice with regards to PMADs?” The majority of respondents (4; 57.14%) indicated their organization did not consistently use a clinical guideline or protocol for screening and referral of PMADs. Among respondents whose offices/organizations used a screening protocol, there was variability and little detail was provided. One respondent (OB provider) described “q trimester screening, and have a protocol for follow up when patients screen positive. Depending on severity, follow up may include additional visits with CNMs, social work, psychiatry, and or/behavioral health.” A mental health provider responded:

> EPDS is provided in the OBGYN clinic at each post-partum visit, prior to referral to this office. Protocols for referral and treatment to psychiatry are being developed currently. Primary issue at this time is that 50% of referrals to outpatient psychiatry from OBGYN do not show up for appointment or will not schedule. Are working towards some type of imbedded role within OB clinic. Also, desperately need social work/case management role to manage this population in order to improve access and adherence to treatment.”

A social worker wrote:

> I am unsure of the protocol but as a [social worker] on [labor and delivery/postpartum] (6 years ago) we were using screening tools. On psychiatric, I am unaware that the [emergency department social work] triage staff or the therapists [inpatient] use any.

The fourth question asked: “Are you (or your organization) currently using a formal instrument to screen for PMADs?” Fewer than half the respondents (3; 42.86%)

indicated they were using a formal instrument to screen for PMADs. One was unsure which instrument was being used; one was using the EPDS, and one was using the PHQ-9 and noted: "I dislike that it is not pregnancy specific, but I like that you can follow it throughout the patient's care even after the perinatal period."

The fifth question asked: "What would you like to see in a guideline for screening and treatment of PMADs? (select as many as apply)." This question—which asked respondents to choose what they would like to see in a guideline for screening/treatment of PMADs—should have been published as "select all that apply." However, due to the author's error, the survey only allowed participants to select one answer. Two respondents (28.57%) identified "recommended screening tools," another two (28.57%) chose "recommended actions for positive screens," two (28.57%) chose "referral destinations for patient follow up," and one (14.29%) selected "suggested talking points to discuss with patients." Two commented that the question should have been "select all" and one requested "a more streamlined method for getting patients scheduled/ or invested in follow-up […] more community therapists able to work with this population [and] case management role would be very helpful."

The sixth question asked: "What is your current referral process for women who need more specialized mental health treatment?" Free-text responses included: "[social work] staff calling around to see who can take new patients," "referral to our clinics mental health department," "referrals are sent from the OB clinic to the Outpatient Psychiatry clinic. Phone consult also available between providers." Other processes mentioned were "referral to generalized counseling services" and "referral to local providers, who are overbooked." One respondent, an OB provider in a metropolitan area,

wrote: “We refer within our system (Kaiser) if resources are available, or to our local lactation support center that includes a specialized perinatal mood disorder division.”

The seventh question asked: “In your professional experience, what proportion of women who need specialized mental health treatment receive adequate treatment/services?” Figure 1 provides participants’ responses regarding proportions of women who needed specialized mental health treatment and actually received it.

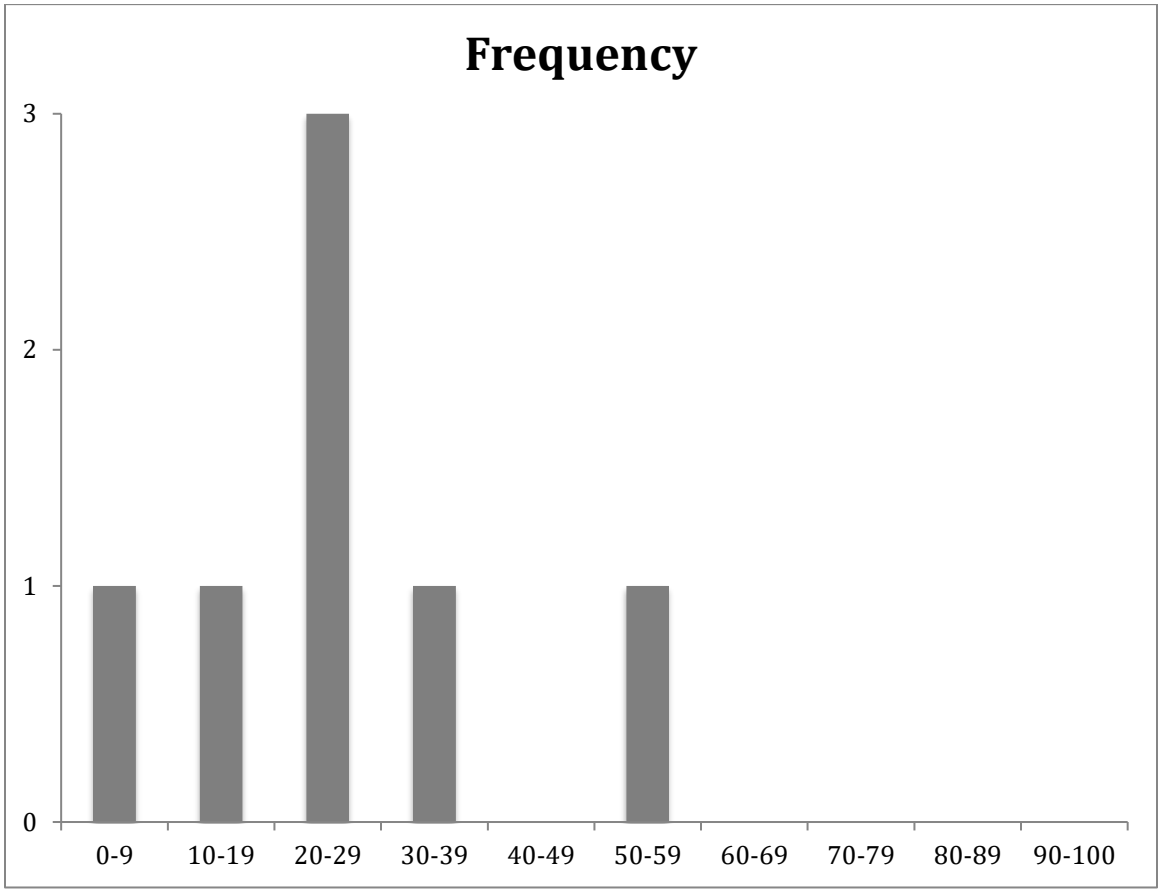


Figure 1. Proportion of women who needed and received specialized mental health treatment.

The eighth question asked: "From your perspective, what are barriers to the screening/assessment/referral/treatment of PMADs in our community?" Seven participants identified a generalized lack of mental health resources (therapists, providers, case managers) as well as a lack of specialty resources for this vulnerable population. One mental health provider noted: "Stigma seems to prevent women from coming to the outpatient psychiatry clinic, and our OB's have stated that they feel the engagement rate would increase with an imbedded provider." One social worker identified a "lack of inclusion in standards or care and metrics" as a barrier.

The ninth question asked: "From your perspective, what would most improve the care of PMADs in our community?" Participants provided the following responses:

- "Available psychiatric providers and skilled therapeutic clinicians."
- "Resources that include a team of counselors, NP and support groups for just PMAD."
- "Medical and mental health provider education; access to recommended assessment/screeners; referral resources."
- "An actual program with protocols and support from the organization."
- "Encouraging providers to have conversations and ask about symptoms, educating patients on what to look for and normalizing how they feel."
- "Improved education of providers, improved screening and improved availability of resources for those in perinatal period. Lytle Center in Seattle is an example of a good start."
- "In-house specialized mental health providers, dedicated perinatal social worker (we used to have one and now only have generalists that serve the

entire campus and don't have specialized knowledge of perinatal-related resources."

The final question asked: "Do you have any other questions, suggestions, or concerns?" The only additional suggestion (from an OB provider) was to provide a list of medications that might be indicated by various symptoms. She noted some providers "sometimes feels like [we] just use what [we are] most comfortable prescribing."

Analysis of the open-ended questions revealed consistent themes including a general consensus that there was a global lack of resources to identify and support women at risk for PMADs. Respondents indicated institutional changes are necessary to improve mental health care for this population. Participants supported standardized use of validated screening tools and data analytics, enhanced systems for referral, and development of dedicated perinatal mental health services. Based on responses from the first survey and using published algorithms as a guide (Puryear, 2018; UNC, 2016), a second round of Delphi questions was developed asking participants to approve or reject individual steps in a proposed guideline. The survey comprised 16 discrete steps and the final item was a free-text field asking for questions, comments, and suggestions. The second round of Delphi questions was submitted to the University of Northern Colorado's IRB on August 6, 2019, and was approved on September 6, 2019. The survey was sent to the seven participants who had completed the first round and again included information about informed consent, privacy practices, and a link to the online platform SurveyMonkey (see Appendix D). The survey was available from September 10, 2019, until September 25, 2019. Six individuals completed the second round.

Delphi Round Two Questions

Delphi round two consisted of 16 discrete questions pertaining to the appropriate screening instrument (question 1), appropriate screening intervals (questions 2 and 3), screening method and recording results in the medical record (question 4), whether the emergency department's clinician judgment should be used to determine whether the patient met criteria for admission and if admission was the most appropriate intervention (questions 5 through 9), methods of transferring care (questions 10 through 13), and the ideal integrated mental health model (questions 15 through 16). The final item (question 17) was a free-text field asking for questions, comments, and suggestions. All six participants indicated approval of all 16 discrete questions except for one non-response to question 11. One participant made the following comment in the free-text field: "This is an invaluable service to the families in this community. Thank you."

CHAPTER V

DISCUSSION

Summary

This project began—as many do—with personal interest in a topic. The author had been interested in women's mental health issues for several years and during her first pregnancy became more acutely aware of the lack of local resources for PMADs. This DNP scholarly project emerged as an ideal vehicle to transform a personal interest area into an actionable, evidence-based intervention. Over the course of her DNP studies, this author's knowledge of healthcare systems, population-based healthcare, leadership strategy, and policy development expanded dramatically and she became increasing passionate about directing her energy and skills into the project.

As the project took shape, this author immersed herself in the subject matter. She progressed from casually reading articles and watching webinars to undertaking a comprehensive review of the literature and an appraisal of the evidence. The author developed a deeper understanding of the background and significance of PMADs including their risk factors, prevalence, controversies, and impacts. She identified recommended best practices and analyzed the evidence to support them. She confirmed—first through informal conversations and later through a formal, IRB-approved Delphi study—that PMADs were under-detected and undertreated in her local healthcare system and that there was an urgent need in the community for an improved system of care.

This author used a Delphi study to build consensus across an expert panel of stakeholders including OB providers, mental health providers, and social workers. She synthesized evidence from the literature review to propose a guideline and model of care to improve the detection, treatment, and follow up of PMADs in the community. The guide met each objective outlined in Chapter III including identifying (a) an appropriate screening instrument, (b) appropriate screening intervals, (c) screening methods and processes for recording results in the medical record, (d) specific actions the clinician should take based on pre-established cutoff scores, and (e) a method for transferring care and assessing follow up once risks or symptoms had been identified. Finally, an integrated mental health model was proposed, wherein a social worker and/or PMHNP would be embedded in the outpatient OB clinic to improve access and continuity of care. The expert panel unanimously approved each step in the guide and affirmed the need for ongoing advocacy, investment of resources, and process refinement.

Limitations

This project was completed largely within the KH organization, initially with the hope the resulting guideline would be implemented into clinical practice. However, the academic and organizational timelines were asynchronous and as of the time of the scholarly project defense, the actual implementation remained theoretical and could not be evaluated *in situ*. As of late 2019, Kootenai Health leadership was considering strategic development goals for 2020 and exploring funding and staffing needs. The author and stakeholders remain optimistic the New Year will bring new opportunities for growth and improvement.

No single formula in the literature delineated an "ideal" way to approach PMADs from a population perspective. There are wide variations in current clinical practice across communities, states, and the nation. There are multiple screening instruments, possible screening intervals and methods, and various systems for follow up, each of which might be influenced by provider preference, organizational culture, and available resources. This guide was designed specifically for use by KH ED staff and OB providers who deliver just over half the babies in Kootenai County annually (53%; personal communication with Megan Smith, OB nurse manager, July 2018).

