

Addressing Maternal Depression:

Opportunities in the Pediatric Setting

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About the Child Health and Development Institute of Connecticut:

The Child Health and Development Institute of Connecticut is a not-for-profit organization established to promote and maximize the healthy physical, behavioral, emotional, cognitive and social development of children throughout Connecticut. CHDI works to ensure that children in Connecticut who are disadvantaged will have access to and make use of a comprehensive, effective, community-based health and mental health care system.

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INTRODUCTION

Maternal Depression during the postpartum period has become an issue of increased attention. Postpartum depression can be crippling and have long term sequelae for a woman's health.¹ Untreated maternal depression also imposes serious complications for the health and development of exposed children.² Mothers suffering from depression are less likely to engage in maternal behaviors known to enhance the development and well-being of their children. Mothers who are depressed are less likely to play with their infants, to continue breastfeeding, to show them books, to talk with their infants and to follow routines.³ Although postpartum depression is thought to have a 10 to 15% prevalence rate across all populations, it is estimated to be over 25% for vulnerable low-income populations.^{4,5}

The pediatric or family medicine primary care practice is an ideal venue for the detection of maternal depression. Since most parents have contact with the health care system during their children's early years, child health providers have frequent contact with mothers and other family members. A family's interaction with the pediatric provider during well child and sick visits provides a window of opportunity to identify maternal depression and to make appropriate referrals. Families look to the pediatric provider not only as an expert in their child's physical health but also as an expert in all areas of their child's growth and development.⁶

This paper discusses the condition of maternal depression from the postpartum period through early childhood and its effect on child health and development. Issues related to screening for maternal depression within the pediatric settings and referring mothers who are at risk to services are highlighted. Initiatives in Connecticut that support early identification of, and interventions for, mothers at risk for depression are presented along with recommendations for further action.

AN OVERVIEW OF POSTPARTUM MOOD DISORDERS

There are two major maternal depressive disorders associated with the postpartum period: postpartum blues and postpartum depression. A third psychiatric disorder, postpartum psychosis, is the condition most typically responsible for cases involving maternal acts of infanticide widely publicized across the media.

Postpartum blues is the most common of these disorders with a prevalence reported in the literature ranging from 26 to 85%. It is generally considered to be associated with normal rather than disordered maternal behavior.⁷ The transient symptoms associated with postpartum blues include: weeping, sadness, headache, anxiety, irritability and sleep disorder. These self-limiting episodes are brief, mild and are resolved within two weeks after delivery.⁸

Postpartum depression is less common than postpartum blues but is a more disabling psychiatric illness associated with childbirth. The occurrence of postpartum depression is estimated to affect between 10 to 15% of the childbearing population, although differences exist concerning the operational definition of postpartum depression. The onset of this disorder is typically similar to postpartum blues, but it can present anytime within a six-month postpartum period and can last up to one year after delivery.⁸ However, according to the more narrow definition of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) postpartum depression requires onset within the four week postpartum period.⁹

Although opinions vary among experts concerning both the nature and etiology of postpartum psychiatric disorders, the operational definitions and diagnostic criteria found in the present DSM-IV reflect the American Psychiatric Association's viewpoint that postpartum disorders are not distinct disorders but episodes of standard psychiatric illnesses presenting during the postpartum period. Some researchers, however, have reported a relationship between the physical conditions associated with pregnancy and depression. For example, one study found that anemia during the first week postpartum was related to positive scores on depression screens at 28 days postpartum.¹⁰ There is also a reported relationship between postpartum depression and autoimmune thyroid dysfunction during the eight months following birth.¹¹

Thyroid malfunction is also another physical condition that can mirror symptoms of depression.

In a meta-analysis of 84 studies, 13 risk factors were found to be predictive of postpartum depression. They were: prenatal depression, low self esteem, childcare stress, prenatal anxiety, life stress, lack of social support, marital relationship, history of previous depression, infant temperament, maternity blues, poor marital relationship, and unplanned pregnancy.¹² All of these associated risk factors reflect causes of maternal stress, with depression representing one factor within a constellation of potential stressors. There is a growing body of research documenting the effects of maternal stress during pregnancy and its effect on birth outcomes, fetal growth and infant temperament.^{13,14} Maternal stress during pregnancy has been shown to negatively affect fetal growth and development. Problems in temperament result from the infant having been exposed to maternal stress within the fetal environment during the prenatal period.^{15,16} This research highlights the importance of assessing stress in pregnant as well as postpartum women.



Children who are exposed to depressed mothers have been shown to exhibit a wide range of socio-emotional, developmental and general health problems and inappropriate patterns of health care utilization.

THE EFFECTS ON CHILD HEALTH AND DEVELOPMENT

The damaging effect of postpartum depression on infants after birth has been extensively documented. Children who are exposed to depressed mothers have been shown to exhibit a wide range of socio-emotional, developmental and general health problems and inappropriate patterns of health care utilization. A series of studies reveal connections between maternal depression and behavioral problems, injury, attention-deficit/hyperactivity disorder (ADHD), conduct disorder, violence and antisocial behavior in children.

