

IDENTIFYING AND TREATING MATERNAL DEPRESSION: STRATEGIES & CONSIDERATIONS FOR HEALTH PLANS

NIHCM FOUNDATION ISSUE BRIEF
JUNE 2010



NIHCM
FOUNDATION

INTRODUCTION

Approximately 10 to 20 percent of women experience depression either during pregnancy or in the first 12 months postpartum.¹ Maternal depression can lead to serious health risks for both the mother and infant, increasing the risk for costly complications during birth and causing long-lasting or even permanent effects on child development and well-being. Despite the fact that the health risks and costly complications associated with maternal depression are well-documented, pregnant women and new mothers experiencing depression often do not get the treatment they need due to fear of discussing mental health concerns with their providers or a lack of education about depression. According to the 2002 Listening to Mothers Survey, nearly six out of ten women scoring 13 or higher on the Edinburgh Postnatal Depression Scale (indicating that they were likely to be suffering some degree of depression) had not seen a professional for concerns about their mental health since giving birth.² Furthermore, since screening is not standard practice for most providers, maternal depression often goes undiagnosed and therefore untreated.

Over the past decade, maternal depression has received increased attention on several fronts. The release of the Surgeon General's Report on Mental Health in 2000 was followed by a rise in media attention on postpartum depression and postpartum psychosis. Federal support for screening and treating maternal depression also rose during this time with Congress earmarking funding for the Health Resources and Services Administration's Maternal and Child Health Bureau (MCHB) to address perinatal depression in 2004. MCHB continues to fund activities across the country in support of early identification and treatment

of perinatal depression.³ The Healthy People 2010 framework initially included a sub-objective to reduce hospitalizations due to postpartum complications, including postpartum depression, but it was eliminated during midcourse review due to a lack of supporting data.⁴ However, reflecting the continued widespread prevalence of maternal depression, the American Congress of Obstetricians and Gynecologists (ACOG) recently suggested an objective for Healthy People 2020 targeted at increasing the proportion of pregnant and postpartum women who receive screening for maternal depression and referral for evidence-based therapy.⁵

Health plans play an important role in ensuring early identification of maternal depression and coordinating management of care following a diagnosis. Health plans have an opportunity to pinpoint those at highest risk by encouraging obstetricians, pediatricians, primary care physicians and other health care professionals to screen for maternal depression, raising awareness of maternal depression through patient education in maternity programs and offering access to nurse case management during the pregnancy and postpartum period. Such simple interventions could have a substantial impact on the number of maternal depression diagnoses and would aid in the prevention of further complications and unnecessary costs.

In this issue brief we review the various forms of maternal depression, symptoms and prevalence in the United States, the costs (including monetary, life course and developmental impacts), current screening tools and recommendations for early identification and treatment of maternal depressive disorders, and barriers to diagnosis and access to treatment and care. Lastly, we share opportunities for health plans to play an active role

in supporting a comprehensive approach to care that will facilitate early identification of maternal depression and proper referral to evidence-based treatment.

DEFINITIONS

Maternal depression is an all-encompassing term for a spectrum of depressive conditions that can affect mothers (up to twelve months postpartum) and mothers-to-be. These depressive conditions include prenatal depression, postpartum depression and postpartum psychosis. Maternal depression is increasingly recognized as a worldwide public health issue and can have a negative impact on an individual's life that is far reaching, affecting work, family and the health and development of the baby. **Table 1** provides a detailed overview of conditions related to maternal depression, their usual time of onset, and their prevalence and symptoms.

Prenatal Depression

Prenatal depression encompasses major and minor depressive episodes beginning during pregnancy and lasting up to six months to a year after pregnancy.⁶ Evidence suggests that women experiencing prenatal depression may have an underlying vulnerability to changing hormone levels which trigger the onset of symptoms.⁷ In addition to hormonal changes, genetics, psychosocial factors and life stressors all play a role in triggering a prenatal depressive episode. However, because pregnancy involves a variety of changes in mind and body due to fluctuating hormone levels, distinguishing between symptoms of depression and normal responses to stressful experiences of pregnancy can be difficult. In general, the symptoms of prenatal depression parallel those of major depression and those experienced in postpartum depression. It is a serious, but treatable disorder.

Baby Blues

Pregnancy is a particularly stressful time for a woman; she experiences a number of hormonal and physical changes that can make her act and feel differently than

she would normally. Labor and delivery, in addition to caring for a newborn, bring another level of stress, especially for a first time mother. It is physically and mentally draining on a woman, which is why so many women experience what is referred to as the "baby blues" or "postpartum blues." Because it affects the majority of mothers, the baby blues is not considered a form of maternal depression. Mothers experience a range of emotions that are a common reaction the first few days after delivery. However, if these symptoms persist for more than two weeks, the mother may be experiencing postpartum depression, which requires medical attention. In contrast, symptoms of the baby blues will disappear fairly quickly with the patience and support of family and social networks.⁸

Postpartum Depression

Postpartum depression is an affective mood disorder with symptoms similar to those of the baby blues; however the primary distinguishing factor is that these symptoms will persist beyond the first two weeks after the baby is born. Symptoms can occur immediately after birth and up to one year after delivery. Undiagnosed depression during pregnancy is the number one risk factor for postpartum depression. A mother experiencing postpartum depression will generally experience at least five of the symptoms identified in **Table 1**.⁹ Many of the symptoms are difficult to assess in the postpartum period as they must be differentiated from "normal" conditions of being a new mother. This is especially true for first time mothers. These difficult-to-distinguish symptoms include insomnia or hyperinsomnia, significant decrease or increase in appetite, moderate to severe anxiety and some somatic symptoms, such as headaches or chest pains.

Postpartum Psychosis

Postpartum psychosis is a rare but serious disorder requiring immediate psychiatric evaluation and medical attention. This condition usually presents within the first few days to a month after delivery, though it can occur up to a year after the baby is born. Unlike other forms of maternal depression, symptoms may develop rapidly. Mothers with postpartum psychosis will experience

TABLE 1. TYPES, PREVALENCE, AND SYMPTOMS OF MATERNAL DEPRESSION & RELATED CONDITIONS

Type	Onset	Prevalence	Symptoms ⁱ
Prenatal depression	During pregnancy	10 to 20 percent of pregnant mothers	<ul style="list-style-type: none"> • Crying, weepiness • Sleep problems • Fatigue • Appetite disturbance • Anhedonia • Anxiety • Poor fetal attachment • Irritability
Baby blues	<p>Begins during the first few weeks after delivery (usually in first week, peaking at 3 to 5 days)</p> <p>Symptoms usually resolve by two weeks after delivery</p>	As high as 80 percent of new mothers	<ul style="list-style-type: none"> • Crying, weepiness • Sadness • Irritability • Exaggerated sense of empathy • Anxiety • Mood lability ("ups" and "downs") • Feeling overwhelmed • Insomnia; trouble falling or staying asleep; Fatigue/exhaustion • Frustration
Postpartum depression	Usually within the first two to three months postpartum, though onset can be immediate after delivery (distinguishable from "baby blues" as it lasts beyond two weeks postpartum)	10 to 20 percent of new mothers	<ul style="list-style-type: none"> • Persistent sadness • Frequent crying, even about little things • Poor concentration or indecisiveness • Difficulty remembering things • Feelings of worthlessness, inadequacy or guilt • Irritability, crankiness • Loss of interest in caring for oneself • Not feeling up to doing everyday tasks • Psychomotor agitation or retardation • Fatigue, loss of energy • Insomnia or hyperinsomnia • Significant decrease or increase in appetite • Anxiety manifested as bizarre thoughts and fears, such as obsessive thoughts of harm to the baby • Feeling overwhelmed • Somatic symptoms (headaches, chest pains, heart palpitations, numbness and hyperventilation) • Poor bonding with the baby (no attachment), lack of interest in the baby, family or activities • Loss of pleasure or interest in doing things one used to enjoy (including sex) • Recurrent thoughts of death or suicide

TABLE 1. TYPES, PREVALENCE, AND SYMPTOMS OF MATERNAL DEPRESSION (CONTINUED)

Type	Onset	Prevalence	Symptoms ⁱ
Postpartum psychosis ⁱⁱ	Usually starts within 2 to 4 weeks of delivery, but can start as early as 2 to 3 days after delivery (and can occur anytime in the first year)	1-2 per 1,000 new mothers	<ul style="list-style-type: none"> • Auditory hallucinations and delusions (often about the baby and often of a religious nature) • Visual hallucinations (often in the form of a seeing or feeling a presence of darkness) • Insomnia • Hopelessness • Feeling agitated, angry • Anxiety • Paranoia, distrusting of others • Delirium • Confusion • Mania (hyperactivity, elated mood, restlessness) • Suicidal or homicidal thoughts • Bizarre delusions and commands to harm the infant

Sources:

1. Jellinek M, Patel BP, Froehle MC, eds. *Bright Futures in Practice: Mental Health—Volume I. Practice Guide*. Arlington, VA: National Center for Education in Maternal and Child Health. 2002;308-316.
2. Understanding Maternal Depression: A fact sheet for care providers, New York State Department of Health & Office of Mental Health, May 2005.
3. Depression During and After Pregnancy: A Resource for Women, Their Family, and Friends. Health Resources and Services Administration, November 2006. Available at www.mchb.hrsa.gov/pregnancyandbeyond/depression.
4. Gaynes BN, Gavin N, Meltzer-Brody S, Lohr KN, Swinson T, Gartlehner G, Brody S, Miller WC. Perinatal Depression: Prevalence, Screening Accuracy, and Screening Outcomes. Agency for Healthcare Research and Quality. Evidence Report/Technology Assessment, Number 119, 2005.

both depressive symptoms and psychotic symptoms as described in **Table 1**. Women who suffer from or have a familial history of bipolar illness (manic depression) or another psychiatric disorder have a significantly higher risk for developing this form of maternal depression.¹⁰ Women suffering from the disorder have a 5 percent rate of suicide and 4 percent rate of infanticide.¹¹

MATERNAL DEPRESSION PREVALENCE

Depression is a significant health problem, affecting approximately 18 million Americans annually.^{12,13} Research has consistently shown that in the U.S. and other countries twice as many women as men experience major depression and dysthymia, or chronic low-level

depression, most commonly during their reproductive years.^{14,15} It is estimated that one in five women in the U.S. will develop depression at some point in her life, with that risk peaking during childbearing years.^{16,17} In fact, women in their childbearing years account for the largest group of Americans with depression.¹⁸

Obtaining a clear picture of the data on maternal depression is difficult as there is wide variation among the published estimates of prevalence and incidence of depression in the prenatal and postpartum periods. The Agency for Healthcare Research and Quality (AHRQ) published a systematic review as part of its Evidence-based Practice Program in 2005 reviewing 30 studies that provided estimates of the prevalence and incidence of maternal depression. In order to be included

ⁱ The symptoms listed in this table represent a general overview of conditions and feelings a woman with that form of maternal depression might be experiencing; these are not the same as the more exclusive list of symptoms a physician would use to make a DSM-IV diagnosis of major or minor depression.
ⁱⁱ Postpartum psychosis is a psychiatric emergency requiring hospitalization (without proper attention and treatment, both the mother and baby are at risk).