Obstetrics providers from several other local practices had expressed interest in the subject and would benefit from sharing the guide with minor adaptations in the referral process (they would likely not have the patient volume to warrant embedding a mental health provider in their offices but would like to refer patients to the case manager or PMHNP in the Kootenai OBGYN office). That embedded mental health provider could also become a potential referral destination for local pediatrics offices, some of which currently screen postpartum mothers but struggle to link women with positive screens to appropriate treatment (personal communication with Haley Buhl, pediatric nurse practitioner, November 2018). Establishing an expedited referral process to mental health clinicians at Heritage Health and Family Support Services would help expand available resources and streamline care, especially in the future if demand within the OB office exceeds available clinical time or if women need ongoing mental health services after the first year postpartum.

This project did not address specific treatment recommendations (medications or therapy modalities, for example) and the recommended screening instrument was

indicated primarily for depression and anxiety. Screening for mania, hypomania, and psychosis was not directly addressed in the guide; further refinement based on feedback and experience will be necessary once the guide is implemented.

Recommendations

Throughout the literature review process and the Delphi study, it was evident inadequate mental health services were available across the nation and the author's community. In recent years, improved advocacy has led to better legislation and increased funding for PMAD-related issues but there is still much work to be done. The demand for funding, high-quality research, education, and services should continue to intensify. Kootenai Health and other local organizations should pursue grant funding and improved insurance reimbursement and should direct their strategic planning to develop a robust perinatal mental health program.

Once funding has been approved, a PMHNP and/or case manager should be embedded within the OB clinic and the guideline should be implemented promptly. Evaluation should be ongoing to ensure that processes are as smooth and effective as possible. Staff across practice setting should be offered continuing education to help them improve their knowledge bases and comfort levels in relation to PMADs. The author and other stakeholders would need to stay up-to-date with emerging evidence through ongoing education, literature review, and peer consultation.

Because postpartum depression tends to peak at six weeks, two to three months, and six months after delivery (Earls, 2010), additional screening should be considered beyond the six-week postpartum follow-up visit. In current practice, the six-week follow-up visit is often the last contact a woman would have with her OB provider until

her next annual exam or next pregnancy. The American College of Obstetricians and Gynecologists (2018) recommended a shift in the delivery of postpartum care, encouraging more frequent follow up and increased attention to emotional wellbeing. As local OB providers adapt their practices, screening intervals could be modified to reflect community needs. Coordination with local pediatric providers will be vital as they tend to have frequent contact with parents during the child's first year of life.

Additional areas for expansion include community education sessions, support groups, peer support programs, and patient education sessions that could be offered pre-conception, during pregnancy, on the OB unit, and at postpartum follow up. On a larger scale, Idaho should begin to participate in the Pregnancy Risk Assessment Monitoring System (PRAMS), a program developed in 1987 as a collaboration between the Centers for Disease Control and Prevention (CDC; 2019) and state departments of health to reduce perinatal mortality. A population-based surveillance system, PRAMS identifies groups of women and babies at risk and monitors health status, identifies emerging issues, and evaluates policies focused on improving infant health. Data are collected on prevalence of depression before, during, and after pregnancy but, unfortunately, Idaho is one of only three states that does not participate in PRAMS (CDC, 2019). Joining PRAMS would help leaders improve health policy and better allocate resources for women and infants in the state.

Developing a Clinical Practice Guideline

While the guide developed through this scholarly project was not truly a "clinical practice guideline," which would have had a significantly broader and deeper scope, some of the principles and practices of clinical practice guideline development were

employed in this project. This approach helped this author structure her project to effectively translate evidence into clinical practice.

The Institute of Medicine (Rosenfeld & Shiffman, 2009) identified seven criteria for identifying priority in guideline development including disease burden, controversy, cost, new evidence, potential impact, public or provider interest, and variation in care. Most of these criteria pertained to the screening and treatment of PMADs.

- Disease burden**.** Perinatal mood and anxiety disorders are prevalent and serious; they are one of the most common complications of pregnancy/childbirth and result in significant impairment, mortality, and morbidity (Earls, 2010; O'Hara & Wisner, 2014). Estimates of prevalence in Kootenai County were consistent with national data; yet, the region has lower-than-average access to specialized mental health treatment, resulting in under-detection and under-treatment (Mental Health America, 2018).
- Cost**.** The economic impacts of PMADs are significant and include direct healthcare costs as well as indirect costs from lost wages, diminished productivity, and increased healthcare utilization related to comorbid conditions (Greenberg et al., 2015; Kessler, 2012).
- New evidence**.** Emerging evidence indicates standardized screening for PMADs could improve outcomes when paired with appropriate systems for follow up and management (Beck & Gable, 2001; Cox et al., 2016; Milgrom & Gemmill, 2014). In the past decade, integrated and stepped-care models have been shown to optimize utilization of valuable mental health resources

while improving the quality of care available to vulnerable populations (Gjerdingen et al., 2008)

- Potential impact**.** Improving the detection and treatment of PMADs has the potential to improve the health of not just the mother but also her child(ren), partner, extended family, and community. Early intervention might help minimize or avoid potentially devastating outcomes (Hoffman et al., 2017; Seymour et al., 2014). A standardized guideline might help improve the efficiency and quality of services available to a vulnerable population.
- Public or provider interest**.** Recent years have seen a groundswell of awareness of PMADs. Providers and consumers alike recognize the need for improved systems for healthcare delivery. Local stakeholders in Kootenai County have requested evidence-based recommendations to guide patient care and systems-level decision making.
- Variations in care**.** Significant differences exist in the detection and management of PMADs across practice settings (Evans et al., 2015). Professional organizations offer vague recommendations but do not clearly define clinical pathways or interventions. A well-designed guide would help reduce variations in care and improve the overall quality of care.

Once an appropriate topic has been identified, use of a standardized method facilitates guideline development. Shekelle, Woolf, Eccles, and Grimshaw (1999) identified five steps integral to the development of evidence-based guidelines including (a) identifying and refining the subject area, (b) convening and running guideline development groups, (c) assessing evidence identified by systematic literature review, (d)

translating evidence into recommendations, and (e) subjecting the guideline to external review.

In this scholarly project, the author identified and refined the subject area (step 1) during the early stages of the endeavor, roughly corresponding to Phase I: Preparation of the Stetler (2001) theoretical framework. As noted in Chapter II, this stage involved identifying the problem, defining the purpose and outcomes of the project, affirming priorities, and beginning an initial review of sources of information.

This project did not utilize guideline development groups (step 2) but did engage stakeholders in the development of the guide through ongoing discussion and through the Delphi studies. The third step, assessing evidence identified by systematic literature review, corresponded to Stetler's (2001) Phase II: Validation. A comprehensive review of the relevant literature was undertaken at the beginning of the scholarly project and continued during its development. The fourth step, translating evidence into recommendations, corresponded to Stetler's Phases III: Comparative Evaluation & Decision-Making and IV: Translation/Application. This was accomplished through use of the Delphi study to assess stakeholders' current practices, perceived needs, barriers, and available resources. High-quality evidence identified in the literature review was translated into a clinically relevant guide that fit the needs of the target population.

The final step, subjecting the guideline to external review, was partially accomplished in Round 2 of the Delphi study, wherein participants were asked to approve or reject 16 steps of the proposed guideline. Further external review will be completed if/when the guide is implemented in the organization. This would correspond to Stetler's

(2001) Phase V: Evaluation, and would include discussion with stakeholders, chart audit, and case review.

Reflections on Doctor of Nursing Practice Education

The AACN (2006) described the Doctor of Nursing Practice degree as the "practice-focused" terminal degree of nursing education (p. 3). Rather than generating knowledge or developing theories as their Ph.D. colleagues might, the skill of the DNP-prepared nurse lies in his/her ability to translate evidence into clinical practice, to synthesize data, and to apply it constructively and collaboratively to improve systems and practices with the goal of improving the health of individuals and populations.

In their 2006 document entitled *The Essentials of Doctoral Education for Advanced Nursing Practice*, the AACN detailed eight core competencies of DNP education and practice. These, in conjunction with specialized clinical content established by national specialty nursing organizations, form the two major components of DNP curricula. The congruence of the author's DNP education at the University of Northern Colorado (UNC) and her scholarly project with those essential components are discussed below. The scholarly project's success was evaluated using the acronym EC as PIE (enhance, culmination, partnership, implement, and evaluation), which has been adopted as a standard rubric for measuring the quality of DNP scholarly projects.

Essentials of Doctoral Education for Advanced Nursing Practice

Essential I: Scientific Underpinnings for Practice

The DNP curriculum at UNC involved rigorous studies across the natural and social sciences. Coursework included statistics, epidemiology, population health management, healthcare finance, leadership, health policy, and nursing theory. The scholarly project incorporated evidence and knowledge from multiple sources and specialty areas. By undertaking a comprehensive review of literature, the author developed a deeper understanding of the etiology and treatment of PMADs as well as social factors that influence the delivery of health care.

Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking

Through her leadership courses and practicum, the author had the opportunity to learn about local healthcare systems and effective leadership strategies. This knowledge prepared her to more effectively propose changes. She also formed professional relationships during the practicum that helped facilitate discussions during the project development phase.

Developing the scholarly project required the author to step outside her familiar role as a direct provider of healthcare into a position where her focus expanded to the entire community. This shift was challenging—and at times uncomfortable—but provided invaluable learning experiences. A shortage of qualified perinatal mental health providers exists and developing more efficient systems within existing organizations

would be the most efficient and sustainable way to improve the quality of care and expand access.

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

Translation of evidence into action is the foundation of advanced nursing practice. Courses in epidemiology, research methods, and statistics prepared the author to assess and synthesize evidence and to apply it to clinical practice. The author used critical thinking, a comprehensive literature review, and data analysis to assess needs, identify best practices, and develop a guide to improve patient-centered care. She proposed methods for ongoing collection of evidence to further refine interventions and improve outcomes.

Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care

The author displayed proficiency using a web-based survey platform to collect and synthesize data. She used online databases to search for relevant literature. The author expanded her familiarity with Kootenai Health's electronic health record (EHR) and identified ways in which data could be more accurately collected and managed.

Essential V: Health Care Policy for Advocacy in Health Care

The delivery of healthcare is influenced by policies on organizational, local, state, and national levels and DNP-prepared nurses are well qualified to effect change on each of those levels. The UNC healthcare policy courses provided the author with a solid understanding of how policies are developed and prepared her to advocate for change.

This scholarly project sought to influence policy on the organizational level, specifically by advocating for expanded allocation of resources to benefit a vulnerable population. The author also mobilized local stakeholders to advocate on behalf of their clients for additional mental health services.

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

Perinatal mental health sits at the confluence of mental health, women's health, primary care, and pediatrics. This scholarly project required collaboration across different healthcare specialties and settings—from outpatient OB to labor and delivery, from the emergency department to psychiatry. The author participated in collaborative meetings with OB, mental health, primary care, and pediatric providers, as well as Kootenai Health leadership, and helped facilitate communication across specialty areas. Apart from the scholarly project, she was able to provide an educational in-service to community midwives and OB providers and phone consultation for OB and mental health providers. She has been working with the labor and delivery unit to develop an educational video that all mothers will watch before being discharged from the hospital.

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

The primary purpose of this scholarly project was to develop a comprehensive guide to improve mental health care provided to women in Kootenai County during the perinatal period. The DNP-prepared nurse is ideally positioned to enact population-level interventions, which is critical in the field of mental health given the global shortage of specialists, and this need is even more pronounced in the specialty area of PMADs. The

University of Northern Colorado's DNP curriculum prepared the author to evaluate current care delivery models and synthesize findings from current literature and the local community into a framework that would improve the quality of care for an underserved, vulnerable population.

Essential VIII: Advanced Nursing Practice

The University of Northern Colorado's DNP curriculum provided the author with new educational (and eventually professional) opportunities. After completing advanced practicum clinical hours at KH in the first year of the program, she was invited to join the organization full-time. Her clinical skills sharpened with immersion in new healthcare settings and eventually the DNP program challenged the author to expand her focus from providing direct patient care to developing systems-based interventions. She has immersed herself in a specialty area and has had the privilege of being a preceptor to nurse practitioner students. She has also had the opportunity to provide PMAD education to colleagues across the community. Through the course of study, the author has developed the clinical judgment, analytical skills, and ability to work collaboratively, which are the hallmarks of advanced practice nursing.

Enhance, Culmination, Partnership, Implement, and Evaluation

Waldrop, Caruso, Fuchs, and Hypes (2014) proposed "EC as PIE" as a method of evaluating "whether a DNP final project meets the outcomes of the AACN's *Essentials of Doctoral Education in Advanced Nursing Practice*" (p. 300). The authors noted that with the proliferation of DNP programs since 2006—and wide variations in curricula and academic rigor—it is imperative to ensure the DNP graduate has truly met the outcomes

established by the AACN (2006). The acronym EC as PIE represents five criteria that must be met by a DNP scholarly project.

- E = *Enhance* health outcomes, practice outcomes, or health policy. The author evaluated current practices and found that screening, referral, treatment, and follow up of PMADs in her community were inconsistent, resources were inefficiently distributed, and patient outcomes were adversely impacted. The scholarly project proposed comprehensive changes to improve the quality and consistency of care to improve outcomes across practice settings.
- C = Reflect a *culmination* of practice inquiry. During development of this scholarly project, the author immersed herself in the subject matter from clinical and systems perspectives. She undertook advanced training and became certified as a perinatal mental health provider through Postpartum Support International. She gained a deep and broad understanding of historical issues, best practices, scientific developments, and legislative efforts in the field and used this knowledge to effect change.
- P = Require engagement in *partnerships*. The author collaborated with stakeholders across the community from diverse backgrounds including direct healthcare providers, healthcare administrators, and consumers. She found many colleagues had been personally impacted by PMADs and were fiercely supportive of the project.
- I = *Implement*/apply/translate evidence into practice. The author first gathered evidence through the literature review process and then synthesized

it into a recommended plan of action that fit the needs of the local community.

- E = Require *evaluation* of health care, practice, or policy outcomes. The initial stages of this scholarly project involved evaluating the current processes for screening, referral, treatment, and follow up of PMADs. The author has proposed a method of ongoing evaluation once the proposed guide/practice model is implemented.

Conclusion

Perinatal mood and anxiety disorders are serious, prevalent, and treatable but under-detection, exacerbated by inadequate/inefficient use of resources, has resulted in many women not receiving appropriate treatment. Improved systems for screening, detection, referral, treatment, and follow up of women with or at risk for PMADs are imperative to protect the health of women, their children, families, and communities. This scholarly project examined current literature to identify best-practices and proposed a model of care to improve health outcomes across a community. This author built support for her project and formed a coalition of mental health and OB professionals who continue to work collaboratively to enhance the quality of care in Kootenai County. Ongoing work is needed to implement and evaluate the guide and to expand services to further match the community's needs.

The DNP-prepared nurse is able to adapt to the ever-changing healthcare landscape and is uniquely qualified to effect change across varied and complex settings. This project embodied the integration of scholarly interest, clinical expertise, and advanced nursing practice. As she transitions from student to graduate, this author will

continue to hone her skills, expand her knowledge base, and collaborate across the spectrum of care to improve the mental health of women, children, and families in her community.

REFERENCES

AAP News. (2016). *CPT code changes for health risk assessments take effect Jan. 1.* Retrieved from https://www.aappublications.org/news/2016/11/04/Coding110416

Agency for Healthcare Research and Quality. (2018). *Guideline and measure summaries*. Retrieved from https://www.ahrq.gov/gam/summaries/index.html

American Association of Colleges of Nursing. (2006). *The essentials of doctoral education for advanced nursing practice.* Retrieved from http://www.aacn.nche.edu/publications/position/DNPEssentials.pdf

American College of Obstetricians and Gynecologists. (2016). *ACOG committee opinion: Screening for perinatal depression.* Washington, DC: Author.

American College of Obstetricians and Gynecologists. (2018). *ACOG postpartum toolkit.* Retrieved from https://www.acog.org/-/media/Departments/Toolkits-for-Health-Care-Providers/Postpartum-Toolkit/2018-Postpartum-Toolkit.pdf?dmc=1&ts=20190124T2050247724

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Austin, M. (2014). Marcé International Society position statement on psychosocial assessment and depression screening in perinatal women. *Best Practice & Research Clinical Obstetrics & Gynaecology ,28*(1), 179-187. doi:10.1016/j.bpobgyn.2013.08.016

Beck, C. T., & Gable, R. K. (2001). Comparative analysis of the performance of the postpartum depression screening scale with two other depression instruments. *Nursing Research, 50*(4), 242-250. doi:10.1097/00006199-200107000-00008

Briley, M., & Lepine, J. (2011). The increasing burden of depression. *Neuropsychiatric Disease and Treatment, 7*(1), 3-7. doi:10.2147/ndt.s19617

Brummelte, S., & Galea, L. A. (2016). Postpartum depression: Etiology, treatment and consequences for maternal care. *Hormones and Behavior, 77*, 153-166. doi:10.1016/j.yhbeh.2015.08.008

Centers for Disease Control and Prevention. (2019). *Depression among women*. Retrieved from https://www.cdc.gov/reproductivehealth/depression/index.htm

Charatan, F., Eaton, L., & Eaton, F. (2002). Woman may face death penalty in postnatal depression case. *BMJ, 324*(7338), 634-634. doi:10.1136/bmj.324.7338.634

Clark, C. T., Sit, D. K., Driscoll, K., Eng, H. F., Confer, A. L., Luther, J. F., … Wisner, K. L. (2015). Does screening with the MDQ and EPDS improve identification of bipolar disorder in an obstetrical sample? *Depression and Anxiety, 32*(7), 518-526. doi:10.1002/da.22373

Cox, E. Q., Sowa, N. A., Meltzer-Brody, S. E., & Gaynes, B. N. (2016). The perinatal depression treatment cascade. *The Journal of Clinical Psychiatry, 77*(9), 1189-1200. doi:10.4088/jcp.15r10174

Diaz, J., & Chase, R. (2010, October). *Cost of untreated maternal depression*. Retrieved from https://www.wilder.org/wilder-research/research-library/cost-untreated-maternal-depression

Earls, M. F. (2010). Incorporating recognition and management of perinatal and postpartum depression into pediatric practice. *Pediatrics,126*(5), 1032-1039. doi:10.1542/peds.2010-2348

Evans, K., Spiby, H., & Morrell, C. J. (2015). A psychometric systematic review of self-report instruments to identify anxiety in pregnancy. *Journal of Advanced Nursing*, *71*(9), 1986–2001. doi:10.1111/jan.12649

Evans, M. G., Phillippi, S., & Gee, R. E. (2015). Examining the screening practices of physicians for postpartum depression: Implications for improving health outcomes. *Womens Health Issues,25*(6), 703-710. doi:10.1016/j.whi.2015.07.003

Fairbrother, N., Young, A. H., Janssen, P., Antony, M. M., & Tucker, E. (2015). Depression and anxiety during the perinatal period. *BMC Psychiatry,15*(1), 1-9. doi:10.1186/s12888-015-0526-6

Frey, B. N., Simpson, W., Wright, L., & Steiner, M. (2012). Sensitivity and specificity of the Mood Disorder Questionnaire as a screening tool for bipolar disorder during pregnancy and the postpartum period. *The Journal of Clinical Psychiatry, 73*(11), 1456-1461. doi:10.4088/jcp.12m07856

Gavin, N. I., Gaynes, B. N., Lohr, K. N., Meltzer-Brody, S., Gartlehner, G., & Swinson, T. (2005). Perinatal depression. *Obstetrics & Gynecology,106*(5, Part 1), 1071-1083. doi:10.1097/01.aog.0000183597.31630.db

Gjerdingen, D., Katon, W., & Rich, D. E. (2008). Stepped care treatment of postpartum depression. *Womens Health Issues, 18*(1), 44-52. doi:10.1016/j.whi.2007.09.001

Glover, V. (2014). Maternal depression, anxiety and stress during pregnancy and child outcome; what needs to be done. *Best Practice & Research Clinical Obstetrics & Gynaecology,28*(1), 25-35. doi:10.1016/j.bpobgyn.2013.08.017

Goodman, J. H. (2009). Women's attitudes, preferences, and perceived barriers to treatment for perinatal depression. *Birth, 36*(1), 60-69. doi:10.1111/j.1523-536x.2008.00296.x

Greenberg, P. E., Fournier, A., Sisitsky, T., Pike, C. T., & Kessler, R. C. (2015). The economic burden of adults with major depressive disorder in the United States (2005 and 2010). *The Journal of Clinical Psychiatry, 76*(2), 155-162. doi:10.4088/jcp.14m09298

Grekin, R., & O'Hara, M. W. (2014). Prevalence and risk factors of postpartum posttraumatic stress disorder: A meta-analysis. *Clinical Psychology Review, 34*(5), 389-401. doi:10.1016/j.cpr.2014.05.003

Grigoriadis, S., Wilton, A. S., Kurdyak, P. A., Rhodes, A. E., Vonderporten, E. H., Levitt, A., … Vigod, S. N. (2017). Perinatal suicide in Ontario, Canada: A 15-year population-based study. *Canadian Medical Association Journal,189*(34), 1085-1092. doi:10.1503/cmaj.170088

Hamel, C., Lang, E., Morissette, K., Beck, A., Stevens, A., Skidmore, B., … Moher, D. (2019). Screening for depression in women during pregnancy or the first year postpartum and in the general adult population: A protocol for two systematic reviews to update a guideline of the Canadian Task Force on Preventive Health Care. *Systematic Reviews, 8*(1). doi:10.1186/s13643-018-0930-3

Hamilton, J. A. (1962). *Postpartum psychiatric Problems*. Saint Louis: Mosby.

Hanley, G. E., & Oberlander, T. F. (2014). The effect of perinatal exposures on the infant: Antidepressants and depression. *Best Practice & Research Clinical Obstetrics & Gynaecology,28*(1), 37-48. doi:10.1016/j.bpobgyn.2013.09.001

Hanley, J. (2009). *Perinatal mental health: A guide for health professionals and users*. Chichester, West Sussex: Wiley-Blackwell.

Held, L., & Rutherford, A. (2012). Can't a mother sing the blues? Postpartum depression and the construction of motherhood in late 20th-century America. *History of Psychology, 15*(2), 107–123. doi:10.1037/a0026219

Hirschfeld, R. M. (2002). The mood disorder questionnaire: a simple, patient-rated screening instrument for bipolar disorder. *Journal of Clinical Psychiatry, 4*(1), 9–11. doi:10.4088/pcc.v04n0104

Hoffman, C., Dunn, D. M., & Njoroge, W. F. (2017). Impact of postpartum mental illness upon infant development. *Current Psychiatry Reports,19*(12). doi:10.1007/s11920-017-0857-8

Idaho Department of Health and Welfare: Suicide Prevention Program. (n.d.). *Statistics and facts*. Retrieved from https://healthandwelfare.idaho.gov/Families/SuicidePreventionProgram/StatisticsandFacts/tabid/1922/Default.aspx

Kessler, R. C. (2012). The costs of depression. *Psychiatric Clinics of North America, 35*(1), 1-14. doi:10.1016/j.psc.2011.11.005

Khoramroudi, R. (2018). The prevalence of posttraumatic stress disorder during pregnancy and postpartum period. *Journal of Family Medicine and Primary Care, 7*(1), 220-223. doi:10.4103/jfmpc.jfmpc_272_17

Kootenai County. (n.d.). *Population*. Retrieved from https://www.kcgov.us/756/Population

Kootenai Health. (2018). *Mission, vision, and facts*. Retrieved from https://www.kh.org/mission-vision-and-facts/

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9. *Journal of General Internal Medicine,16*(9), 606-613. doi:10.1046/j.1525-1497.2001.016009606.x

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2003). The patient health questionnaire-2: Validity of a two-item depression screener. *Medical Care, 41*(11), 1284-1292.