TABLE 2. PREVALENCE AND INCIDENCE OF MATERNAL DEPRESSION

	Period Prevalence	
Depression Type	During Pregnancy	Postpartum (after 3 months)
Major depression	12.7 percent	7.1 percent
Major and minor depression combined	18.4 percent	19.2 percent
	Incidence	
Depression Type	During Pregnancy	Postpartum (after 3 months)
Major depression	7.5 percent	6.5 percent
Major and minor depression combined	14.5 percent	14.5 percent

Source:

Gavin NI, Gaynes BN, Lohr K, Meltzer-Brody W, Gartlehner G, Swinson T. Perinatal Depression: A Systematic Review of Prevalence and Incidence. *Obstetrics & Gynecology*. 2005; 106: 5(1), 1071-83.

in the review, the study had to confirm the depression diagnosis through a clinical assessment or structured clinical interview; studies that relied on self-reporting of depression were excluded. **Table 2** summarizes the estimates found in these 30 studies. Period prevalence rates depict the percentage of the population with depression over a period of time while incidence rates are the percentage of the population with new depressive episodes occurring during the specific time period.

Other information can be gleaned from the Pregnancy Risk Assessment Monitoring System (PRAMS), an ongoing state-level, population-based surveillance system administered by the Centers for Disease Control and Prevention (CDC) and state health departments. PRAMS identifies and monitors selected maternal experiences before, during and after pregnancy. PRAMS is designed to be representative of women in participating states who have delivered in the preceding two to six months.¹⁹ In the 2007 PRAMS survey, rates of self-reported postpartum depressive symptoms were

collected from 23 statesⁱⁱⁱ and ranged from 10.9 percent in Maine to 17.9 percent in Delaware.²⁰ Since data from the PRAMS survey are based on patient self-report and are not confirmed by physician diagnosis, these rates should not be equated to studies that utilize screening tools to diagnose depression.

RISK FACTORS FOR MATERNAL DEPRESSION

There is evidence that a number of risk factors are associated with maternal depression. Women experiencing these risk factors should be watched carefully by providers and screened regularly during pregnancy and postpartum. Risk factors include: a history of mood disorders, substance abuse problems or history of alcohol dependence, maternal depression from a previous pregnancy, depression or family history of depression, life stress, poor marital relationships, low social status, lack of social support or absence of a community network, and unplanned or unwanted

iii Alaska, Colorado, Delaware, Georgia, Hawaii, Maryland, Massachusetts, Maine, Minnesota, Missouri, Nebraska, Nebraska, New York (excluding New York City), North Carolina, Ohio, Oregon, Rhode Island, South Carolina, Utah, Vermont, Washington, Wisconsin and Wyoming.

pregnancy.^{21, 22, 23, 24} Some studies have suggested a link between difficult delivery and depressive symptoms, though a clear link with postpartum depression has not been established.^{25, 26, 27}

Race/ethnicity, age and socioeconomic status are also predictors of maternal depression. Rates of depressive symptoms are estimated to be as high as 35 percent in African American women.²⁸ While estimated prevalence rates among Latina women vary from high to very low, low-income Latina women have uniformly high prevalence rates.²⁹ Regardless of race, research suggests low-income women are particularly at risk. In a study of 17 Early Head Start programs, which serve low-income children, 52 percent of the mothers reported depressive symptoms.³⁰ A study of young mothers at community pediatric health centers found that an average of 40 percent screened positive for depressive symptoms. Pregnant and parenting adolescents also face a higher risk of PPD (**Figure 1**).³¹

Data from the 2004–2005 PRAMS survey confirm the importance of race/ethnicity, age and socioeconomic status as maternal depression predictors. According to data from the 17 states reporting on the prevalence of self-reported postpartum depression in those years, younger women, those with lower educational attainment, and women who received Medicaid benefits for their deliveries were more likely to report postpartum depressive symptoms (PDS). In 13 of 16 states^{iv} for which race/ethnicity data were available, a significant association was observed between race/ethnicity and PDS, with non-Hispanic white women having a lower prevalence of PDS compared with women of other racial/ethnic groups. PRAMS is also useful in identifying other risk factors for postpartum depression. Tobacco usage during the last three months of pregnancy, physical abuse before or during pregnancy, partner-related stress during pregnancy,^v traumatic stress during pregnancy, and financial stress during pregnancy were significantly associated with a higher likelihood of self-reported postpartum depressive symptoms in all or nearly all of the 17 states.³²

Women have an elevated risk for new-onset depression in the first postpartum year, with approximately 45 to 65 percent of ever-depressed women having their first episode of depression during their first postpartum year.^{33, 34, 35, 36, 37} Evidence suggests that some women have an underlying vulnerability to changing hormones which then triggers the onset of depressive symptoms. Thus, women with a history of postpartum depression may have an increased stress response measured by higher levels of the stress hormone cortisol.³⁸ The most serious risk factor for maternal depression is a previous episode of prenatal or postpartum depression. Approximately 50 to 62 percent of women with a history of postpartum depression and 33 percent of women with a history of perinatal depression will experience depression during or after a next pregnancy.³⁹ In contrast, only 2 to 5 percent of women without a history of depression are likely to develop postpartum depression after a next delivery.⁴⁰

EARLY IDENTIFICATION AND TREATMENT OF MATERNAL DEPRESSION

Depression is a highly treatable condition, especially when identified early during the pregnancy or postpartum period. Identification of mothers who are at risk for prenatal and postpartum depression enables health professionals to initiate services that can prevent later problems for both the mother and baby, and interventions can be provided by both obstetric and primary care health professionals working with the family before, during and after delivery.⁴¹ Unfortunately, screening for maternal depression is not standard, and treatment does not always follow a diagnosis.

Several studies have been conducted to assess screening practices among obstetrician-gynecologists (OB/GYNs) and pediatricians. A survey of OB/GYNs by LaRocco-Cockburn et al. found that 44 percent of respondents often or always screen for depression,^{vi} 41 percent sometimes screen for depression, and 15 percent never screen for depression.⁴² Only 32 percent of the survey respondents reported using a short, validated screening tool administered by a health

iv Vermont did not include information on race/ethnicity.

v The significant associations between PDS and experiencing partner-related stress or physical abuse indicated in this report are consistent with previous research [Gross KH, Wells CS, Radigan-Garcia A, Dietz PM. Correlates of self-reports of being very depressed in the months after delivery: results from the Pregnancy Risk Assessment Monitoring System. *Maternal Child Health Journal* 2002;6(4): 247–253].

FIGURE 1. RISK FACTORS FOR DEPRESSION IN PREGNANT AND PARENTING ADOLESCENTS

The age of the mother is an additional risk factor for developing perinatal and postpartum depression. Several studies have confirmed that the rates of depressive symptoms among adolescent mothers are higher than rates among adult mothers and nonpregnant/parenting adolescents.¹ Adolescent mothers are at heightened risk for developing depression during pregnancy and postpartum due to the unique challenges of this developmental period. Adolescence is already a time of rapid metabolic, hormonal, physiologic, and developmental changes, and pregnancy adds another layer of complexity with additional physiologic and psychological changes.² Compared to adult mothers, adolescent mothers tend to be more socially isolated, experience higher levels of parenting stress, have lower self-esteem and confidence, and experience family conflict, all of which have been found to be associated with depressive symptoms among adolescent mothers.³ The physical, emotional and financial demands of motherhood can impact a young mother's academic functioning, career aspirations, and her relationships with friends and family, contributing to additional emotional distress during the postpartum period.⁴

1. Schmidt RM, Weimann CM, Rickert VI, O'Brian Smith E. Moderate to severe depressive symptoms among adolescent mothers followed four years postpartum. *Journal of Adolescent Health*, 2006;38:712-718.

2. McClanahan KK. Depression in Pregnant Adolescents: Considerations for Treatment. *Journal of Pediatric and Adolescent Gynecology*, 2009;22:59-64.

3. Ibid.

4. Yozwiak JA. Postpartum Depression and Adolescent Mothers: A Review of Assessment and Treatment Approaches. *Journal of Pediatric and Adolescent Gynecology* 2009, online.

professional, and 16 percent reported using a validated patient self-report test. Another study conducted in an academic medical center outpatient population evaluated the use of the Edinburgh Postnatal Depression Scale (EPDS), a validated, self-administered screening tool. Researchers found that despite a recently instituted program designed to ensure universal screening, providers documented the EPDS scores on their patients' charts during only 39 percent of visits and counseled patients on their scores and/or depression during only 35 percent of visits.⁴³ Of particular note in this study was the statistically significant difference in documentation of screening scores by type of provider. Nurse practitioners reported the highest rate of documentation (94 percent), followed by certified nurse midwives (67 percent), attending physicians (42 percent), and residents (17 percent). Of those patients with a very high score on the EPDS, 75 percent were referred to a psychiatry unit for further evaluation.

Screening rates among pediatricians are even lower. A study of pediatricians found that only 8 percent of pediatricians routinely ask their patients' mothers about maternal depressive symptoms.⁴⁴ The majority of

pediatricians surveyed, 81 percent, reported relying on observation alone to diagnose maternal depression and none reported using a screening questionnaire.⁴⁵ This reliance on observation and lack of routine screening could be contributing to missed opportunities to diagnose maternal depression; another study found that pediatricians have been shown to fail to diagnose more than half of mothers who are depressed.⁴⁶

Further compounding the problem of low screening rates are two issues related to follow-up treatment. First, providers may not always refer patients for further evaluation and treatment upon identifying depressive symptoms, and women may not follow through with treatment. Second, treatment practices may not be effective in eliminating symptoms. A study by Kelly et al. reported that 38 percent of women surveyed screened positive for depression and/or substance abuse but only 23 percent of those women with positive screens had evidence of treatment recorded in their charts.^{47,48} Rates of follow-up care initiated by women are just as low; in a phone survey conducted in 2002, only 19 percent of respondents who reported a high score on the EPDS

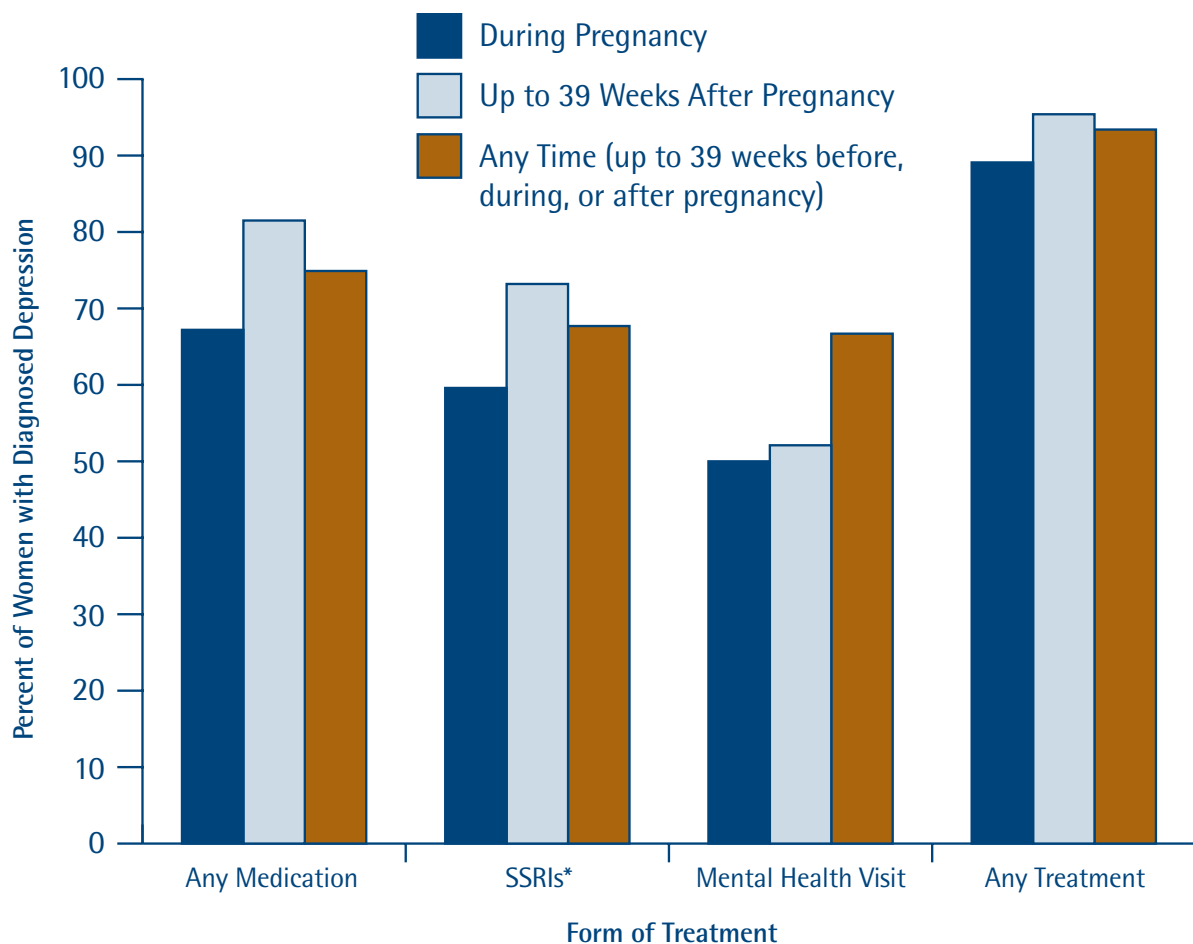
vi In this study, depression screening was defined as asking one's own chosen questions about mood and/or mental health, using a validated set of screening questions, using a patient self report screening tool or using a structured clinical interview in patients regardless of signs or symptoms. This broad definition limits the ability to say that physicians who reported screening are doing so in any uniform way, and in fact, the data showed that most obstetrician-gynecologists use an informal tool.