Levin, A. (2016). Texas case awakens public to postpartum mental illness. *Psychiatric News, 51*(24), 1-1. doi:10.1176/appi.pn.2016.12b20

Long, M. M., Cramer, R. J., Jenkins, J., Bennington, L., & Paulson, J. F. (2018). A systematic review of interventions for healthcare professionals to improve screening and referral for perinatal mood and anxiety disorders. *Archives of Womens Mental Health, 22*(1), 25-36. doi:10.1007/s00737-018-0876-4

Mandelli, L., Souery, D., Bartova, L., Kasper, S., Montgomery, S., Zohar, J., … Serretti, A. (2016). Bipolar II disorder as a risk factor for postpartum depression. *Journal of Affective Disorders, 204,* 54–58. doi:10.1016/j.jad.2016.06.025

Marcé Society for Perinatal Mental Health. (2019). *History*. Retrieved from https://marcesociety.com/about/history/

Massachusetts Child Psychiatry Access Project. (2015). *Postpartum depression screening algorithm for pediatric providers during well-child visits*. Retrieved from https://www.mcpapformoms.org/Docs/Pediatric%20Screening%20Algorithm%203-14-18.pdf

Matthey, S., Fisher, J., & Rowe, H. (2013). Using the Edinburgh postnatal depression scale to screen for anxiety disorders: Conceptual and methodological considerations. *Journal of Affective Disorders*, *146*(2), 224–230. doi:10.1016/j.jad.2012.09.009

Mcbride, H. L., Wiens, R. M., Mcdonald, M. J., Cox, D. W., & Chan, E. K. (2014). The Edinburgh Postnatal Depression Scale (EPDS): A review of the reported validity evidence. In B. D. Zumbo & E. K. H. Chan (Eds.), *Social indicators research series: Vol. 54. Validity and validation in social, behavioral, and health sciences* (pp. 157-174). Cham, Switzerland: Springer International Publishing. doi:10.1007/978-3-319-07794-9_9

McLellan, F. (2006). Mental health and justice: The case of Andrea Yates. *The Lancet, 368*(9551), 1951-1954. doi:10.1016/s0140-6736(06)69789-4

Mental Health America. (2018). *The state of mental health in America 2018*. Retrieved from https://www.mentalhealthamerica.net/sites/default/files/2018%20The%20State%20of%20MH%20in%20America%20-%20FINAL.pdf

Merrill, L., Mittal, L., Nicoloro, J., Caiozzo, C., Maciejewski, P. K., & Miller, L. J. (2015). Screening for bipolar disorder during pregnancy. *Archives of Womens Mental Health, 18*(4), 579-583. doi:10.1007/s00737-015-0527-y

Milgrom, J., & Gemmill, A. (2014). Screening for perinatal depression. *Best Practice & Research Clinical Obstetrics and Gynaecology, 28*, 13-23.

Moran, K. J., Burson, R., & Conrad, D. (2014). *The doctor of nursing practice scholarly project*. Burlington, MA: Jones & Bartlett Learning.

Moran, M. (2002). Yates case puts mental illness in media spotlight. *Psychiatric News, 37*(8), 1-61. doi:10.1176/pn.37.8.0001a

Munk-Olsen, T., Laursen, T. M., Mendelson, T., Pedersen, C. B., Mors, O., & Mortensen, P. B. (2009). Risks and predictors of readmission for a mental disorder during the postpartum period. *Archives of General Psychiatry, 66*(2), 189. doi:10.1001/archgenpsychiatry.2008.528

Myers, E. R., Aubuchon-Endsley, N., Bastian, L. A., Gierisch, J. M., Kemper, A. R., Swamy, G. K., … Sanders, G. D. (2013). *Efficacy and safety of screening for postpartum depression.* Rockville, MD: Agency for Healthcare Research and Quality.

Norhayati, M., Hazlina, N. N., Asrenee, A., & Emilin, W. W. (2015). Magnitude and risk factors for postpartum symptoms: A literature review. *Journal of Affective Disorders, 175*, 34-52. doi:10.1016/j.jad.2014.12.041

Oates, M. (2003). Suicide: The leading cause of maternal death. *British Journal of Psychiatry, 183*(4), 279–281. doi:10.1192/bjp.183.4.279

O'Connor, E., Rossom, R. C., Henninger, M., Groom, H. C., & Burda, B. U. (2016). Primary care screening for and treatment of depression in pregnant and postpartum women: Evidence report and systematic review for the U.S. Preventive Services Task Force. *JAMA: Journal of the American Medical Association, 315*(4), 388. doi:10.1001/jama.2015.18948

O'Hara, M. W., & Wisner, K. L. (2014). Perinatal mental illness: Definition, description and aetiology. *Best Practice & Research Clinical Obstetrics & Gynaecology,28*(1), 3-12. doi:10.1016/j.bpobgyn.2013.09.002

Palladino, C., Singh, V., Campbell, J., Flynn, H., & Gold, K. (2011). Homicide and suicide during the prenatal period: Findings from the National Violent Death Reporting System. *Obstetrics & Gynecology, 118*, 1056-1063. doi:10.1097/AOG.0b013e31823294da

Paschetta, E., Berrisford, G., Coccia, F., Whitmore, J., Wood, A., Pretlove, S., & Ismail, K. (2014). Perinatal psychiatric disorders: An overview. *American Journal of Obstetrics & Gynecology, 210*(6), 501-509. doi:10.1016/j.ajog.2013.10.009

Postpartum Depression Alliance of Illinois. (n.d.) *Melanie Block Stokes MOTHERS Act for postpartum depression programs*. Retrieved from https://www.ppdil.org/legislation/the-mothers-act

Postpartum Support International. (2019a). *Awareness*. Retrieved from https://www.postpartum.net/?s=caring+and+informative+manner+that+normalizes+perinatal+mental+

Postpartum Support International. (2019b). *Screening recommendations*. Retrieved from https://www.postpartum.net/professionals/screening/

Prokos, H. (2018, July 13). *A new Illinois law calls attention to postpartum mental illness*. Retrieved from http://sjnnchicago.medill.northwestern.edu/blog/2018/07/13/new-illinois-law-calls-attention-postpartum-mental-illness/

Puryear, L. (2018). *Rejuvenation and resilience through connection: Creating a network of support and healing.* Presented at the Postpartum Support International Annual Conference, Houston, Texas.

Rhodes, A. M., & Segre, L. S. (2013). Perinatal depression: A review of US legislation and law. *Archives of Womens Mental Health, 16*(4), 259-270. doi:10.1007/s00737-013-0359-6

Rosenfeld, R. M., & Shiffman, R. N. (2009). Clinical practice guideline development manual: A quality-driven approach for translating evidence into action. *Otolaryngology–Head and Neck Surgery, 140*(6_suppl). doi:10.1016/j.otohns.2009.04.015

Segre, L., & Davis, W. (2013, June). *Postpartum depression and perinatal mood disorders in the DSM*. Retrieved from https://www.postpartum.net/professionals/postpartum-support-international-the-dsm5/

Seymour, M., Giallo, R., Cooklin, A., & Dunning, M. (2014). Maternal anxiety, risk factors and parenting in the first post-natal year. *Child: Care, Health and Development, 41*(2), 314-323. doi:10.1111/cch.12178

Sharma, V., Al-Farayedhi, M., Doobay, M., & Baczynski, C. (2018). Should all women with postpartum depression be screened for bipolar disorder? *Medical Hypotheses, 118*, 26-28. doi:10.1016/j.mehy.2018.06.016

Sharma, V., Khan, M., Corpse, C., & Sharma, P. (2008). Missed bipolarity and psychiatric comorbidity in women with postpartum depression. *Bipolar Disorders, 10*(6), 742-747. doi:10.1111/j.1399-5618.2008.00606.x

Sharma, V., & Mazmanian, D. (2014). The DSM-5 peripartum specifier: Prospects and pitfalls. *Archives of Women's Mental Health, 17*(2), 171-173. doi:10.1007/s00737-013-0406-3

Sharma, V., & Xie, B. (2011). Screening for postpartum bipolar disorder: Validation of the Mood Disorder Questionnaire. *Journal of Affective Disorders, 131*(1-3), 408-411. doi:10.1016/j.jad.2010.11.026

Shekelle, P. G., Woolf, S. H., Eccles, M., & Grimshaw, J. (1999). Clinical guidelines: Developing guidelines. *BMJ*, *318*(7183), 593–596. doi: 10.1136/bmj.318.7183.593

Shields, B. (2005). *Down came the rain: My journey through postpartum depression*. New York: Hyperion.

Siu, A. L. (2016). Screening for depression in adults: U.S. Preventive Services Task Force recommendation statement. *JAMA: Journal of the American Medical Association, 315*(4), 380-387.

Stetler, C. B. (2001). Updating the Stetler model of research utilization to facilitate evidence-based practice. *Nursing Outlook, 49*(6), 272–279. doi:10.1067/mno.2001.120517

Swalm, D., Brooks, J., Doherty, D., Nathan, E., & Jacques, A. (2010). Using the Edinburgh postnatal depression scale to screen for perinatal anxiety. *Archives of Womens Mental Health*, *13*(6), 515–522. doi:10.1007/s00737-010-0170-6

Tasca, C. (2012). Women and hysteria in the history of mental health. *Clinical Practice & Epidemiology in Mental Health, 8*(1), 110-119. doi:10.2174/1745017901208010110

Tatano Beck, C., & Gable, R. K. (2002). *Postpartum depression screening scale*. Retrieved from https://www.wpspublish.com/store/p/2902/pdss-postpartum-depression-screening-scale

Thombs, B. D., Arthurs, E., Coronado-Montoya, S., Roseman, M., Delisle, V. C., Leavens, A., … Zelkowitz, P. (2014). Depression screening and patient outcomes in pregnancy or postpartum: A systematic review. *Journal of Psychosomatic Research, 76*(6), 433-446. doi:10.1016/j.jpsychores.2014.01.006

Toler, S., Stapleton, S., Kertsburg, K., Callahan, T. J., & Tolsma, M. H. (2018). Screening for postpartum anxiety: A quality improvement project to promote the screening of women suffering in silence. *Midwifery, 62*, 161-170. doi:10.1016/j.midw.2018.03.016

Tufts Medical Center. (2019). *Survey of wellbeing of young children*. Retrieved from https://www.floatinghospital.org/The-Survey-of-Wellbeing-of-Young-Children/Overview.aspx

2020 Mom. (n.d.). *Closing gaps in maternal mental health care through education, collaboration and advocacy*. Retrieved from https://www.2020mom.org/federal-legislation

U.S. Department of Health and Human Services. (2000). *Report of the Surgeon General's Conference on Children's Mental Health: A national action agenda*. Washington, DC: Author.

U.S. Preventive Services Task Force. (2018). *Final recommendation statement: Depression in adults*. Rockville, MD: U.S. Dept. of Health & Human Services, Agency for Healthcare Research and Quality.

University of North Carolina. (2016). *Perinatal depression screening and treatment.* Retrieved from https://www.mombaby.org/wp-content/uploads/2016/03/Perinatal-Depression-Screening-and-Treatment.pdf

Venkatesh, K. K., Kaimal, A., Nadel, H., Blewett, D., Freeman, M., & Riley, L. (2016). 209: Implementation of universal screening for depression during pregnancy: Feasibility and impact on obstetric care. *American Journal of Obstetrics and Gynecology, 214*(1), S126. doi:10.1016/j.ajog.2015.10.246

Veterans Affairs. (2016). *VA/DoD clinical practice guideline for the management of major depressive disorder*. Retrieved from https://www.healthquality.va.gov/guidelines/MH/mdd/VADoDMDDCPGFINAL82916.pdf

Waldrop, J., Caruso, D., Fuchs, M. A., & Hypes, K. (2014). EC as PIE: Five criteria for executing a successful DNP final project. *Journal of Professional Nursing*, *30*(4), 300–306. doi:10.1016/j.profnurs.2014.01.003

World Health Organization. (2018). *International statistical classification of diseases and related health problems* (10th Revision). Retrieved from https://www.who.int/classifications/icd/icdonlineversions/en/

Yawn, B. P., Dietrich, A. J., Wollan, P., Bertram, S., Graham, D., Huff, J., … Pace, W. D. (2012). TRIPPD: A practice-based network effectiveness study of postpartum depression screening and management. *The Annals of Family Medicine,10*(4), 320-329. doi:10.1370/afm.1418

Yawn, B. P., Bertram, S., Kurland, M., & Wollan, P. C. (2015). Repeated depression screening during the first postpartum year. *The Annals of Family Medicine, 13*(3), 228-234. doi:10.1370/afm.1777

APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL

UNIVERSITY OF
NORTHERN COLORADO

Institutional Review Board

DATE:	June 6, 2019
TO:	Leanne Elisha, PMHNP
FROM:	University of Northern Colorado (UNCO) IRB
PROJECT TITLE:	[1430395-1] Perinatal Mental Health: Improving the Quality and Consistency of Healthcare Delivery in Kootenai County
SUBMISSION TYPE:	New Project
ACTION:	APPROVAL/VERIFICATION OF EXEMPT STATUS
DECISION DATE:	June 6, 2019
EXPIRATION DATE:	June 6, 2023

Thank you for your submission of New Project materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

Leanne,

Thank you for your application. Your project has been verified as Exempt, however, prior to beginning your data collection, please change the contact information from my office from Sherry May to Nicole Morse, Research Compliance Manager. Once you have done so, you are free to proceed with your research.

Thank you and best of luck with your project!

Nicole Morse

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Nicole Morse at 970-351-1910 or nicole.morse@unco.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.