(above 13) and had given birth in the past two years said they had consulted a health care or mental health professional about their emotional or mental well-being since the birth.⁴⁹

Another study reported that only 50 percent of women who received a referral for treatment for depression accessed the follow-up treatment.⁵⁰ In addition, the course of treatment for maternal depression may not always be effective, especially in cases where an antidepressant is prescribed. Effective antidepressant treatment requires that an adequate dose of antidepressant medication be initiated, titrated as necessary, and maintained for a sufficient period.⁵¹

Women who are not diagnosed or who do not receive proper treatment for maternal depression are at risk of further complications that may result in psychiatric hospitalizations. In 2004 there were about 240,000 inpatient stays for a maternal condition that also had at least one diagnosis for a mental health or substance abuse condition – these stays represented about 5 percent of all inpatient stays for maternal conditions in that year.⁵² These women were disproportionately younger (ages 18-24), and the stay was more likely to be paid for by Medicaid than by other payers. Early identification and proper treatment of mental health or substance abuse issues among pregnant women and new mothers could help to reduce hospital stays and the associated costs.

FIGURE 2. AMONG WOMEN DIAGNOSED WITH DEPRESSION, PERCENT TREATED DURING AND AFTER PREGNANCY



* Selective serotonin reuptake inhibitors.

Source:

Dietz PM, Williams SB, Callaghan WM, Bachman DJ, Whitlock EP, Hornbrook MC. Clinically Identified Maternal Depression Before, During and After Pregnancies Ending in Live Births. *American Journal of Psychiatry*, 2007; 164(10):1515-20.

Treatment for maternal depression includes psychotherapy or pharmacotherapy or a combination of both. A survey of OB/GYNs and family practitioners identified the top three preferences for treatment of postpartum depression as antidepressants (96 percent), counseling conducted by themselves (64 percent), and referral to social workers or psychologists (54 percent).⁵³ Likewise, a study by Dietz et al. found that among women diagnosed with depression during and after pregnancy, antidepressants were the most common form of treatment (**Figure 2**).⁵⁴ In contrast to these studies on forms of treatment and physician preference are other studies showing that women prefer talk therapy over pharmacological interventions and do not think it is safe to take medications for depression during pregnancy or after delivering a baby.^{55,56} Dietz et al. concluded that medication use was, indeed, lower during pregnancy in their study, however they found no evidence that women replace medication use with therapy during pregnancy.

HEALTH RISKS OF PARENTAL DEPRESSION TO MOTHER & INFANT

Untreated depression among pregnant and postpartum women is of particular concern due to its adverse effects on the health of the mother and infant. Depressed women are more likely to engage in risk-taking behaviors while pregnant, including substance abuse, and may decrease their compliance with prenatal care putting themselves and their babies at risk for complications and poor birth outcomes. Pregnant women with depression are 3.4 times more likely to deliver preterm and four times as likely to deliver a baby with low birthweight than non-depressed women.⁵⁷ Undiagnosed and untreated maternal depression is also associated with increased rates of maternal suicide.⁵⁸

Postpartum depression is the most common complication associated with childbirth and can have a permanent impact on the health and development of an infant. Maternal depression threatens a mother's emotional and physical ability to care for her child and foster a healthy relationship with her child. Research has found that a secure attachment, or healthy emotional bond, between an infant and primary caregiver is key to the future emotional development of the child.⁵⁹

Children born to a mother who suffers from postpartum depression are more likely to lack this attachment and are therefore at increased risk for delayed or impaired cognitive, emotional and linguistic development. Children of depressed mothers are also more likely to experience worse long-term mental health problems. The male children of mothers with postpartum depression have been found to be more cognitively delayed than girls and display more outwardly violent behavior.⁶⁰ In addition to the impact on the infant's or child's mental health and development, the lack of a secure attachment between the mother and infant can also impact the mental health of the mother, putting her more at risk for developing maternal depression. Studies have shown that a child who minimally interacts with its mother may cause her to feel rejected and further discourage a depressed mother's efforts to develop mother-child intimacy.⁶¹

There is some research indicating that depression may also occur in fathers and adoptive parents, which could also adversely affect an infant's health. One study by Paulson, Dauber and Leiferman of 5,000 two-parent households found rates of depression at 14 percent for mothers and 10 percent for fathers.⁶² Depressive symptoms in men following the birth of a child can be attributed to stressful adjustments and the quality of the relationship with the mother. The strongest predictor of paternal postpartum depression appears to be a depressed partner; one study found that fathers whose partners were depressed were at nearly two-and-a-half times the normal risk for depression.⁶³ While the relationship between paternal postpartum depression and child development has not been widely studied, the quality of paternal care is important for a child's development and health. In fact, a study by Hossain et al. shows that responsive care provided by the father can prevent an infant from being negatively influenced during development by maternal postpartum depression.⁶⁴ Recent research has also found that adoptive parents are at risk for depression after bringing a child home, often stemming from unmet or unrealistic expectations of the parenting experience. Adoptive parents face unique struggles that may contribute to their risk for developing depression, including the immense amount of paperwork, expense, and in many cases, travel associated with the adoption process.⁶⁵

ECONOMIC CONSEQUENCES OF MATERNAL DEPRESSION

The costs of depression in the U.S. totaled \$83.1 billion dollars in 2000, including \$26.1 billion for direct medical costs, \$5.4 billion for suicide-related mortality costs and \$51.5 billion for workplace costs (absenteeism, presenteeism and disability).⁶⁶ The specific costs of maternal depression are unknown; however, women with depression generally have more expensive medical claims than men with depression, and pregnant women with untreated depression are at risk for costly complications, such as preterm birth. Children of depressed mothers may also have higher lifetime medical spending due to the adverse effects of postpartum depression on the child's own health. In fact, children with depressed mothers have been found to use health care services, including office and emergency room visits, more frequently than children of healthy women.⁶⁷

When undiagnosed and untreated, depression during pregnancy may lead to premature births, and this has substantial costs as well. In 2005 costs for all preterm births totaled at least \$26.2 billion, or \$51,600 for every infant born prematurely. Medical care for premature infants comprised 65 percent or \$16.9 billion of the total costs, maternal delivery costs were \$1.9 billion (7 percent), early intervention and special education services were \$1.7 billion (6 percent) and lost household and labor market productivity totaled \$5.7 billion (22 percent).⁶⁸ The first-year medical costs are ten times higher for preterm infants than full-term infants, including costs for both inpatient and outpatient care. In 2007 average medical costs for preterm infants were \$49,033 compared to \$4,551 for full-term infants.⁶⁹

RECOMMENDATIONS AND TOOLS FOR MATERNAL DEPRESSION SCREENING

While no national guidelines exist regarding recommended screening intervals for depression during pregnancy and the year following delivery, the U.S. Preventive Services Task Force (USPSTF) recommends regular depression screening for all adults, and several professional organizations specifically recommend periodic screening during the perinatal and postpartum periods. Despite the lack of comprehensive recommendations, there is

evidence that brief standardized depression screening instruments can accurately identify maternal depression. The Edinburgh Postpartum Depression Scale is the most widely used tool and numerous studies have found that it has moderate to good reliability in identifying women at high risk for postpartum depression.⁷⁰ OB/GYNs and pediatricians have several convenient opportunities to conduct screenings during prenatal office visits each trimester, the standard six-week postpartum visit and infant well-child visits. **Table 3** reviews the current recommendations for maternal depression screening.

A variety of tools exist for OB/GYNs and pediatricians to screen for maternal depression. In addition to screening instruments found effective in identifying depression in the general adult population, tools like the Edinburgh Postpartum Depression Scale and Postpartum Depression Screening Scale have been developed specifically to measure postpartum depression. As part of their recommendation to screen adults for depression in primary care settings, the USPSTF concluded that asking two simple questions, such as those included in the Patient Health Questionnaire-2, may be as effective as more formal instruments, and ACOG has endorsed the use of this two-question screen.^{75,76} **Table 4** includes descriptions of a variety of tools available to screen adults for depression, including several tools developed specifically for screening for maternal depression. See Appendix One for more information on how to access these screening tools.