APPENDIX B

STATEMENT OF MUTUAL AGREEMENT

Statement of Mutual Agreement
University of Northern Colorado
Doctorate of Nursing Practice Scholarly Project
Leanne Elisha, PMHNP; DNP-S

The purpose of the "Statement of Mutual Agreement" is to describe the shared view between the University of Northern Colorado and Leanne Elisha, DNP Candidate, concerning her proposed scholarly project.

Proposed Project Title: Perinatal Mental Health: Improving the Quality and Consistency of Healthcare Delivery in Kootenai County.

Goal of Scholarly Project: The goal of this project is to improve the consistency and quality of mental health care for pregnant and postpartum women. The project aims to engage local stakeholders and experts to create a streamlined, consistent process for assessment, referral, and follow-up of mental health issues that matches clinician needs with available resources.

Brief Description of Proposed Project: The purpose of this scholarly project is to develop a guideline for clinician use to improve screening, referral, and follow-up of perinatal mental health issues. The guideline will identify an appropriate screening instrument, screening intervals, methods, recording practices, and follow-up recommendations. Additionally, an integrated behavioral health or stepped care model will be proposed for ongoing treatment and coordination of care. The project will be developed using the Delphi Method to build consensus. Focus group and expert panel discussions may also be used, if necessary.

Proposed On-Site Activities: No on-site activities are proposed as part of this scholarly project.

Confidentiality of Patient Records: No patient records will be involved in the development of this scholarly project. Responses from each round of Delphi questionnaires will be kept confidential; only the project supervisor and Capstone Chair/Research Advisor will have access to the completed surveys to protect the identity of respondents.

The DNP scholarly project will include a final report, an abstract, potential publication, or oral presentation of the report. No personal identifiers will be included, and all data will be reported in aggregate form. The author welcomes any comments or suggestions from the agency but reserves the right to publish findings and analysis according to professional standards and principles of academic freedom.

5-8-2019
Signature of DNP Student — Date

May 8, 2019
Signature of DNP Scholarly Project Chair/Research Advisor — Date

APPENDIX C

CONSENT FORM FOR HUMAN PARTICIPATION IN RESEARCH AND ROUND ONE DELPHI QUESTIONS

CONSENT FORM FOR HUMAN PARTICIPATION IN RESEARCH

Project title: Perinatal Mental Health:
Improving the Quality and Consistency of Healthcare Delivery in Kootenai County

Student Researcher: Leanne Elisha, PMHNP (DNP Student)
Research Advisor: Kathleen N. Dunemn, PhD, APRN, CNM, School of Nursing
Co-Advisor: [name, credentials]
Committee Member: [name, credentials]

Expert Consensus via a Delphi Study

Dear Participant, I am completing a DNP Scholarly Project to improve perinatal mental health care in Kootenai County.

The primary goal of this project is to develop a guide to improve identification, referral, treatment, and follow-up perinatal mood and anxiety disorders (PMADs). This guide will identify:

1. An appropriate screening instrument
2. Appropriate screening intervals
3. Screening method and process for recording results in the medical record
4. Specific actions the clinician should take based on pre-established cutoff scores
5. A method for transferring care and assessing follow up once risk or symptoms have been identified.
6. A proposed model for integrating mental health into the primary care/OB setting.

The Delphi Method will be used to solicit stakeholder opinion, interest, and feedback and to build consensus. It is anticipated that two rounds will be necessary for completion of this project. The first round of questions will focus on general awareness of PMADs, screening recommendations, and current practice, as well as areas of perceived need. Subsequent rounds will focus on building consensus and developing a practical guide to improve clinical practice.

All Delphi surveys will be sent and returned electronically with a private e-mail account only accessible by the DNP student. It is estimated that each participant will spend approximately 10-15 minutes in completion of survey questions within each round of the Delphi process.

Delphi survey responses will be kept **confidential**. **Participation is voluntary**. If you know any providers or stakeholders that may be interested in participating in these surveys, please forward this email to them. If you begin to participate, you may decide to stop or withdraw at any time. If you have any questions, please contact one of the undersigned. Having read the above document and having had an opportunity to ask any questions, please access the link [insert survey link] to complete the survey.

If you complete the survey, it will be assumed that you have communicated consent for your participation. You may keep this form for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May,

IRB Administrator, office of Sponsored Programs, Kepner, Hall, University if Northern Colorado, Greeley, Co 80639. Phone 970-351-1910.

This informed consent will be e-mailed and accompany each round of the Delphi study.

Student Researcher: Leanne Elisha, PMHNP, DNP-S.email: elis5570@bears.unco.eduPhone:
Research Advisor: Kathleen N. Dunemn, PhD, APRN, CNM. email: Kathleen.Dunemn@unco.eduPhone: (970) 351-3081/ (303) 649-5581
Co-Research Advisor: [name, credentials], [email], [phone]
Committee Member: [name, credentials], [email], [phone]

Round One Delphi Questions:

Thank you for your participation in this survey. The objective of this project is to improve the detection, referral, and treatment of perinatal mental health issues in our community. The questions below pertain to perinatal mental health issues, including pre/postpartum depression, anxiety, mania, and psychosis, collectively referred to as perinatal mood and anxiety disorders (PMADs). Please answer as fully as possible and feel free to elaborate or qualify your responses. All responses will be kept confidential. If you have any specific questions regarding the survey or the project, please email Leanne Elisha at lelisha@kh.org.

1) What is your role?
    - Administrative: _____
    - OB provider: (CNM, OB)
    - Mental health provider: (psychiatrist, NP)
    - Social worker
    - Therapist: (LPC, MSW, LCSW, etc)
    - RN
    - Other
2) Do you encounter PMADs in your professional role? (either directly, providing patient care, or indirectly, in developing systems/programs)
    - Yes: ___ if so, please estimate the frequency
    - No

3) Are you (or your organization) currently using any sort of guideline/protocol in clinical practice?

    - Yes: If yes, please describe. What do you like/dislike about the guideline you currently use? _____
    - No

4) Are you (or your organization) currently using a formal tool to screen for PMADs?

    - Yes: If yes, which tool? What led you to choose this tool? What do you like/dislike about it? _____
    - No

5) What would you like to see in a guide?

    - Recommended screening tools
    - Recommended screening intervals
    - Suggested talking points to discuss with patients
    - Recommended actions for positive screens
    - Referral sources for patient follow up
    - Local contacts for professional consultation (peer-to-peer consult)
    - Other: _____

6) From your perspective, what are barriers to the screening/assessment/referral/treatment of PMADs in our community:

    _____

7) From your perspective, what would most improve the care of PMADs in our community?

    _____

Do you have any other questions, suggestions, or concerns?

_____

APPENDIX D

CONSENT FORM FOR HUMAN PARTICIPATION IN RESEARCH, ROUND TWO DELPHI QUESTIONS, AND EDINBURGH POSTNATAL DEPRESSION SCALE

CONSENT FORM FOR HUMAN PARTICIPATION IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Project title: Perinatal Mental Health:
Improving the Quality and Consistency of Healthcare Delivery in Kootenai County

Student Researcher: Leanne Elisha, MS, PMHNP, DNP-S
Research Advisor: Kathleen N. Dunemn, PhD, APRN, CNM, School of Nursing
Committee Member: Faye Hummel, RN, PhD, CTN-A, ANEF, School of Nursing
Committee Member: Carolyn Bottone-Post, DNP, RN, CNM, School of Nursing

Contact Information:
Student Researcher: Leanne Elisha, MS, PMHNP, DNP-S
Email: elis5570@bears.unco.edu
Research Advisor: Kathleen Dunemn, PhD, APRN, CNM
Email: Kathleen.Dunemn@unco.edu
Phone: (970) 351-3081/ (303) 649-5581

Expert Consensus via a Delphi Study: Round 2 Delphi Questions

Project Purpose: Dear Participant, you are invited to participate in Round 2 of my DNP Scholarly Project to improve perinatal mental health care in Kootenai County.
The primary goal of this project is to develop a guideline to improve identification, referral, treatment, and follow-up perinatal mood and anxiety disorders (PMADs). The final guideline will identify:

1. An appropriate screening instrument
2. Appropriate screening intervals
3. Screening method and process for recording results in the medical record
4. Specific actions the clinician should take based on pre-established cutoff scores
5. A method for transferring care and assessing follow up once risk or symptoms have been identified.
6. A proposed model for integrating mental health into the primary care/OB setting.

Project Description: The Delphi Method will be used to solicit stakeholder opinion, interest, and feedback and to build consensus. It is anticipated that two rounds will be necessary for completion of this project. The first round of questions focused on general awareness of PMADs, screening recommendations, and current practice, as well as areas of perceived need. This round focuses on building consensus and developing a practical guideline to improve clinical practice.

In the first round of the Delphi study you were asked to respond to ten (10) questions related to perinatal mental health issues. This round contains sixteen (16) questions. Each asks you to approve or reject a proposed step in the guideline. Comments are invited on all questions but not required. It is estimated that it will take 10-15 minutes to complete these questions. No compensation will be offered. There will be no form of deception used.

Risks and Benefits of Participation: The risks inherent in this study are no greater than those normally encountered during regular daily activities. The potential benefit of this study is enhanced provider/administrator engagement in the development of improved systems for providing care to an underserved population.

Confidentiality Procedures: Delphi survey responses will be kept confidential. All Delphi surveys will be sent and returned electronically with a private e-mail account only accessible by the DNP student. Data will be stored on a password-protected computer in a locked office. Responses to questions will be kept confidential, but because the panel of experts has been hand-selected by the student researcher and the project may include face-to-face discussion and focus groups, anonymity is neither inferred nor assured.

Participation is voluntary. If you begin to participate, you may decide to stop or withdraw at any time. If you have any questions, please contact one of the undersigned. Having read the above document and having had an opportunity to ask any questions, please access the link [insert survey link] to complete the survey.
If you complete the survey, it will be assumed that you have communicated consent for your participation. You may keep this form for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, IRB Administrator, office of Sponsored Programs, Kepner, Hall, University if Northern Colorado, Greeley, Co 80639. Phone: (970) 351-1910.

Round 2 Delphi Questions

Thank you for your participation in the first round and for your feedback.

Your responses are consistent with themes in the literature. Identified themes include: there are insufficient resources available to detect, much less treat, perinatal mood and anxiety disorders (PMADs). Specialized clinicians and referral destinations must be identified/developed. Stigma around mental health issues interferes with treatment engagement and lowers participation. Institutional support is required to build a more coherent, accessible system to care for these patients.

Based on your responses, I have proposed a model of care. Please take the time to review the proposal below and approve or reject each item. Feedback is greatly appreciated. This is currently a theoretical project; actual implementation will require administrative investment and support.

Regarding the assessment and care of PMADs in the Kootenai Health system, please approve or reject the following:

Appropriate screening instrument:

1. Kootenai Health OB providers will begin screening pregnant and postpartum women for PMADs using the Edinburgh Postnatal Depression Scale (EPDS). This tool is attached for easy reference.
    - Rationale:
        - EPDS is a widely used, freely available tool that is validated for assessment of postpartum and antennal depression (McBride et al., 2014).
        - The EPDS is a 10-item, self-administered screen that can be scored in approximately 5 minutes without specialized training.
        - The EPDS specifically excludes questions about neurovegetative symptoms (changes in sleep or appetite) that may be non-pathological in this population.
        - Sensitivity: 0.67-1.0; specificity: 0.87 (using a cut-off of 13) (USPSTF, 2016)

    - Approve
    - Reject
    - Comments:

Appropriate screening intervals:

2. In the OB setting, PMAD screening will be performed at New OB, prenatal 28-32-week, lactation problem, and 6-week postpartum visits.
    - Rationale:
        - "There is little evidence regarding the optimal timing for screening" and a "pragmatic approach" should be used (Siu, 2016).

        - Women are significantly more likely to complete follow up mental health evaluation if they had a positive depression screen prior to delivery compared to after delivery (Venkatesh et al., 2016).
        - Depression during pregnancy is one of the strongest risk factors for postpartum depression (Paschetta et al., 2014).
        - Postpartum depression tends to peak at 6 weeks, 2-3 months, and 6 months after delivery (Earls, 2010).

    - Approve
    - Reject
    - Comments:

3. In the Emergency Department setting, women presenting to the ED with mental health concerns will be asked "are you pregnant, or have you been pregnant within the past year?" If the response if affirmative, case managers will administer the EPDS.
    - Rationale:
        - There is currently no standardized method of identifying pregnant/postpartum in the ED, nor is there a way of tracking ED utilization for this population. Standardized screening and data integration into the EHR (as a searchable value) will help identify at-risk patients and help direct resource utilization.