It is important to understand the accuracy of these screening tools when considering their utilization among pregnant and postpartum women. Many of the screening instruments mentioned above have been validated for use in the adult population but have not been studied specifically for their reliability to identify depression among pregnant women and new mothers. Gaynes et al. conducted a review of ten studies to evaluate the accuracy of different screening tools, including the CES-D, EPDS, PDSS and Beck Depression Inventory (BDI).⁸⁶ The authors found that various screening instruments can identify maternal depression and that the EPDS and PDSS seemed to be more accurate in identifying depression. However, they concluded it was too difficult to determine the complete accuracy of any of these tools given the small sample sizes and populations of primarily white women in the

studies reviewed. The PHQ-9 has been studied in the general adult population and is referred to by some researchers as the "best available depression screening tool for primary care."⁸⁷ A recent study examined the validity of the PHQ-9 and PHQ-2 to screen postpartum women for depression at well-child visits. Gjerdingen et al. concluded that the two screening tools perform well together in a 2-stage procedure when the PHQ-2 is used as an initial screening test to identify postpartum

depression and then those women who test positive complete the PHQ-9 as a confirmatory test.⁸⁸ Most studies examining the accuracy of depression screening tools conclude that additional research is needed to identify the ideal tool and further suggest that the most useful tools are brief, inexpensive, easy to administer in busy practices, adaptable to specific patient populations and capable of measuring the change in severity of depressive symptoms in a patient over time.⁸⁹

TABLE 3. RECOMMENDATIONS FOR PERINATAL & POSTPARTUM DEPRESSION SCREENING

Organization	Recommendation
U.S. Preventive Services Task Force (USPSTF) ⁷¹	Recommends screening of adults, including pregnant and postpartum women, for depression when staff-assisted depression care supports are in place to assure accurate diagnosis, effective treatment and follow-up. Staff-assisted depression care supports are clinical staff that can provide direct depression care, such as care support or coordination, case management, or mental health treatment. Grade B recommendation. ^{vii}
American Congress of Obstetricians and Gynecologists Committee on Obstetric Practice (ACOG) ⁷²	Concludes there is insufficient evidence to support universal screening and insufficient data to recommend how often screening should be done. However, ACOG suggests screening be strongly considered due to the potential benefit to a woman and her family, and that women with positive screens receive follow-up evaluation and treatment. Also suggests medical practices put a referral process in place for identified cases of depression.
American Academy of Pediatrics Bright Futures ⁷³	Encourages pediatricians to support families as part of their role providing health care to children. The Bright Futures Guidelines include questions and anticipatory guidance that health care professionals can use to assess parental (maternal) well-being. Specific questions are provided to assess depressive symptoms and are tailored for use at the prenatal, newborn, first week, one-month and two-month visits.
AAP/ACOG Guidelines for Perinatal Care ⁷⁴	Prior to delivery, patients should be informed about psychosocial issues that may occur during pregnancy and in the postpartum period. A woman experiencing negative feelings about her pregnancy should receive additional support from the health care team. All patients should be monitored for symptoms of severe postpartum depression and offered culturally appropriate treatment or referral to community resources. Specifically, the psychosocial status of the mother and newborn should be subject to ongoing assessment after hospital discharge. Women with postpartum blues should be monitored for the onset of continuing or worsening symptoms because these women are at high risk for the onset of a more serious condition. The postpartum visit at approximately 4-6 weeks after delivery should include a review of symptoms for clinically significant depression to determine if intervention is needed.

vii The USPSTF recommends that practices offer or provide this service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.

TABLE 4. SELECTED SCREENING TOOLS FOR MATERNAL DEPRESSION

Screening Tool	Description
BDI®-FastScreen for Medical Patients (previously known as the Beck Depression Inventory-Primary Care version or BDI-PC) ⁷⁷	<ul style="list-style-type: none"> • Used to detect depressive symptoms • Completed by patient • Seven items, takes less than five minutes to complete
Center for Epidemiologic Study Depression Scale (CES-D) ⁷⁸	<ul style="list-style-type: none"> • Measures depressive feelings and behaviors over the past week • Completed by patient • 20 questions, takes about five minutes to complete
Edinburgh Postnatal Depression Scale (EPDS) ⁷⁹	<ul style="list-style-type: none"> • Created specifically to identify patients at risk for postpartum depression • Assesses symptoms of depression and anxiety • Completed by patient • Ten questions, takes five to ten minutes to complete • Most widely-used screening tool among pregnant and postpartum women
Hamilton Rating Scale for Depression (HAM-D) ⁸⁰	<ul style="list-style-type: none"> • Determines patient's level of depression before, during and after treatment • Administered by clinician • 21 items but scoring is based on first 17 questions • Takes 15-20 minutes to complete interview and to score results
Montgomery-Asberg Depression Rating Scale (MADRS) ⁸¹	<ul style="list-style-type: none"> • Used in patients with major depressive disorder to measure the degree of severity of depressive symptoms and the change in symptom severity during the treatment of depression • Administered by clinician • Ten-item checklist • Takes about fifteen minutes to complete
Patient Health Questionnaire-2 (PHQ-2) ⁸²	<ul style="list-style-type: none"> • Asks two simple questions about mood: 1) Over the past two weeks, have you ever felt down, depressed, or hopeless? 2) Over the past two weeks, have you felt little interest or pleasure in doing things? • Completed by patient or administered by clinician • Takes less than one minute to complete • Positive scores should be followed up with a more comprehensive screening tool • Endorsed by ACOG and USPSTF
Patient Health Questionnaire-9 (PHQ-9) ⁸³	<ul style="list-style-type: none"> • Screens for depression and can be used to monitor symptom severity during treatment • Completed by patient • Nine-item questionnaire, takes about five to ten minutes to complete and then can be quickly scored by staff or self-scored by patient
Postpartum Depression Screening Scale (PDSS) ⁸⁴	<ul style="list-style-type: none"> • Used to identify women at high-risk for postpartum depression • Completed by patient • 35-item questionnaire • Can be completed in five to ten minutes
RAND 3-Question Screen ⁸⁵	<ul style="list-style-type: none"> • 3-item adaptation of a 8-item depression screener • Completed by patient • Takes less than a minute to complete

STATE & FEDERAL SUPPORT FOR MATERNAL DEPRESSION SCREENING & TREATMENT

Federal and state governments are raising public awareness about maternal depression and implementing efforts to increase the availability of screening and treatment. Several states have passed laws mandating screening or education in order to improve maternal depression screening and treatment. In 2006 New Jersey became the first state in the U.S. to pass a law mandating universal screening, education and referral for postpartum depression. All hospitals in New Jersey that deliver babies now have a policy in place to screen all obstetric patients for postpartum depression prior to discharge. Staff from the New Jersey Department of Health and Senior Services provide education and support to the hospital staff responsible for conducting the screenings. The state also operates an around-the-clock Family Helpline that fields questions about PPD and maintains a website with educational materials as part of their public awareness campaign, "Speak Up When You're Down."⁹⁰ In 2007 Illinois passed a law requiring that licensed health care professionals provide education about perinatal mental health disorders as part of prenatal education and invite women to complete a screening questionnaire as part of prenatal, postnatal or infant care. The law further requires that all hospitals providing labor and delivery services offer new mothers and, if possible, fathers and other family members complete information about maternal mental health disorders prior to discharge following a delivery.⁹¹

Many states offer coverage of depression screening and treatment for pregnant women enrolled in Medicaid. The 2007/2008 State Survey of Reproductive Health Services Under Medicaid found that 38 states and the District of Columbia (DC) cover psychosocial risk assessments and 39 states and DC cover psychosocial counseling during pregnancy.⁹² In 2004 the Illinois Medicaid program became the first in the country to provide additional reimbursement to clinicians who perform depression screenings, a move that increased the number of screenings conducted in the state during pregnancy and up to a year postpartum. The instruments approved for reimbursement include the EPDS, BDI, PHQ-9, CES-D and PDSS. Additional resources provided in Illinois include training opportunities for clinicians, a 24-hour crisis hotline for women, and

a free consultation service for clinicians who have questions about detection, diagnosis and treatment. The consultation service is staffed by the University of Illinois at Chicago Women's Mental Health Program and has provided over 700 consultations since its creation.⁹³

At the federal level, support for improving screening for maternal depression screening was included as part of the federal health care reform law. The Patient Protection and Affordable Care Act, signed into law March 23, 2010, requires insurers to cover preventive care and screenings without any cost sharing, including screening for postpartum depression.⁹⁴ The law provides further support for screening by amending the Maternal and Child Health Services Block Grant (Title V of the Social Security Act) to provide \$3 million in new grants to states in 2010 to provide services to individuals with, or at risk of, postpartum depression and their families.⁹⁵ These activities will include delivering or enhancing home-based and support services, including case management and comprehensive treatments; inpatient care management services ensuring the well being of the mother, family and infant; improving support services (including transportation, attendant care, home maker services, respite care); providing counseling; promoting earlier diagnosis and treatment; and providing information to new mothers.

Support for research on postpartum conditions is also included in the health care reform law. The Secretary of Health and Human Services is encouraged to continue research to expand the understanding of the causes of and treatments for postpartum conditions, including support for the development of improved screening and diagnostic techniques. The National Institute of Mental Health is encouraged to conduct a study on the mental health consequences for women of resolving a pregnancy in various ways, including carrying the pregnancy to term and parenting the child, carrying to term and placing the child for adoption, miscarriage, and having an abortion. While these activities have been authorized, no funding has been appropriated to carry them out at this time.⁹⁶

As mentioned earlier, the federal HRSA's Maternal and Child Health Bureau (MCHB) also supports maternal depression screening. The Division of Healthy Start and Perinatal Service has for several years awarded funding to states and communities to focus on depression

during the perinatal period. A series of grants that ended in 2008 funded six states to address maternal depression with particular attention on the mother-infant dyad and the effects of maternal mental health problems on the mother-baby relationship and the social and emotional development of the infant. A series of demonstration grants awarded in August 2008 for a period of three years focuses on approaches to healthy weight and mental wellness in women. The grants are funding specific projects to develop, implement, evaluate and disseminate novel approaches to address the relationship between women's physical and mental health during the perinatal period. Depression screening is also a core element of the Healthy Start program, a community-based program funded by MCHB and focused on preventing infant mortality by getting women into prenatal care as early as possible. There are currently close to 100 funded projects, and all are using depression screening instruments among women treated by the program. Healthy Start is increasingly recognizing the important role of a mother's health during the preconception and interconception periods through a current project, the Interconception Care Learning Community, which aims to enrich the quality of care delivered in one of the six core components of the program over three years. Maternal depression is one of the core components grantees can select as the focus, and in the first cycle 18 of the projects selected this core component. One particular area of focus within this group of projects will be to improve referrals for mental health treatment. Outcome data will be available at the end of the three-year project.⁹⁷

MANAGING & TREATING MATERNAL DEPRESSION

Following a patient's positive diagnosis of maternal depression, clinicians face the difficult task of determining and overseeing a course of treatment for the woman or coordinating a referral to a mental health professional. ACOG and the American Psychiatric Association (APA) performed an extensive review of research in 2009 and outlined the first joint recommendations for managing depression during pregnancy (**Table 5**). Since there are no treatment guidelines specific to the course of treatment for postpartum depression, treatment should be tailored for each woman and her

family according to their individual circumstances. Psychotherapy and pharmacotherapy are the primary courses of outpatient treatment for depression during pregnancy and postpartum. Psychotherapy methods, such as interpersonal, cognitive-behavioral, and group and family therapies, have been proven effective in treating mild to moderate depression and are the preferred initial course of treatment in pregnant women and breastfeeding mothers if the woman is not already taking antidepressant medication. Studies have shown that as few as six to ten sessions of interpersonal therapy are equally as effective at relieving depressive symptoms as chemical antidepressants.⁹⁸ In some cases, it may be necessary to turn to pharmacotherapy or a combination of therapies when psychotherapy is insufficient in treating severe and recurrent depression.