    - Approve
    - Reject
    - Comments:

Screening method and recording results in the medical record:

4. In the OB office or the ED, the nurse/case manager will give the patient a clipboard with a paper copy of the EPDS and allow them to complete it privately. The nurse/case manager will review the score, enter the responses into the EHR, and communicate the results to the provider (in the ED this includes the ED provider and the on-call psychiatrist).
    - Rationale:
        - The EPDS is designed to be self-administered. Values can be quickly recorded in an EPIC EPDS flow-sheet allowing quick, easy access by clinicians across the spectrum of care. (Until the KH transition to EPIC, outpatient scores will be recorded in NextGen and ED scores into Meditech.)

    - Approve
    - Reject
    - Comments:

Specific actions based on scores (questions 5-9 refer primarily to the outpatient setting; in the ED clinician judgment should be used to determine whether the patient meets criteria for admission and if admission is the most appropriate intervention):

5. The provider will review the EPDS results and follow up directly with the patient on any positive responses.

    - Approve
    - Reject
    - Comments:

6. Special attention should be given to any positive responses to #10 ("Are your worries or mood changing the way you do things? Are you having any scary thoughts?") Sound clinical judgment should be used in interpreting responses/assessing risk.

    - Approve
    - Reject
    - Comments:

7. For scores <10: (minimal symptoms)
    - Scores <6: Provide encouragement, supportive counseling, education, and encourage the patient to reach out if symptoms change (increase).
    - Scores of 6=9: as above; follow up at future visits and consider repeat screens

    - Approve
    - Reject
    - Comments:

8. For scores 10-12: (mild to moderate symptoms)
    - Discuss self-care, sleep hygiene, coping strategies. Offer referral to counseling.

    - Approve
    - Reject
    - Comments:

9. For scores of >12 (suggestive of major depression) OR positive response to Question #10:
    - Assess for safety: is there acute concern for psychiatric illness? (potential for harm to self/others; inability to care for self/baby?)
        - No: Refer to counseling; consider use of antidepressant medication, consider consultation with/referral to psychiatric provider.

        - Yes: If immediate concern for harm to self or others, arrange for patient to go directly to the ED.

    - Approve
    - Reject
    - Comments:

Method for transferring care: (these are dependent upon the proposed model described below)

10. In the OB clinic, the clinician will ask the patient if she is currently established with a mental health provider (prescriber, and/or therapist).

    - Approve
    - Reject
    - Comments:

11. If yes, she will be referred back to that provider for follow up. A designee in the OB office will contact the mental health clinician's office with the results of the EPDS and to coordinate care.

    - Approve
    - Reject
    - Comments:

12. If no, she will be referred to the OB social worker, ideally with a warm hand-off.

    - Approve
    - Reject
    - Comments:

13. For any OB office patient with an EPDS score => 12, the OB social worker will attempt to contact the patient by phone for follow up within 72 hours.

    - Approve
    - Reject
    - Comments:

Ideal integrated behavioral health model:

14. In this proposed model, mental health services would be co-located in the outpatient OB office.
    - Rationale:
        - Co-location improves treatment adherence because it normalizes treatment and reduces stigma (Gjerdingen, Katon & Rich, 2008).

    - Approve
    - Reject
    - Comments:

15. A full-time clinician (ideally a social worker) would work in the OB office providing crisis intervention, case management, and psychotherapy.
    - Rationale:
        - A social worker (LCSW, LMSW) is ideally suited to match the varying needs of this population. They can help the patient navigate the healthcare system and can provide direct clinical care.
        - Follow through rates improve when social workers are embedded in the OB clinic (Venkatesh et al., 2016)

    - Approve
    - Reject
    - Comments:

16. A part-time psychiatric nurse practitioner would work in the OB office providing diagnostic assessment, consultations, and medication management. These services would be available to patients from across the community, not restricted to Kootenai Health clients. Phone consultation could be available outside office hours.
    - Rationale:
        - The NP would have the flexibility to assume full care of some patient's mental health needs, especially in complicated cases that OB providers are not comfortable handling, or to provide clinical consultation to the KH and community providers to optimize resource utilization (Gjerdingen, Katon & Rich, 2008).

    - Approve
    - Reject
    - Comments:

Edinburgh Postnatal Depression Scale[1] (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

Administered/Reviewed by _____ Date _____

[1]Source: 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 .

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

Edinburgh Postnatal Depression Scale[1] (EPDS)

Postpartum depression is the most common complication of childbearing.[2] The 10-question Edinburgh Postnatal Depression Scale (EPDS) is a valuable and efficient way of identifying patients at risk for "perinatal" depression. The EPDS is easy to administer and has proven to be an effective screening tool.

Mothers who score above 13 are likely to be suffering from a depressive illness of varying severity. The EPDS score should not override clinical judgment. A careful clinical assessment should be carried out to confirm the diagnosis. The scale indicates how the mother has felt ***during the previous week***. In doubtful cases it may be useful to repeat the tool after 2 weeks. The scale will not detect mothers with anxiety neuroses, phobias or personality disorders.

Women with postpartum depression need not feel alone. They may find useful information on the web sites of the National Women's Health Information Center <www.4women.gov> and from groups such as Postpartum Support International <www.chss.iup.edu/postpartum> and Depression after Delivery <www.depressionafterdelivery.com>.

SCORING

QUESTIONS 1, 2, & 4 (without an *)
Are scored 0, 1, 2 or 3 with top box scored as 0 and the bottom box scored as 3.

QUESTIONS 3, 5-10 (marked with an *)
Are reverse scored, with the top box scored as a 3 and the bottom box scored as 0.

Maximum score: 30
Possible Depression: 10 or greater
Always look at item 10 (suicidal thoughts)

Instructions for using the Edinburgh Postnatal Depression Scale:

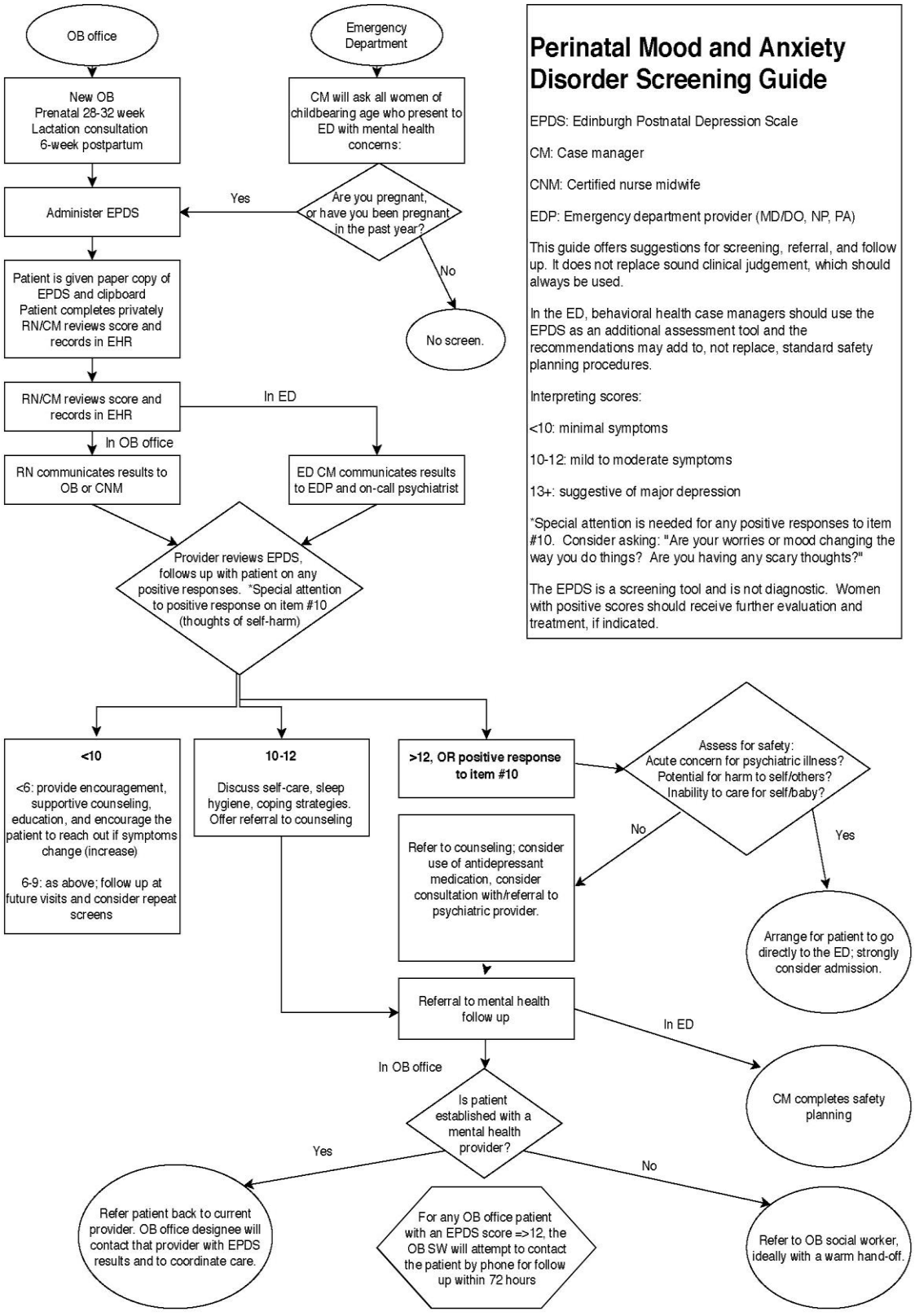
1. The mother is asked to check the response that comes closest to how she has been feeling in the previous 7 days.
2. All the items must be completed.
3. Care should be taken to avoid the possibility of the mother discussing her answers with others. (Answers come from the mother or pregnant woman.)
4. The mother should complete the scale herself, unless she has limited English or has difficulty with reading.

[1]Source: 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.

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

APPENDIX E

FLOWCHART



Perinatal Mood and Anxiety Disorder Screening Guide

EPDS: Edinburgh Postnatal Depression Scale

CM: Case manager

CNM: Certified nurse midwife

EDP: Emergency department provider (MD/DO, NP, PA)

This guide offers suggestions for screening, referral, and follow up. It does not replace sound clinical judgement, which should always be used.

In the ED, behavioral health case managers should use the EPDS as an additional assessment tool and the recommendations may add to, not replace, standard safety planning procedures.

Interpreting scores:

<10: minimal symptoms

10-12: mild to moderate symptoms

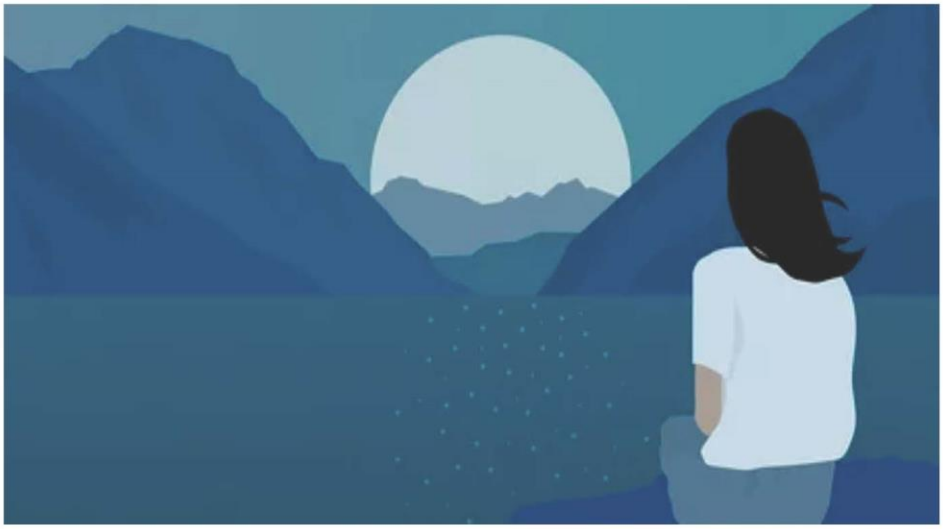
13+: suggestive of major depression

*Special attention is needed for any positive responses to item #10. Consider asking: "Are your worries or mood changing the way you do things? Are you having any scary thoughts?"

The EPDS is a screening tool and is not diagnostic. Women with positive scores should receive further evaluation and treatment, if indicated.

APPENDIX F

PERINATAL MOOD AND ANXIETY DISORDER SCREENING GUIDE



PERINATAL MOOD AND ANXIETY DISORDER SCREENING GUIDE

IMPROVING ACCESS AND QUALITY OF CARE IN KOOTENAI COUNTY

You are not alone. You are not to blame. With help, you will be well.

(Postpartum Support International)

PERINATAL MOOD AND ANXIETY DISORDER SCREENING GUIDE

BACKGROUND

Perinatal mood and anxiety disorders (PMADs)—including depression, anxiety, posttraumatic stress disorder, mania, and psychosis—are among the common complications of pregnancy and childbirth. It is estimated that at least 1 in 7 women who are pregnant or give birth experience PMADs and the incidence may be even higher in women with elevated risk factors (Earls, 2010; O'Hara & Wisner, 2014).

PMADs can occur at any time during pregnancy or the postpartum period (generally considered up to one year after delivery). They can have devastating impacts on mothers, infants, other family members, and communities. In the developed world, suicide is a leading cause of perinatal maternal death, with higher mortality rates than hypertensive or hemorrhagic disorders (Palladino, Singh, Campbell, Flynn, & Gold, 2011).

Severe maternal stress during the first trimester is associated with increased risk of congenital malformations and prenatal stress at any point during pregnancy increases the risk of depression, anxiety, and behavioral issues in offspring. (Glover, 2014; Hoffman, Dunn, & Njoroge, 2017). Anxiety and depression during pregnancy are independent risk factors for cesarean delivery, preterm birth, and low birth weight (Hanley & Oberlander, 2014).

Babies born to women experiencing PMADs may require higher levels of care in early infancy and frequently have difficulty with sleep and temperament (Hoffman, Dunn, & Njoroge, 2017). PMADs can interfere with infant attachment and bonding and parental depression can lead to poor implementation of recommended safety measures—for example, using car seats properly or following safe-sleep guidelines (Earls, 2010).

PMADs are often under-recognized, with estimates that less than 50% of perinatal women with significant depressive symptoms are identified (Yawn et al., 2012), and only 6.3% of women receive adequate treatment (Cox et al., 2016). Barriers to identification and treatment of PMADs include shame, stigma, provider/patient discomfort discussing mental health issues, functional impairment related to symptoms, inconsistent screening, inadequate availability of mental health services, and inadequate systems to facilitate follow up.

Despite increasing awareness of perinatal mental health issues and formal recommendations to implement universal screening and ensure access to appropriate follow-up, there is wide variation in clinical practice across regions and providers.

Evidence shows that the best way to improve perinatal mental health outcomes is to develop comprehensive, robust systems for screening, referral, and follow up.

The goal of this guide is to improve the identification, referral, treatment, and follow-up of PMADs in our community. This guide identifies and provides evidence to support:

1. An appropriate screening instrument
2. Appropriate screening intervals
3. Screening method and process for recording results in the medical record
4. Specific actions the clinician should take based on pre-established cutoff scores
5. A method for transferring care and assessing follow up once risk or symptoms have been identified.
6. A proposed model for integrating mental health into the primary care/OB setting.

PMAD RISK FACTORS

The strongest predictive risk factors for ***perinatal depression*** are history of depression (perinatal or non-perinatal episodes), and psychosocial factors (Paschetta et al., 2014; O'Hara & Wisner, 2014; Toler et al., 2018) including:

- History of interpersonal violence
- Adverse life events
- Unplanned pregnancy
- Physical illness or pregnancy complications
- Multiple births
- Sleep disturbance
- Low social and/or partner support
- High perceived stress
- High perceived childcare need
- Low self-esteem

Personal or family history of psychotic disorders, previous episodes of postpartum psychosis, younger age, and sleep disturbance may increase the risk of ***postpartum psychosis*** (Paschetta et al., 2014).

Gonadal steroid withdrawal after delivery and sleep deprivation due to circadian rhythm shifts and care needs of the newborn may trigger episodes of ***bipolar disorder*** (O'Hara & Wisner, 2014).

PTSD risk is increased by:

- Pregnancy complications
- Cesarean delivery
- Lower birth weight
- NICU admission
- Perinatal death (Paschetta et al., 2014)

DESCRIPTIONS OF PMADS

Baby Blues: Mild or moderate symptoms, usually do not interfere with functioning and typically resolve with support and reassurance. Usually occur in the first few days or week after delivery. Affect 50-80% of women (O'Hara & Wisner, 2014; Earls, 2010).

- Sadness
- Mood swings
- Tearfulness
- Anxiety
- Worry

Perinatal Depression (often called Postpartum Depression): More profound symptoms, usually begin at least several weeks after delivery (may be preceded by baby blues) and last at least two weeks. Untreated depression may persist for months of even years. May occur during pregnancy or postpartum. Prevalence estimated between 7.2 and 19.2% (APA, 2013; Gavin et al., 2005; O'Hara & Wisner, 2014).

- Dysphoria
- Hopelessness
- Helplessness
- Loss of interest
- Loss of motivation
- Crying spells
- Suicidal thoughts

Perinatal Anxiety: Large, umbrella term that includes Generalized Anxiety, Panic, Social Anxiety, and Obsessive Compulsive Disorders. Reported rates vary, with prevalence rates from 4.5% to 15% (Paschetta et al., 2014). Often co-occurs with perinatal depression (Fairbrother et al., 2015).

- Excessive worry
- Muscle tension
- Poor concentration
- Restlessness
- Irritability

Posttraumatic Stress Disorder (PTSD): Develops after exposure to a traumatic event associated with serious risk of death, injury, or threat to physical integrity (APA, 2013). Prevalence ranges from 1% to 21% in community samples, and up to 43% in high-risk samples (Khoramroudi, 2018). Symptom-clusters include:

- Re-experiencing (flashbacks, intrusive memories, or nightmares)
- Avoidance of reminders of trauma
- Negative thoughts or feelings about the trauma
- Nervous system arousal related to the trauma

Obsessive Compulsive Disorder: Occurs in up to 4% of women. Postpartum-OCD is often misinterpreted as psychosis but the baby is actually at low risk; the mother takes steps to protect baby (possibly overprotect), and does not want to harm it (Paschetta et al., 2014; O'Hara & Wisner, 2014).

- Recurrent, intrusive, unwanted, and uncomfortable (ego-dystonic) thoughts
- Thoughts often related to harming self or baby
- Repetitive behaviors to alleviate the distress caused by the intrusive thoughts

Bipolar Disorder: Changes in mood or energy states that last days to weeks at a time. Pregnancy and birth can be triggers for de novo mania and hypomania in women without previous bipolar disorder diagnoses. Hypomanic, mania, and mixed episodes tend to occur immediately after childbirth (Sharma & Xie, 2011). The elevated mood of hypomania may be misinterpreted as a normal joy of being a new parent and the diminished need for sleep may be obscured by the typical sleep disruption in the postpartum period. Women with Bipolar Disorder are at elevated risk for episodes during and after pregnancy, with up to 50% of women with Bipolar II Disorder (BD-II) experiencing depression postpartum (Mandelli et al., 2016).

- Decreased need for sleep
- Elevated energy
- Irritability
- Impulsivity
- Racing thoughts
- Grandiose thoughts
- Distractibility

Postpartum Psychosis: Is a break from reality and constitutes a medical emergency. The mother is may be confused or disoriented; she may experience hallucinations or delusions, for example believing that her baby is possessed by a demon, or that she needs to kill the infant in order to "save" it. These thoughts are ego-syntonic (the mother does not recognize that something is wrong). Onset is usually within the first 2-4 weeks after birth and incidence is 1-3 per 1,000 births (Paschetta et al., 2014; Earls, 2010). The risk of recurrence with subsequent pregnancies is between 30%-50% (APA, 2013).

- Hallucinations
- Delusions
- Disorientation
- Symptoms wax and wane

SCREENING FOR PMADS: SUMMARY OF THE EVIDENCE

Evidence for screening

Routine screening for PMADs (primarily perinatal depression) is recommended by professional organizations, including the American College of Obstetricians and Gynecologists (ACOG, 2018), US Preventive Services Task Force (USPSTF, 2016), American Academy of Pediatrics (AAP, 2010), and Postpartum Support International (PSI, 2018). While screening alone does not improve outcomes, screening with appropriate referral/follow-up does (Siu, 2016).

A USPSTF-commissioned systematic review of evidence published in 2016 found "sufficient evidence" to support universal screening of pregnant and postpartum women. The systematic review found 28-59% reductions in risk of depression at 3- to 5-month follow up in women who participated in screening programs, although the study did not differentiate between studies in which women received screening alone versus screening and additional treatment (O'Connor et al., 2016; Siu, 2016).

Evidence for screening tools

The screening tools most commonly used in perinatal women include the Edinburgh Postnatal Depression Screen (EPDS), the Postpartum Depression Screening Scale (PDSS) and the Patient Health Questionnaire-9 (PHQ-9). Each has been validated for use in the perinatal population, but the EPDS has shown higher sensitivity in perinatal women than the PHQ-9 (O'Connor et al. (2016). Provider or organizational preference may largely influence their use in clinical practice. It is important to remember that screening instruments are not diagnostic, and prompt evaluation by a qualified mental health professional is essential.

Evidence for screening Intervals

There is no clear evidence on the optimal intervals at which screening should be completed, but the consensus is screening should be provided at least once during pregnancy and several times during the first year postpartum (Siu, 2016, p. 382). Postpartum depression tends to peak at 6 weeks, 2-3 months, and 6 months after delivery (Earls, 2010). Beyond simply identifying women experiencing or at risk for PMADs, routine screening provides an opportunity to discuss risk factors, to educate, and to normalize women's experiences.

Evidence for follow up/referral

Screening alone does not improve outcomes, and appropriate follow-up, referral to specialists, and treatment are imperative (Milgrom & Gemmill, 2014; Beck & Gable, 2001; Cox et al., 2016). Stepped-care and integrated mental health models promote more efficient use of resources, improved continuity, and improved clinical outcomes (Gjerdingen, Katon, & Rich, 2008). Co-location of mental health providers in the OB setting may result in "substantially higher" rates of follow-up (Myers et al., 2013, p 61). Even if they are identified as being at risk for or having PMAD symptoms, women are less likely to attend mental health follow up when referred to a separate, off-site mental health clinician.

RECOMMENDED SCREENING INSTRUMENT

Instrument

Kootenai Health OB and ED clinicians will begin screening pregnant and postpartum women for PMADs using the Edinburgh Postnatal Depression Scale (EPDS).

Rationale

The EPDS is a widely used, freely available tool that is validated for assessment of postpartum and antennal depression (McBride et al., 2014).

The EPDS is a 10-item, self-administered screen that can be scored in approximately 5 minutes without specialized training.

The EPDS specifically excludes questions about neurovegetative symptoms (changes in sleep or appetite) that may be non-pathological in this population.

SCREENING INTERVALS

Recommendation

In the OB setting, PMAD screening will be performed at New OB, prenatal 28-32-week, lactation problem, and 6-week postpartum visits.

Rationale

"There is little evidence regarding the optimal timing for screening" and a "pragmatic approach" should be used (Siu, 2016).

Women are significantly more likely to complete follow up mental health evaluation if they had a positive depression screen prior to delivery compared to after delivery (Venkatesh et al., 2016).

Depression during pregnancy is one of the strongest risk factors for postpartum depression (Paschetta et al., 2014).

Postpartum depression tends to peak at 6 weeks, 2-3 months, and 6 months after delivery (Earls, 2010).

In the Emergency Department setting, women presenting with mental health concerns will be asked "are you pregnant, or have you been pregnant within the past year?" If the response if affirmative, case managers will administer the EPDS.

Standardized screening and data integration into the EHR (as a searchable value) will help identify at-risk patients and help direct resource utilization.

SCREENING AND RECORDING RESULTS IN THE MEDICAL RECORD

Recommended process

In the OB office or the ED, the nurse/case manager will give the patient a clipboard with a paper copy of the EPDS and allow them to complete it privately. The nurse/case manager will review the score, enter the responses into the EHR, and communicate the results to the provider (in the ED this includes the ED provider and the on-call psychiatrist).

Rationale

The EPDS is designed to be self-administered. Values can be quickly recorded in an EPIC EPDS flow-sheet allowing quick, easy access by clinicians across the spectrum of care. (Until the KH transition to EPIC, outpatient scores will be recorded in NextGen and ED scores into Meditech.)