Pharmacotherapy has been proven effective in treating moderate to severe depression. Selective serotonin reuptake inhibitors (SSRIs) or antidepressants are the most commonly prescribed pharmacotherapy for treating perinatal and postpartum depression. When considering the use of medications during pregnancy, the risks of antidepressant treatment must always be balanced with the risks associated with untreated depression. A woman's depression treatment history should be the primary criterion for choosing a medication; providers should avoid replacing a medication that has worked with one that may not work and avoid prescribing several medications at the same time. At this time the Food and Drug Administration (FDA) has not specifically approved any antidepressants for use during pregnancy and further recommends that providers caution pregnant patients about the risks and benefits of SSRI treatment during pregnancy.⁹⁹ Antidepressants have been the subject of substantial research for risks to infants associated with exposure during pregnancy, yet the data on risks are inconsistent. Current research on the effects of antidepressants on breastfeeding infants indicates minimal to no immediate side effects with the caveat that no established research exists on the long-term effects on the developing brain and nervous system.¹⁰⁰ The general clinical recommendation is for a breastfeeding mother to take any antidepressant medication immediately after breastfeeding and prior to infant's sleep to minimize exposure to peak drug concentrations.¹⁰¹ Screening and treating pregnant

TABLE 5. RECOMMENDATIONS FOR TREATING DEPRESSION DURING PREGNANCY

<p>Women thinking about getting pregnant</p>	<ul style="list-style-type: none"> • For women on antidepressant medication who have experienced mild or no symptoms for six months or longer, it may be appropriate to taper and discontinue medication before becoming pregnant. • Medication discontinuation may not be appropriate in women with a history of severe, recurrent depression (or who have psychosis, bipolar disorder, other psychiatric illness requiring medication, or a history of suicide attempts). • Women with suicidal or acute psychotic symptoms should be referred to a psychiatrist for aggressive treatment.
<p>All pregnant women</p>	<ul style="list-style-type: none"> • Regardless of circumstances, a woman with suicidal or psychotic symptoms should immediately see a psychiatrist for treatment.
<p>Pregnant women currently on medication for depression</p>	<ul style="list-style-type: none"> • Psychiatrically stable women who prefer to stay on medication may be able to do so after consultation between their psychiatrist and OB/GYN to discuss risks and benefits. • Women who would like to discontinue medication may attempt medication tapering and discontinuation if they are not experiencing symptoms, depending on their psychiatric history. Women with a history of recurrent depression are at a high risk of relapse if medication is discontinued. • Women with recurrent depression or who have symptoms despite their medication may benefit from psychotherapy to replace or augment medication. • Women with severe depression (with suicide attempts, functional incapacitation, or weight loss) should remain on medication. If a patient refuses medication, alternative treatment and monitoring should be in place, preferably before discontinuation.
<p>Pregnant women not currently on medication for depression</p>	<ul style="list-style-type: none"> • Psychotherapy may be beneficial in women who prefer to avoid antidepressant medication. • For women who prefer taking medication, risks and benefits of treatment choices should be evaluated and discussed, including factors such as stage of gestation, symptoms, history of depression, and other conditions and circumstances (e.g., a smoker, difficulty gaining weight).

Source:
 Yonkers KA, Wisner KL, Stewart DE, Oberlander TF, Dell DL, Stotland N, Ramin S, Chaudron L, Lockwood C. The Management of Depression During Pregnancy: A Report from the American Psychiatric Association and The American College of Obstetricians and Gynecologists. *Obstetrics & Gynecology*. 2009; 114(3):703-713.

and parenting adolescents for depression entails additional considerations about screening sites and antidepressant use (Figure 3).

BARRIERS TO IDENTIFYING & TREATING MATERNAL DEPRESSION

In addition to the lack of research on the effectiveness of screening tools and lack of national guidelines or

recommendations for screening and treating maternal depression, additional barriers and challenges persist in reaching this population of women. These challenges include the concerns of pregnant women/new mothers, physician barriers, workforce shortages, and coding and reimbursement limitations in private and public insurance.

Patient Barriers

Pregnant women and new mothers report many barriers to discussing depressive symptoms with pediatricians, OB/GYNs or other primary care providers. Focus groups conducted by Heneghan, Mercer and DeLeone found many mothers were reluctant to discuss depressive symptoms with their children's pediatricians due to mistrust and fear of judgment, especially if they felt they did not know the pediatrician well or feared being reported to child protective services.¹⁰² Other barriers to seeking care for depression include the social stigma, cost of treatment, concern that insurance does not cover care, lack of knowledge about the impact of depression on their own health and the health of their infants, and lack of knowledge about where to seek treatment. Time constraints, especially for new mothers, and a lack of access to child-care during postpartum visits, are additional concerns. Barriers to treatment include not following through with referrals to mental health professionals and reluctance to take medications, especially if a woman is breastfeeding and is concerned about the impact on her infant's health.¹⁰³

Organizational and Individual Physician Barriers

The recommendations discussed earlier in this brief support a role for both OB/GYNs and pediatricians in screening and treating depression during pregnancy and the postpartum period. Both of these groups of physicians have reported individual and organizational barriers that prevent them from taking on this role, and both have varying degrees of support for their role in identifying depression. For example, more than two of every five pediatricians surveyed by Olsen et al. said they did not believe it was their responsibility to recognize depression in new mothers.¹⁰⁴ These same pediatricians identified numerous individual and organizational barriers preventing them from recognizing or managing maternal depression. Physicians reported that they lacked confidence in their ability to diagnose depression and had incomplete training to diagnose, counsel and treat maternal depression.¹⁰⁵ Organizational barriers reported most commonly were inadequate time to provide counseling or education or to take an adequate health history from the patient. Other organizational

FIGURE 3. DEPRESSION SCREENING AND TREATMENT IN PREGNANT AND PARENTING ADOLESCENTS

Screening instruments developed for adults can be applied to adolescents, and screenings should be conducted in settings that adolescents frequently visit while pregnant, such as reproductive clinics and young parents programs, or even in schools.¹ In regard to treatment, as with adult mothers, there are risks and challenges associated with treating adolescents with antidepressant medication during pregnancy. Only one antidepressant, fluoxetine, is FDA-approved for adolescents, however, it holds a black box warning up to age 24 for potential suicidal ideation during initial use of the medication.² At this time no antidepressants have been approved for use during pregnancy. Cognitive behavioral therapy and interpersonal psychotherapy have been shown to be effective in treating adolescent depression and can be considered a first line of treatment if depression is not too severe and the adolescent has the financial means and motivation to access psychotherapy.³ In guidelines put forth by McClanahan, health care providers are encouraged consider the needs of each adolescent individually and weigh treatment decisions in relation to the severity of symptoms. Additional research will be vital in determining the efficacy of intervention to treat adolescent depression during pregnancy and in the postpartum period.

For more information and resources to support pregnant and parenting teens, please visit Healthy Teen Network's website at: <http://www.healthyteennetwork.org/>

1. Yozwiak JA. Postpartum Depression and Adolescent Mothers: A Review of Assessment and Treatment Approaches. *Journal of Pediatric and Adolescent Gynecology*. 2009, online.
 2. McClanahan KK. Depression in Pregnant Adolescents: Considerations for Treatment. *Journal of Pediatric and Adolescent Gynecology*, 2009;22:59-64.
 3. Ibid.

barriers included limited treatment options due to the mother's insurance coverage, lack of access to affordable mental health professionals, and general unavailability of mental health resources.¹⁰⁶

A survey conducted by LaRocco-Cockburn et al. found that OB/GYNs had similar attitudes as the pediatricians and identified similar barriers to screening women for depression. More than 50 percent of responding OB/GYNs reported they were "neither influenced to screen or not to screen" by colleagues, training, policy of employer or practice, and recommendations of professional organizations other than ACOG. Surprisingly, 57 percent reported that ACOG influenced them to conduct depression screening despite the fact that ACOG has never made a formal recommendation that OB/GYNs conduct depression screening.¹⁰⁷ OB/GYNs identified time constraints, along with inadequate reimbursement for screening and treatment, as the primary impediments to delivering appropriate referral and treatment for depression. While 84 percent of OB/GYNs surveyed believed that screening leads to greater detection, only 58 percent agreed that depression screening leads to improved treatment outcomes.¹⁰⁸ Another barrier is the lack of training to treat depression; a study by Dietrich et al. reported that fewer than half of newer obstetricians felt their residency had prepared them to diagnose depression.¹⁰⁹

Workforce Barriers

Compounding the above barriers facing pediatricians and OB/GYNs, shortages of primary care providers, especially in rural areas, further limit the likelihood that new mothers will be screened and treated for depression. Furthermore, the severe shortage of mental health professionals continues to impede access to treatment and likely discourages screening by primary care providers. Surveys of pediatricians and OB/GYNs, research, and the USPSTF recommendation for depression screening all acknowledge that screening is effective only if adequate treatment and follow-up resources are available and affordable. Evidence from several surveys of physicians, however, indicates a lack of resources for referral or long waiting periods for visits with mental health professionals.^{110,111} This lack of access to mental health professionals prevents women

The University of Illinois at Chicago Perinatal Mental Health Project has a resource for clinicians that summarizes research on antidepressants in pregnancy and breastfeeding and can be obtained at: <http://www.hfs.illinois.gov/assets/070109mch.pdf>.

An additional resource is the U.S. National Library of Medicine's Drugs and Lactation Database (LactMed), a peer-reviewed and fully referenced database of drugs to which breastfeeding mothers may be exposed. Among the data included are maternal and infant levels of drugs, possible effects on breastfed infants and on lactation, and alternate drugs to consider. The Database is available at: <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT>.

from receiving appropriate treatment after a depression diagnosis and can have devastating consequences for the woman's own health and the health of her infant.

Coding and Reimbursement Barriers

The current health care payment system for pediatricians and OB/GYNs creates an additional impediment to depression screening and treatment. While depression screening is generally covered by private insurance, payment is restricted to the billing code for the prenatal, postpartum or well-child visit, so there is little economic incentive to perform depression screening. Providers also have a short window of time during these office visits, and depression is one of many competing priorities to be discussed making it less likely that providers will screen or provide treatment.

When a woman is diagnosed with depression, it is not always simple to link her to a mental health professional for treatment or to provide treatment in the primary care setting due to the fragmented nature of mental

health benefits. Benefits are often offered through a mental health carve-out plan that prevents primary care providers from billing for depression treatment or limits the number of covered visits making it difficult for women to follow through with referrals and treatment. Additionally, many payers require that mental health evaluation and management services linked to a mental health diagnosis be performed only by a psychiatrist or psychologist and will deny mental health claims without these specialty codes.¹¹² The lack of coordination between OB/GYNs, primary care providers, and mental health professionals is a further barrier to depression treatment.

While Medicaid is required to cover “pregnancy-related” services, these services include, but are not limited to, prenatal care, delivery, postpartum care, family planning, and other services that a complicated pregnancy demands.¹¹³ There is broad variation among the states as to which specific services are covered, including depression screening. As mentioned earlier in this brief, Illinois is the only state that has a specific enhanced reimbursement policy within its Medicaid program for the use of a depression screening tool.

OPPORTUNITIES FOR HEALTH PLANS TO SUPPORT IDENTIFICATION & TREATMENT OF MATERNAL DEPRESSION

Opportunities to Support Patients and Physicians

Health plans have a unique opportunity to educate pregnant women and new mothers on the importance of depression screening using programs already in place to ensure that members receive high-quality maternity care. Health plan maternity programs provide valuable educational materials developed specifically for pregnant women and new mothers. A study by Buist et al. concluded that educational material has significant benefits for mental health literacy and health service use for perinatal women at risk for depression.¹¹⁴ Materials providing education about the risk factors for depression, health risks associated with undiagnosed and untreated depression, and ways to access screening and treatment would be invaluable to increase screening and treatment of maternal depression.

The Health Resources and Services Administration’s (HRSA) Bright Futures for Women’s Health and Wellness Initiative created educational materials geared to pregnant women and new mothers. Free copies of a booklet “Taking Care of Mom: Nurturing Self As Well as Baby” can be downloaded at http://www.hrsa.gov/womenshealth/maternal_wellness_website/booklet/. Free hard copies can be obtained from the HRSA Information Center by calling 1-888-Ask-HRSA.

Health plans can also support training to increase provider confidence and ability to administer screening tools. The Support and Training to Enhance Primary Care for Postpartum Depression (STEP-PPD) program described in **Figure 4** is one example of a free training program that plans could offer to providers in their network. STEP-PPD provides education, resources, and support to primary care providers on best practices in evidence-based management of postpartum depression in primary care settings. An evaluation of the program found that knowledge of how to assess and treat postpartum depression significantly increased among providers who participated in either web-based or in-person trainings. Trainings can also help providers assuage the concerns of mothers regarding depression screening and treatment. Olson et al. suggest providers discuss depression and conduct screenings in a supportive rather than judgmental process in order to provide practical assistance to depressed parents who may already feel isolated, guilty, and less competent as parents.¹¹⁵

The Bright Futures for Women’s Health and Wellness Initiative offers a guide for how health care providers can talk to perinatal women about their emotional wellness. The guide can be downloaded at http://www.hrsa.gov/womenshealth/maternal_wellness_website/pocket/. Free hard copies can be requested by calling 1-888-Ask-HRSA.

Despite the lack of national guidelines for maternal depression, there are several valuable guidelines and tools in existence. Health plans can promote use of

FIGURE 4. SUPPORT AND TRAINING TO ENHANCE PRIMARY CARE FOR POSTPARTUM DEPRESSION (STEP-PPD)

STEP-PPD is a free training program developed under a solicitation from the National Institute of Mental Health to educate primary care providers about evidence-based screening, diagnosis, treatment, and referral for postpartum depression. The primary goal of the program is to increase providers' general knowledge about postpartum depression and support the utilization of evidence-based approaches to manage depression in primary care settings. The program tailors instruction to the user by requesting information at registration on the user's specialty (obstetrics-gynecology, pediatrics or family practice), discipline (physician, nurse, physician assistant, or social worker) and special characteristics of the user's patient population (race/ethnicity, rural region, adolescents). Four program formats are available including web-based training, in-person half-day training, in-person grand rounds or full day "train the trainer." The web-based program consists of three modules:

1. *Understanding PPD*: Presents information about the symptoms, risk factors and impact of PPD on women and their families. It includes specific information on additional risk factors for certain populations of women, such as women of different cultures and ethnicities, women living in rural areas, and pregnant and parenting adolescents. This module is meant to serve as an introduction to the topic of PPD and other postpartum emotional adjustment difficulties.
2. *Assessing PPD*: Provides instruction on how to select, use and score a standardized screening tool and evaluate whether further assessment is necessary. It also provides information on how to conduct a clinical interview to determine if the woman is presenting with depressive symptoms or an actual PPD episode. The module then reviews common patient and provider-oriented barriers to screening and offers suggestions for overcoming barriers. Finally, it offers advice on making screening a routine part of practice and for creating a referral network based on local resources.
3. *Treating PPD*: Covers the basic guidelines for pharmacological and nonpharmacological treatment of PPD in primary care settings based on empirical evidence and clinical experience.

Information is presented in each module through detailed learning objectives, multiple case studies, interactive video clips, and links to additional resources. A comprehensive resource list offers links to the three screening tools reviewed in the course and algorithms for assessing and treating PPD, along with access to all the case studies and video clips referenced throughout the course.

The course currently contains three educational modules sponsored by the University of Iowa Carver College of Medicine for a total of 3.0 American Medical Association (AMA) Category 1 Credits. While it is free to access the course, a license to obtain Continuing Medical Education (CME) credits can be purchased for \$15 from http://shop.danya.com/STEP_PPD_Licence_p/step-ppdlicence.htm. Participants must score higher than an 80 percent on a quiz to receive CME credits. The overall time needed for studying and completing the quiz is estimated to be three hours.

The free STEP-PPD website is <http://www.step-ppd.com/step-ppd/home.aspx>. In-person trainings can be requested through the website. A pocket guide can be purchased for a minimal cost at http://shop.danya.com/product_p/da139.htm. A PDA version of the pocket guide for Pocket PC and Palm devices is available at <http://www.step-ppd.com/step-ppd/OnlineCourse/Resources/docs/STEP-PPD%20Pocket%20Guide.zip>.

Sources:

Baker CD et al. Web-based Training for Implementing Evidence-Based Management of Postpartum Depression. *Journal of the American Board of Family Medicine*, 2009; 22(5): 588-589.

O'Hara MW. Role of Primary Care Providers in Managing Postpartum Depression. Presentation on NIHCM Foundation Webinar, December 2009.

Support and Training to Enhance Primary Care for Postpartum Depression (STEP-PPD). Available at <http://www.step-ppd.com>. Accessed February 1, 2010.

these guidelines among providers, especially the new ACOG/APA guidelines for treating depression during pregnancy (Table 5).

To ensure appropriate implementation of risk assessments, health plans can support physician use of a standardized prenatal record, such as the ACOG Antepartum Record, which includes reminders to assess a woman's history of depression or postpartum depression during the patient encounter.¹¹⁶

Opportunities to Reduce Financial Barriers

In addition to offering educational materials to women, health plans can coordinate depression screening and treatment as a component of their maternity programs. Maternity programs vary by plan but are generally available to women from preconception or early pregnancy until six weeks after delivery and include individual support through toll-free 24-hour phone lines staffed by nurses, case management for high-risk pregnancies, and ongoing communication. Some programs offer incentives for women to enroll, such as gift certificates or car seats, or may charge higher premiums to women who choose not

to enroll.¹¹⁷ The goal of these programs is to manage the costs of maternity care, especially the costs of preterm deliveries, through education and new innovations in care management. Several plan maternity programs are beginning to coordinate depression screening as a part of perinatal and postpartum care. Blue Cross Blue Shield of Illinois specifically offers postpartum screening for all participants in their maternity program and coordinates follow-up care for women who have positive depression screens. WellPoint's Maternity Depression Program, described in detail in Figure 5, is an example of a comprehensive program implemented by a health plan to identify and manage depression during pregnancy. Through this program, pregnant women are screened for depression when they enroll in the plan's maternity management program, and the health plan helps facilitate referrals for women who are diagnosed with depression. The program also connects the woman to the plan's customer service department to review her mental health benefits and assist with locating providers in-network.

LaRocco-Cockburn et al. suggest the use of collaborative care programs as one way to facilitate screening and treatment among pregnant women and new

FIGURE 5. WELLPOINT MATERNITY DEPRESSION PROGRAM

WellPoint, Inc., the nation's largest health benefits company, created a comprehensive Maternity Depression Program in 2007 to provide education and screening tools to new mothers while targeting members who are at risk for perinatal and postpartum depression. The program was created to address concerns that the frequency of depressive symptoms during the perinatal and postpartum periods is greater than reported and to ameliorate barriers to identification and treatment. Following an extensive review of internal programs and resources, WellPoint conducted focus groups of members with postpartum depression, pediatricians, primary care providers and OB/GYNs. The findings from these focus groups informed the development of the various components of the program.

The program components are: 1) a provider toolkit, 2) a member mailing, and 3) telephonic outreach for high-risk members. The provider toolkit was created after the focus groups highlighted the need for training and tools to help providers recognize and refer women who would benefit from mental health services. The toolkit includes a sample educational brochure for providers to offer to their patients, a sheet with tips for the partners of postpartum mothers, links for providers to access resources with free Continuing Medical Education (CME) or Continuing Education Units (CEU), and links to screening and assessment resources. The screening and assessment resources are both mailed and available online and include algorithms to evaluate PPD in women and determine next steps for treatment. Many of the resources for mothers and their partners come from Postpartum Support International (<http://www.postpartum.net>), and the trainings are made available through nine care learning modules from <http://www.meded.org>.

FIGURE 5. (CONTINUED)

Based on member feedback collected through the focus groups, WellPoint created tailored mailings to be sent to all members with a childbirth claim. These mailings include educational materials and a self-scoring depression screening tool. Members are encouraged to complete the screening tool and share the results with their providers or contact a clinician with the Maternity Depression Program through a toll-free number if they have any questions or if they would like assistance with linkage to treatment.

The last component of the program is telephonic outreach for a targeted population of high-risk members. Women at risk for developing depression enter this program during the prenatal or postnatal periods through a referral from the Future Moms program, WellPoint's maternity management program, or by referral from providers or other case management programs within the plan.

Women are referred to the program if they have a positive PHQ-2 score of three or higher, a moderate to high level of stress or anxiety, or a history of PPD or depression. A licensed clinician contacts the member and conducts a more in depth depression screening. If members meet the referral criteria and consent to be enrolled in the program, they are offered telephone access to licensed therapists for depression education to discuss treatment options and for assistance obtaining behavioral treatment and referrals. Program staff then coordinate a plan of care with the woman's provider and at a later date conduct a clinical follow-up and perform a rescreen. Members are also asked to complete a satisfaction survey to evaluate the program.

The Maternity Depression Program has been successful in engaging women during the prenatal period in order to prevent or treat depression prior to delivery. Between 60 to 70 percent of women enrolled in the program join during the prenatal period and are followed for up to three months postpartum. This program is particularly unique due to the amount of care coordination that occurs between the program staff and individual providers. There is early and regular engagement with the nurse who referred the member to the program from a separate case management program within the plan. Provider notifications are mailed or faxed to the woman's treating provider following a positive screen for prenatal or postpartum depression or if a woman is at risk for postpartum depression. The program also provides direct telephonic outreach to providers of women at highest risk, especially women who identify any suicidal or homicidal ideation through the screening tool.

Another unique aspect of this program is that it works with women to connect them to their health benefits and to secure treatment for depression. Program staff will connect women through a three-way call with a WellPoint customer service representative or to a behavioral health carve-out plan to review the woman's benefits, discuss the financial impact of various treatment options, and help the member decide on a course of treatment.

The program works with the member to identify treating providers in the area and provides assistance securing appointments, especially for new mothers who have difficulty finding time to make appointments, by calling for the member or by calling with the mother also on the line. Finally, they link members to community resources for support in managing postpartum depression, including local support groups or websites.

Please contact Mindy Legere, LMFT, Director of Clinical Programs, WellPoint, Inc., at 866-785-2789 ext. 8291 for more information about this program.

Sources:

Legere, MB. Maternity Depression Program. Presentation on NIHCM Foundation Webinar, December 2009.

mothers.¹¹⁸ These programs utilize physician extenders, such as nurses or mental health professionals, who can follow patients, monitor outcomes, and schedule follow-up visits. Most health plans already utilize nurses to manage care for women enrolled in their maternity programs, and this benefit could be extended to specifically coordinate depression screening and treatment in addition to prenatal and postpartum care. Co-locating mental health professionals in the primary care setting and reimbursing for this model of care delivery is another strategy to improve perinatal depression care. Health plans could incorporate any of these services into their maternity management programs to increase early identification and treatment of depression and avoid the adverse pregnancy complications and costs associated with undiagnosed perinatal and postpartum depression.

Reimbursing for depression screening is also a key strategy to improve screening rates among pregnant women and new mothers. States like Illinois have shown that paying as little as \$14 for each screen performed has a significant impact on improving screening rates. Kemper et al. suggest increases in payment for maternal depression screening services, such as the Illinois payment, may make the time invested in screening (and subsequent actions when screen results are positive) worthwhile for pediatric providers.¹¹⁹ Childbirth Connection's Transforming Maternity Care project recommends a restructured payment model that bundles payment for the full episode of maternity care for women and newborns, including bonuses for priority components of postpartum care that may not be incentivized, such as screening and treatment of maternal depression.¹²⁰ Health plans could help to facilitate screening by identifying reimbursable billing codes that providers can use for a depression screen or by piloting bundled payments for maternity care that include incentives to provide screening.