RECOMMENDED ACTIONS BASED ON SCORES

Recommendation

The provider will review the EPDS results and follow up directly with the patient on any positive responses.

Special attention should be given to any positive responses to #10 ("Are your worries or mood changing the way you do things? Are you having any scary thoughts?")

For scores <10: (minimal symptoms)
Scores <6: Provide encouragement, supportive counseling, education, and encourage the patient to reach out if symptoms change (increase).
Scores of 6=9: s As above; follow up at future visits and consider repeat screens.

For scores 10-12: (mild to moderate symptoms)
Discuss self-care, sleep hygiene, and coping strategies. Offer referral to counseling.

For scores of >12 (suggestive of major depression) OR positive response to Question #10:
Assess for safety: is there an acute concern for psychiatric illness? (potential for harm to self/others; inability to care for self/baby?)

- ***Yes:*** If immediate concern for harm to self or others, arrange for patient to go directly to the ED.
- ***No:*** Refer to counseling; consider use of antidepressant medication, consider consultation with/referral to psychiatric provider.

Rationale

The EPDS is not diagnostic; further clinical evaluation is needed to assess symptom severity and impact.

Sound clinical judgment should be used in interpreting responses/assessing risk.

Suggested actions refer primarily to the outpatient setting; in the ED clinician judgment should be used to determine whether the patient meets criteria for admission and if admission is the most appropriate intervention.

METHOD FOR TRANSFERING CARE

Recommendation	Rationale
In the OB clinic, the clinician will ask the patient if she is currently established with a mental health provider (prescriber, and/or therapist). • ***Yes:*** She will be referred back to that provider for follow up. A designee in the OB office will contact the mental health clinician's office with the results of the EPDS and to coordinate care. • ***No:*** She will be referred to the OB social worker, ideally with a warm hand-off. ***For any OB office patient with an EPDS score => 12:*** The OB social worker will attempt to contact the patient by phone for follow up within 72 hours. In the ED, clinician judgment should be used to determine whether the patient meets criteria for admission and if admission is the most appropriate intervention.	Prompt linkage to mental health care helps improve outcomes (Pace et al., 2018). Close communication between the OB and mental health providers is critical.

IDEAL INTEGRATED MENTAL HEALTH MODEL

Recommendation	Rationale
In the proposed model, mental health services would be co-located in the outpatient OB office.	Co-location improves treatment adherence because it normalizes treatment and reduces stigma (Gjerdingen, Katon & Rich, 2008).
A full-time clinician (ideally a social worker) would work in the OB office providing crisis intervention, case management, and psychotherapy.	A social worker (LCSW, LMSW) is ideally suited to match the varying needs of this population. They can help the patient navigate the healthcare system and can provide direct clinical care. Follow through rates improve when social workers are embedded in the OB clinic (Venkatesh et al., 2016).
A part-time psychiatric nurse practitioner would work in the OB office providing diagnostic assessment, consultations, and medication management. These services would be available to patients from across the community, not restricted to Kootenai Health clients. Phone consultation could be available outside office hours.	The NP would have the flexibility to assume full care of some patient's mental health needs, especially in complicated cases that OB providers are not comfortable handling, or to provide clinical consultation to the KH and community providers to optimize resource utilization (Gjerdingen, Katon & Rich, 2008).

TALKING TO PATIENTS ABOUT PMADS

Concern	Suggested Response
Women might be reluctant to seek help because of shame.	Provide reassurance and emphasize the need for support.
PMADs can alter women's perceptions of themselves; they may blame themselves for what they're experiencing. What we call symptoms, she calls failure.	It is important to normalize women's experiences without minimizing them. "These symptoms are so difficult and common."
Women might feel self-conscious when screened for PMADs.	"It is not easy being pregnant/a new mother and it's ok to feel unhappy at times. We want to know how you're feeling. We are asking all our pregnant and postpartum patients to take this short questionnaire."
Once recovery begins, she may have a symptom relapse.	Continue to reassure: "It's really normal, like any recovery, to have a slip." Reflect on progress, reassure. "We can get you back on track."

ADDITIONAL RESOURCES

For patients

Postpartum Support International helpline:
(non-emergent)
Call: 800-944-4773
Text: 503-894-9453

Postpartum Support International online support groups:
www.postpartum.net/get-help/psi-online-support-meetings/

National Suicide Prevention Hotline:
800-273-TALK (8255)

Crisis Text Line:
Text "TALK" to 741741

North Idaho Crisis Center
208-625-4884
2195 Ironwood Court, Suite D
Coeur d'Alene, ID 83864

Mommy and Me Social Hour
Educational support group for new moms
2nd and 4th Friday of each month, 10-11 am
Kootenai Clinic, 1919 Lincoln Way
Second floor classroom
Coeur d'Alene, ID 83864
208-625-5086

Deep Waters Bereavement
Perinatal loss support group
@deepwatersbereavement on Facebook
homesteadmamadoula@gmail.com
425-306-7767

For professionals

Kootenai Health PMAD psychiatric nurse practitioner consult:
XXX-XXX-XXXX

Postpartum Support International Perinatal Psychiatric Consult Line:
800-944-4773, ext 4

MGH Center for Women's Mental Health
Online resource from Massachusetts General Hospital offers literature reviews, links to research programs, and apps.
www.womensmentalhealth.org

References

American College of Obstetricians and Gynecologists. (2018). *ACOG Postpartum Toolkit.* Retrieved from https://www.acog.org/-/media/Departments/Toolkits-for-Health-Care-Providers/Postpartum-Toolkit/2018-Postpartum-Toolkit.pdf?dmc=1&ts=20190124T2050247724

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Beck, C. T., & Gable, R. K. (2001). Comparative Analysis of the Performance of the Postpartum Depression Screening Scale With Two Other Depression Instruments. *Nursing Research,50*(4), 242-250. doi:10.1097/00006199-200107000-00008

Cox, E. Q., Sowa, N. A., Meltzer-Brody, S. E., & Gaynes, B. N. (2016). The Perinatal Depression Treatment Cascade. *The Journal of Clinical Psychiatry,*1189-1200. doi:10.4088/jcp.15r10174

Earls, M. F. (2010). Incorporating Recognition and Management of Perinatal and Postpartum Depression Into Pediatric Practice. *Pediatrics,126*(5), 1032-1039. doi:10.1542/peds.2010-2348

Evans, K., Spiby, H., & Morrell, C. J. (2015). A psychometric systematic review of self-report instruments to identify anxiety in pregnancy. *Journal of Advanced Nursing*, *71*(9), 1986–2001. doi: 10.1111/jan.12649

Evans, M. G., Phillippi, S., & Gee, R. E. (2015). Examining the Screening Practices of Physicians for Postpartum Depression: Implications for Improving Health Outcomes. *Womens Health Issues,25*(6), 703-710. doi:10.1016/j.whi.2015.07.003

Fairbrother, N., Young, A. H., Janssen, P., Antony, M. M., & Tucker, E. (2015). Depression and anxiety during the perinatal period. *BMC Psychiatry,15*(1), 1-9. doi:10.1186/s12888-015-0526-6

Gavin, N. I., Gaynes, B. N., Lohr, K. N., Meltzer-Brody, S., Gartlehner, G., & Swinson, T. (2005). Perinatal Depression. *Obstetrics & Gynecology,106*(5, Part 1), 1071-1083. doi:10.1097/01.aog.0000183597.31630.db

Gjerdingen, D., Katon, W., & Rich, D. E. (2008). Stepped Care Treatment of Postpartum Depression. *Womens Health Issues,18*(1), 44-52. doi:10.1016/j.whi.2007.09.001

Glover, V. (2014). Maternal depression, anxiety and stress during pregnancy and child outcome; what needs to be done. *Best Practice & Research Clinical Obstetrics & Gynaecology,28*(1), 25-35. doi:10.1016/j.bpobgyn.2013.08.017

Hanley, G. E., & Oberlander, T. F. (2014). The effect of perinatal exposures on the infant: Antidepressants and depression. *Best Practice & Research Clinical Obstetrics & Gynaecology,28*(1), 37-48. doi:10.1016/j.bpobgyn.2013.09.001

Hoffman, C., Dunn, D. M., & Njoroge, W. F. (2017). Impact of Postpartum Mental Illness Upon Infant Development. *Current Psychiatry Reports,19*(12). doi:10.1007/s11920-017-0857-8

Khoramroudi, R. (2018). The prevalence of posttraumatic stress disorder during pregnancy and postpartum period. *Journal of Family Medicine and Primary Care, 7*(1), 220-223. doi:10.4103/jfmpc.jfmpc_272_17

Mandelli, L., Souery, D., Bartova, L., Kasper, S., Montgomery, S., Zohar, J., … Serretti, A. (2016). Bipolar II disorder as a risk factor for postpartum depression. *Journal of Affective Disorders*, *204*, 54–58. doi: 10.1016/j.jad.2016.06.025

Mcbride, H. L., Wiens, R. M., Mcdonald, M. J., Cox, D. W., & Chan, E. K. (2014). The Edinburgh Postnatal Depression Scale (EPDS): A Review of the Reported Validity Evidence. *Validity and Validation in Social, Behavioral, and Health Sciences Social Indicators Research Series*, 157-174. doi:10.1007/978-3-319-07794-9_9

Milgrom, J., & Gemmill, A. (2014). Screening for perinatal depression. *Best Practice & Research Clinical Obstetrics and Gynaecology,28*, 13-23.

Myers, E. R., Aubuchon-Endsley, N., Bastian, L. A., Gierisch, J. M., Kemper, A., R., Swamy, G. K.,…Sanders, G. D. *Efficacy and Safety of Screening for Postpartum Depression [Comparative Effectiveness Review No. 106].* Rockville, MD: Agency for Healthcare Research and Quality; 2013.

O'Connor, E., Rossom, R. C., Henninger, M., Groom, H. C., & Burda, B. U. (2016). Primary Care Screening for and Treatment of Depression in Pregnant and Postpartum Women. Evidence Report and Systematic Review for the US Preventive Services Task Force. *Jama,315*(4), 388. doi:10.1001/jama.2015.18948

O'Hara, M. W., & Wisner, K. L. (2014). Perinatal mental illness: Definition, description and aetiology. *Best Practice & Research Clinical Obstetrics & Gynaecology,28*(1), 3-12. doi:10.1016/j.bpobgyn.2013.09.002

Palladino, C., Singh, V., Campbell, J., Flynn, H., & Gold, K. (2011). Homicide and suicide during the prenatal period: Findings from the National Violent Death Reporting System. *Obstetrics & Gynecology, 118*, 1056-1063. doi:10.1097/AOG.0b013e31823294da

Paschetta, E., Berrisford, G., Coccia, F., Whitmore, J., Wood, A., Pretlove, S., & Ismail, K. (2014). Perinatal psychiatric disorders: An overview. *American Journal of Obstetrics & Gynecology,June*, 501-509. doi:doi:10.1016/j.ajog.2013.10.009

Postpartum Support International. (n.d.) Retrieved August 18, 2018 from https://www.postpartum.net/

Sharma, V., & Xie, B. (2011). Screening for postpartum bipolar disorder: Validation of the Mood Disorder Questionnaire. *Journal of Affective Disorders,131*(1-3), 408-411. doi:10.1016/j.jad.2010.11.026

Siu, A. L., & US Preventive Services Task Force (USPSTF). (2016). Screening for depression in adults: US Preventive Services Task Force recommendation statement. *JAMA: Journal of the American Medical Association, 315*(4), 380-387.

Toler, S., Stapleton, S., Kertsburg, K., Callahan, T. J., & Tolsma, M. H. (2018). Screening for postpartum anxiety: A quality improvement project to promote the screening of women suffering in silence. *Midwifery,62*, 161-170. doi:10.1016/j.midw.2018.03.016

Venkatesh, K. K., Kaimal, A., Nadel, H., Blewett, D., Freeman, M., & Riley, L. (2016). 209: Implementation of universal screening for depression during pregnancy: Feasibility and impact on obstetric care. *American Journal of Obstetrics and Gynecology,214*(1). doi:10.1016/j.ajog.2015.10.246

Yawn, B. P., Olson, A. L., Bertram, S., Pace, W., Wollan, P., & Dietrich, A. J. (2012). Postpartum Depression: Screening, Diagnosis, and Management Programs 2000 through 2010. *Depression Research and Treatment, 2012*, 1-9. doi:10.1155/2012/363964