CONCLUSION

The consequences of allowing maternal depression to go undiagnosed and untreated are detrimental to the health of all mothers and their children. Knowing that a woman's risk of developing depression peaks during her childbearing years, it is vital for all health care

providers to recognize the symptoms of depression and understand the risk factors associated with maternal depression in order to identify and treat depression as soon as possible. Not only does depression have a negative impact on the health of the mother and infant, including a higher risk for preterm birth, it has also been found to have a permanent impact on the health and development of the child. The financial consequences are equally stark considering the immense costs of preterm deliveries that are incurred by employers, individuals, and public and private payers, in addition to the emotional toll on the family.

Despite the lack of national guidelines on intervals for screening for depression during pregnancy and postpartum, several national professional organizations do provide useful guidelines for health care providers. There is evidence that brief screening tools can accurately identify depression and are important tools for both OB/GYNs and primary care providers who have the opportunity to interact with women at frequent intervals during prenatal and well-child visits. Several states have implemented efforts to support screening through educational programs and Medicaid reimbursement mechanisms. The Patient Protection and Affordable Care Act, recently signed into law, requires first-dollar coverage for postpartum depression screening and provides grants to the states to provide services to women with, or at risk of, postpartum depression and their families.

Especially given the renewed focus on prevention and additional women who will have access to insurance as a result of the recently passed health reform law, health plans are well-suited to support screening and treatment among the pregnant women and new mothers enrolled in their plans and in their maternity programs. Providing valuable educational materials as well as conducting, coordinating and reimbursing for screening and treatment are all strategies health plans can employ to improve early identification and treatment of maternal depression.

APPENDIX: HOW TO ACCESS SELECTED SCREENING TOOLS

Screening Tool	Cost	Contact
BDI®-FastScreen for Medical Patients	\$105 for complete kit (manual and pad of 50 record forms)	www.becksscales.com
Center for Epidemiologic Study Depression Scale (CES-D)	Free	http://cooccurring.org/public/document/ces-d.pdf http://cooccurring.org/public/document/usingmeasures.pdf
Edinburgh Postnatal Depression Scale (EPDS)	Free	http://www.dbpeds.org/media/edinburghscale.pdf
Hamilton Rating Scale for Depression (HAM-D)	Free	http://www.psychiatrictimes.com/clinical-scales/depression/
Montgomery-Asberg Depression Rating Scale (MADRS)	Free	http://www.psy-world.com/madrs.htm
Patient Health Questionnaire 2: 2-Question Screen (PHQ-2) and Patient Health Questionnaire 9: Depression Screener (PHQ-9)	Free	http://www.cqaimh.org/pdf/tool_phq2.pdf http://www.depression-primarycare.org/clinicians/toolkits/materials/forms/phq9/
Postpartum Depression Screen (PPDS)	\$79.75 for complete kit (25 AutoScore test forms and scoring manual)	http://portal.wpspublish.com/pls/portal/url/page/wps/W-380
RAND 3-Question Screen	Free	http://www.rand.org/health/surveys_tools/depression/index.html

ENDNOTES

- 1 Gaynes BN, Gavin N, Meltzer-Brody S, Lohr KN, Swinson T, Gartlehner G, Brody S, Miller WC. Perinatal Depression: Prevalence, Screening Accuracy, and Screening Outcomes. Agency for Healthcare Research and Quality. Evidence Report/Technology Assessment, Number 119, 2005.
- 2 Declercq ER, Sakala C, Corry MP, Applebaum S, Risher P. Listening to Mothers: Report of the First National U.S. Survey of Women's Childbearing Experiences. New York: Maternity Center Association, October 2002.
- 3 Barson R. Considering Interventions for Depression in Reproductive Age Women in Family Planning Programs. Baltimore, MD. Women's and Children's Health Policy Center. Johns Hopkins Bloomberg School of Public Health, 2006.
- 4 Healthy People 2010. Available at: <http://www.healthypeople.gov/default.htm> Accessed 1/27/2010.
- 5 Healthy People 2020. Proposed Objectives. Available at: <http://www.healthypeople.gov/hp2020/default.asp> Accessed 1/27/2010.
- 6 Gaynes BN et al, 2005.
- 7 Mood Disorders and Hormonal Transitions: The Ups and Downs. Report on the Society for Women's Health Research/National Institute of Mental Health Roundtable on Mood Disorders and Hormonal Transitions, 2007.
- 8 *Depression During and After Pregnancy: A Resource for Women, Their Family, and Friends*. Health Resources and Services Administration, November 2006. Available at www.mchb.hrsa.gov/pregnancyandbeyond/depression.
- 9 Jellinek M, Patel BP, Froehle MC, eds. *Bright Futures in Practice: Mental Health—Volume I*. Practice Guide. Arlington, VA: National Center for Education in Maternal and Child Health. 2002; 308-316.
- 10 Understanding Maternal Depression: A fact sheet for care providers. New York State Department of Health and Office of Mental Health, May 2005.
- 11 Ibid.
- 12 Barson R, 2006.
- 13 *The numbers count: Mental disorders in America*. National Institute of Mental Health, December 2008. Available at: <http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america/index.shtml>.
- 14 Barson R, 2006.
- 15 Rich-Edwards JW, Kleinman K, Abrams A, Harlow BL, McLaughlin TJ, Joffe H, Gillman MW. Sociodemographic predictors of antenatal and postpartum depressive symptoms among women in a medical group practice. *Journal of Epidemiology and Community Health*, 2006; 60:221-227.
- 16 Barson R, 2006.
- 17 Olson AL, Dietrich AJ, Prazar G, Hurley J. Brief Maternal Depression Screening at Well-Child Visits. *Pediatrics*, 2006; 118: 207-216.
- 18 The Challenges of Diagnosing and Treating Maternal Depression—Women's Health Experts Weigh In. American College of Obstetricians and Gynecologists (ACOG). May 7, 2007. http://www.acog.org/from_home/publications/press_releases/nr05-07-07-2.cfm Accessed February 1, 2010.
- 19 Shulman HB, Gilbert BC, Lansky A. The Pregnancy Risk Assessment Monitoring System (PRAMS): current methods and evaluation of 2001 response rates. *Public Health Reports*, 2006; 121(1):78-83.
- 20 Centers for Disease Control and Prevention. Division of Reproductive Health. Pregnancy Risk Assessment Monitoring System (PRAMS): CPONDER. Available at <http://www.cdc.gov/prams/cponder.htm> Accessed 3/2/10.
- 21 National Association of County and City Health Officials (NACCHO). Women's Mental health: Local Health Department Strategies in Addressing Depression Among Pregnant and Parenting Women. Issue Brief, August 2007.
- 22 National Business Group on Health (NBGH). *Preventing, Identifying and Treating Maternal Depression: Tools for Employers*. Issue Brief, March 2005.
- 23 Jellinek M et al., 2002.
- 24 O'Hara JW, Swain AM. Rates and risk of postpartum depression: a meta-analysis. *International Review of Psychiatry*, 1996; 8:37-54.
- 25 Dalton K and Holton WM. Depression after Childbirth: How to recognize, treat, and prevent postnatal depression. New York: Oxford University Press, 2001, p. 124.
- 26 Tuohy A, McVey C. Experience of pregnancy and delivery as predictors of postpartum depression. *Psychology, Health & Medicine*, 2008; 13(1):43-47.
- 27 Fatoye F, Oladimeji B, Adeyemi A. Difficult delivery and some selected factors as predictors of early postpartum psychological symptoms among Nigerian women. *Journal of Psychosomatic Research*, 2006; 60(3): 299-301.
- 28 Moses-Kolko EL, Kraus Roth E. Antepartum and Postpartum Depression: Healthy Mom, Healthy Baby. *Journal of the American Medical Women's Association*, 2004; 59(3):181-191.
- 29 Knitzer J, Theberge S, Johnson K. *Reducing Maternal Depression and Its Impact on Young Children: Toward a Responsive Early Childhood Framework*. National Center for Children in Poverty, Project THRIVE Issue Brief No. 2. Columbia University Mailman School of Public Health, 2008.
- 30 Ibid.
- 31 Ibid.
- 32 Brett K, Barfield M, Williams C. Prevalence of Self-Reported Depressive Symptoms—17 States, 2004-2005. *Journal of the American Medical Association*, 2008; 299(19): 2268-2270.
- 33 Moses-Kolko et al., 2004.
- 34 Kumar R, Robson KM. A prospective national study of emotional disorders in childbearing women. *British Journal of Psychiatry*, 1984; 144:35-47.
- 35 Davidson J, Robertson E. A follow-up study of postpartum illness, 1946-1978. *Acta Psychiatrica Scandinavica*, 1985; 71: 451-457.
- 36 Llewellyn AM, Snowe SN, Nemeroff CB. Depression during pregnancy and the puerperium. *Journal of Clinical Psychiatry*, 1997; 58(suppl 15): 26-32.
- 37 Kendrell RE, Chalmers JC, Platz C. Epidemiology of puerperal psychoses. *British Journal of Psychiatry*, 1986; 150:662-673.
- 38 Mood Disorders and Hormonal Transitions: The Ups and Downs. Report on the Society for Women's Health Research/National Institute of Mental Health Roundtable on Mood Disorders and Hormonal Transitions, 2007.
- 39 NBGH, March 2005.
- 40 Ibid.
- 41 Jellinek M et al., 2002.

- 42 LaRocco-Cockburn A, Melville J, Bell M, Katon W. Depression Screening Attitudes and Practices Among Obstetrician-Gynecologists. *Obstetrics & Gynecology*, 2003; 101:892-8.
- 43 Delatte R, Cao H, Meltzer-Brody S, Menard K. Universal screening for postpartum depression: an inquiry into provider attitudes and practice. *American Journal of Obstetrics & Gynecology*, 2009; 113(5):1117-23.
- 44 Olson AL, Kemper KJ, Kelleher KJ, Hammond CS, Zuckerman BS, Dietrich AJ. Primary care pediatrician's roles and perceived responsibilities in the identification and management of maternal depression. *Pediatrics*, 2002; 110:1169-76.
- 45 Ibid.
- 46 Heneghan AM, Silver EJ, Bauman LJ, and Stein RE. Do pediatricians recognize mothers with depressive symptoms? *Pediatrics*, 2000; 106:1367-73.
- 47 Hatton DC, Harrison-Hohner J, Matarazzo J, Edwards P, Lewy A, Davis L. Missed antenatal depression among high risk women: a secondary analysis. *Archives of Women's Mental Health*, 2007; 10:121-23.
- 48 Kelly RH, Zatzik DF, Anders TF. The detection and treatment of psychiatric disorders and substance abuse among pregnant women cared for in obstetrics. *American Journal of Psychiatry*, 2001; 158:213-219.
- 49 Declercq ER et al, 2002.
- 50 Goodman JH and Tyer-Viola L. Detection, Treatment, and Referral of Perinatal Depression and Anxiety by Obstetrical Providers. *Journal of Women's Health*, 2010; 19(3).
- 51 Bennett HA, Einarson A, Taddio A, Koren G, Einarson TR. Depression During Pregnancy. *Clinical Drug Investigation*, 2004; 24(3): 157-79.
- 52 Owens P, Myers M, Elixhauser A, Brach C. Care of Adults With Mental Health and Substance Abuse Disorders in U.S. Community Hospitals, 2004. Agency for Healthcare Research and Quality, 2007. HCUP Fact Book No. 10. AHRQ Publication No. 07-0008. ISBN 1-58763-229-2.
- 53 Thomas N, Sleath BL, Jackson E, West S and Gaynes B. Survey of Characteristics and Treatment Preferences for Physicians Treating Postpartum Depression in the General Medical Setting. *Community Mental Health Journal*, 2008; 44(1): 47-56.
- 54 Dietz PM, Williams SB, Callaghan WM, Bachman DJ, Whitlock EP and Hornbrook MC. Clinically Identified Maternal Depression Before, During and After Pregnancies Ending in Live Births. *American Journal of Psychiatry*, 2007; 164(10):1515-20.
- 55 Dennis CL and Chung-Lee L. Postpartum Depression Help-Seeking Barriers and Treatment Preferences: A Qualitative Systemic Review. *BIRTH*, 2006; 33(4): 323-331.
- 56 Society for Women's Health Research. Surveys of Adult U.S. Women and Doctors Gauge Perceptions About Depression Through Hormonal Transitions. Available at: <http://www.womenshealthresearch.org/site/DocServer/DepressionSurveyAnalysis.pdf?docID=1801> Accessed 3/2/10.
- 57 NBGH, March 2005.
- 58 Lembke A. A Psychosocial Approach to Postpartum Depression. *Psychiatric Times*, June 1, 2002; 20(26).
- 59 Onunaku N. Improving Maternal and Infant Mental Health: Focus on Maternal Depression. National Center for Infant and Early Childhood Health Policy at UCLA, 2005.
- 60 Thurgood S, Avery DM and Williamson L. Postpartum Depression (PPD). *American Journal of Clinical Medicine*, 2009; 6(2): 17-22.
- 61 Onunaku, 2005.
- 62 National Research Council and Institute of Medicine. *Depression in Parents, Parenting, and Children: Opportunities to Improve the Identification, Treatment, and Prevention*. Committee on Depression, Parenting Practices, and the Healthy Development of Children. Board on Children, Youth, and Families. Division of Behavioral and Social Sciences and Education. Washington DC: The National Academies Press, 2009.
- 63 Kim P and Swain Je. Sad Dads: Paternal postpartum depression. *Psychiatry*, 2007; 4:36-47.
- 64 Hossain Z, Field T, Gonzalez J, et al. Infants of depressed mothers interact better with their nondepressed fathers. *Journal of Infant Mental Health*, 1994; 15:348-357.
- 65 Foli KJ. Postadoption Depression: What Nurses Should Know. *American Journal of Nursing*, July 2009; 109(7):11.
- 66 NBGH, March 2005.
- 67 Ibid.
- 68 March of Dimes. Premature Birth. Help Reduce Cost: The Economic Costs. Available at: http://www.marchofdimes.com/prematurity/21198_10734.asp. Accessed 2/2/10.
- 69 March of Dimes. Premature Birth. Help Reduce Cost: The Cost to Business. Available at: http://www.marchofdimes.com/prematurity/21198_15349.asp Accessed 2/2/10.
- 70 National Research Council and Institute of Medicine, 2009.
- 71 *Screening for Depression in Adults*, Topic Page. December 2009. U.S. Preventive Services Task Force. Agency for Healthcare Research and Quality, Rockville, MD. Available at: <http://www.ahrq.gov/CLINIC/uspstf/uspstfdepr.htm> Accessed 1/8/10.
- 72 American College of Obstetrics and Gynecology Committee Opinion No. 453: Screening for Depression During and After Pregnancy. *Obstetrics and Gynecology*, 2010; 115(2):394-395.
- 73 Hagan JF, Shaw JS, Duncan PM, eds. *Bright Futures Guidelines for Health Supervision of Infants, Children, and Adolescents*, Third Edition, Elk Grove, IL: American Academy of Pediatrics, 2008.
- 74 American Academy of Pediatrics, American College of Obstetricians and Gynecologists. Guidelines for perinatal care. 6th ed. Elk Grove Village, Ill.: American Academy of Pediatrics, and Washington, D.C.: American College of Obstetricians and Gynecologists, 2007.
- 75 Screening for Depression in Adults, Topic Page. December 2009. U.S. Preventive Services Task Force. Agency for Healthcare Research and Quality, Rockville, MD. Available at: <http://www.ahrq.gov/CLINIC/uspstf/uspstfdepr.htm> Accessed 1/8/10.
- 76 ACOG Committee Opinion No. 343: Psychosocial Risk Factors: Perinatal Screening and Intervention. *Obstetrics & Gynecology*, 2006; 108(2):469.
- 77 Beck Depression Inventory – FastScreen. Available at <http://www.pearsonpsychcorp.com.au/productdetails/43/1/40> Accessed 1/8/10.
- 78 Radloff LS. The CES-D scale: A self report depression scale for research in the general population. *Applied Psychological Measurement*, 1977; 1(3):385-401.
- 79 National Research Council and Institute of Medicine, 2009.
- 80 Hamilton M. A Rating Scale for Depression. *Journal of Neurology, Neurosurgery, and Psychiatry*, 1960; 23:56-62.
- 81 Montgomery SA, Asberg M. A new depression scale designed to be sensitive to change. *British Journal of Psychiatry*, 1979; 134:382-389.
- 82 National Research Council and Institute of Medicine, 2009.
- 83 Ibid.
- 84 Postpartum Depression Screening Scale. Available at: http://portal.wpspublish.com/portal/page?_pageid=53,70428&_dad=portal&_schema=PORTAL Accessed 1/8/10.
- 85 National Research Council and Institute of Medicine, 2009.
- 86 Gaynes BN et al., 2005.
- 87 Gjerdingen DK, Yawn BP. Postpartum Depression Screening: Importance, Methods, Barriers, and Recommendations for Practice. *Journal of the American Board of Family Medicine*, 2007; 20(3): 280-288.
- 88 Ibid.

- 89 National Research Council and Institute of Medicine, 2009.
- 90 State of New Jersey, Department of Health and Senior Services, Family Health Services. Speak Up When You're Down. Available at <http://www.nj.gov/health/fhs/postpartumdepression/index.shtml> Accessed 1/8/2010.
- 91 Illinois Department of Health and Human Services. Screening and Treatment for Perinatal Health Disorders. Available at: <http://www.dhs.state.il.us/page.aspx?item=35251> Accessed at 1/8/10.
- 92 Kaiser Family Foundation. State Medicaid Coverage of Perinatal Services: Summary of State Survey Findings. November 2009. Available at: <http://www.kff.org/womenshealth/upload/8014.pdf> Accessed 1/8/10.
- 93 Ibid.
- 94 Senate H.R. 3590: The Patient Protection and Affordable Care Act as signed into law on 12/24/09.
- 95 Association of Maternal and Child Health Programs. "The Patient Protection and Affordable Care Act Maternal and Child Health Related Highlights. Available at: <http://www.amchp.org/Advocacy/health-reform/Documents/Senate%20Bill%20-%20MCH%20Highlights%203%2022%2010.pdf> Accessed 3/31/10.
- 96 Senate H.R. 3590: The Patient Protection and Affordable Care Act as signed into law on 12/24/09.
- 97 Health Resources and Services Administration, Maternal and Child Health Bureau, Division of Healthy Start and Perinatal Health sources. April 2010.
- 98 Thurgood S, 2009
- 99 University of Illinois, Chicago Perinatal Mental Health Project. Information for Clinicians on Antidepressants During Pregnancy and Breast Feeding – June 2009. Available at: http://www.psych.uic.edu/research/perinatalmentalhealth/pdf/Medication_Chart_June_2009.pdf Accessed 1/8/10.
- 100 Thurgood S, 2009
- 101 Payne JL. Antidepressant use in the postpartum period: practical considerations. *American Journal of Psychiatry*, 2007; 164(9): 1329-1332.
- 102 Heneghan AM, Mercer MB, DeLeone NL. Will Mothers Discuss Parenting Stress and Depressive Symptoms With Their Child's Pediatrician? *Pediatrics*, 2004; 113; 460-67.
- 103 Gjerdingen DK, Yawn BP, 2007.
- 104 Olson AL et al., 2002.
- 105 Ibid.
- 106 Ibid.
- 107 LaRocco-Cockburn et al., 2003.
- 108 Ibid.
- 109 Dietrich AJ, William JW, Ciotti MC, et al. Depression care attitudes and practices of newer obstetrician-gynecologists: a national survey. *American Journal of Obstetric and Gynecology*, 2003; 189:267-273.
- 110 Wiley CC, Burke GS, Gill PA, Law NE. Pediatricians' views of post-partum depression: a self-administered survey. *Archives of Women's Mental Health*, 2004; 7:231-36.
- 111 McCue Horwitz S, Kelleher KJ, Stein REK, Storfer-Isser A, Youngstrom EA, Park ER, Heneghan AM, Jensen PS, O'Connor KG, and Eaton Hoagwood K. Barriers to the Identification and Management of Psychosocial Issues in Children and Maternal Depression. *Pediatrics*, 2007; 119:e208-e218.
- 112 American College of Obstetrics and Gynecology Committee Opinion No. 453, 2010.
- 113 Kaiser Family Foundation, 2009.
- 114 Buist AE, Austin AE, Hayes BA, Speelman C, Bilszta JLC, Gemmill AW, Brooks J, Ellwood D, Milgrom J. Postnatal mental health of women giving birth in Australia 2002-2004: findings from the beyondblue National Postnatal Depression Program. *Australian and New Zealand Journal of Psychiatry*, 2008; 42:1, 66-73.
- 115 Olson AL et al., 2006.
- 116 American Academy of Pediatrics, American College of Obstetricians and Gynecologists, 2007.
- 117 Cross, M. Pregnancy+Birth=\$\$\$\$. *Managed Care*, February 2006. Available at: <http://www.managedcaremag.com/archives/0602/0602.birthcosts.html> Accessed 1/29/10.
- 118 LaRocco-Cockburn, et al., 2003.
- 119 Kemper KJ, Kelleher K, Olson AL. Implementing Maternal Depression Screening. *Pediatrics*, 2007; 120(2): 448-49.
- 120 The Transforming Maternity Care Symposium Steering Committee. Blueprint for Action: Steps Toward a High-Quality, High-Value Maternity Care System. *Women's Health Issues*, 2010; 20:S18-S49.

ABOUT THE NIHCM FOUNDATION

The National Institute for Health Care Management Research and Educational Foundation is a non-profit organization whose mission is to promote improvement in health care access, management and quality.

ABOUT THIS BRIEF

This paper was produced with support from the Health Resources and Services Administration's Maternal and Child Health Bureau, Public Health Service, United States Department of Health and Human Services, under Grant No. G96MC0446 and Grant No. U45MC07531. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Maternal and Child Health Bureau.

This brief was written by Kathryn Santoro, MA (ksantoro@nihcm.org) and Hillary Peabody, MPH (hpeabody@nihcm.org) and edited by Julie Schoenman, PhD, under the direction of Nancy Chockley (nchockley@nihcm.org) of the NIHCM Foundation. NIHCM also thanks the following people for their contributions to the brief: Sharon Adamo, MS, MBA, RD, Senior Public Health Analyst, Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Dept. of Health and Human Services; Isadora Hare, MSW, LCSW, Perinatal Health Specialist, Division of Healthy Start and Perinatal Services, Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Dept. of Health and Human Services; Mindy B. Legere, LMFT, Director, Clinical Programs, WellPoint Inc.; Janet L. Max, Director of Programs and Policy, Healthy Teen Network; Samantha Meltzer-Brody, MD, MPH, Director, UNC Perinatal Psychiatry Program, Assistant Professor, UNC Department of Psychiatry; Pat Paluzzi, DrPH, President and CEO, Healthy Teen Network; and Michael W. O'Hara, Professor and Starch Faculty Fellow, Past President, Faculty Senate, Department of Psychology, University of Iowa.



NIHCM
FOUNDATION

1225 19TH STREET NW
SUITE 710
WASHINGTON, DC 20036

202.296.4426
202.296.4319 (FAX)

WWW.NIHCM.ORG