Socio-emotional and behavioral effects of maternal depression

One controlled study of the children of women who screened positive for depression during the postpartum period demonstrated impediments in the areas of attachment, object concept tasks and behavioral difficulties at 18 months of age.¹⁷ The effect of maternal depression on attachment has been well documented.¹⁸ Infants of depressed mothers often mirror the depressed affectations of their mothers. When compared to the infants of non-depressed mothers there are differences in vocalizations, facial expressions and the ability to interact.¹⁹

The behavior of mothers who are depressed differs from those who are not. Sensitive mothers are able to read and respond to their infants' cues. They are able to interpret their needs and create a nurturing protective environment. Bio-behavioral research suggests it is maternal sensitivity that buffers infants from the effect of stress while insensitivity on the part of the mother is in itself a stress factor. This insensitivity poses implications for the infant's developing regulatory functions.²⁰

Maternal depression also has a negative impact on children's psychosocial functioning and is related to low social competence. One longitudinal prospective study that measured maternal depression prenatally, during the postpartum period and when the child was eight to nine years old, found that maternal depression at any time is a risk factor for child socio-emotional well-being.²¹ When violent behavior in children at age eleven was evaluated, it was found that maternal depression at three months postpartum was a predictive risk factor. In addition to violent behavior, children of depressed mothers in this study also displayed anger and inattentiveness at age eleven.²² In a study of 1,116 twin pairs it was found that maternal depression during the first five years of life was significantly related to antisocial behavior in children at age seven.²³

Poverty is the single factor most associated with maternal depression and poor child outcomes.

Health and cognitive effects of maternal depression

A cohort study was conducted as part of the National Longitudinal Study of Youth to examine the relationship between maternal depression, childhood injury and child behavior for 1,106 children five years old and younger. Maternal depression was significantly related to childhood injury and to externalizing behavior in children. There was a 4% increase in risk of injury for every one point increase on the Center for Epidemiologic Studies Depression Scale.²⁴ An analysis of data from the 2003 National Survey of Children's Health documented a relationship between low maternal mental health and dental health and obesity in children.²⁵ Children of mothers who are depressed are also at risk for cognitive and language delays. When cognitive development is measured at 18 months of age, maternal depression is related to lower achievement.²⁶

Effects of maternal depression on utilization of health services

An examination of data collected as part of the National Evaluation of Healthy Steps for Young Children²⁷ showed that children of mothers who show signs of depression early in their children's lives (two to four months postpartum) were 20 to 25% less likely to receive age appropriate well child services, and they were 38% more likely to have an emergency department visit.²⁸ Regarding adherence to health care regimens, a study of inner city children with asthma found that mothers who are depressed are more likely to report that their child

has a problem using an inhaler and frequently forgets to use medications.²⁹

Beyond maternal depression, having just one parent, mother or father, who is depressed is also linked to differences in a child's utilization of and compliance with health care services. In a study of 24,391 children exposed to parental depression and 45,274 children not exposed and matched by age, there were significant health care utilization differences between groups. Children exposed to a parent with depression, across all age groups, had 14 to 20% more sick visits and 15 to 35% more emergency department visits. With the exception of children ages three to five, children exposed to parental depression also were hospitalized more frequently than the comparison group of children.³⁰ These studies reveal that a child's exposure to any parental depression poses increased costs to the health care system in addition to consequences for growth and development.

Disadvantaged populations

It is critical to consider the role poverty plays in maternal depression and the interplay with child outcomes. Poverty is the single factor most associated with maternal depression and poor child outcomes. Poverty is the emanating point for stress and is a consistent predictor of depression in women.³¹ In a study of 5,306 mothers whose children were younger than 36 months of age it was found that food insecurity, reduction in federal financial support and reduced food stamps were associated with mothers who scored positive for

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depressive symptoms. Maternal poverty and a positive depression score were also associated with maternal reports of lower child health status and of increased hospitalizations across the child's life compared to reports of mothers without depression and more resources.³²

The National Center for Children in Poverty (NCCP) suggests the rates of depression are high for all poor women regardless of ethnicity, and that poverty supercedes race and other variables in its predictive value for maternal depression. Pachter demonstrated a direct relationship between maternal depression and children's behavior problems across white, black and Latino populations.³³ Cumulative exposure to maternal depression and other risk factors more common in low-income populations places children at a greater risk for poor outcomes associated with impaired parental behaviors. Low income women often suffer from depression and other stressors such as domestic violence, substance abuse and prior trauma. Maternal depression and anxiety are related to an increased risk of child behavioral problems and these children are at greater risk from their exposure to maternal depression and anxiety than their exposure to other maternal risk factors such as smoking, binge drinking and domestic violence.³⁴ This underlies the catastrophic affect poverty has on the quality of women's lives and on the maternal-child relationship and child outcomes.

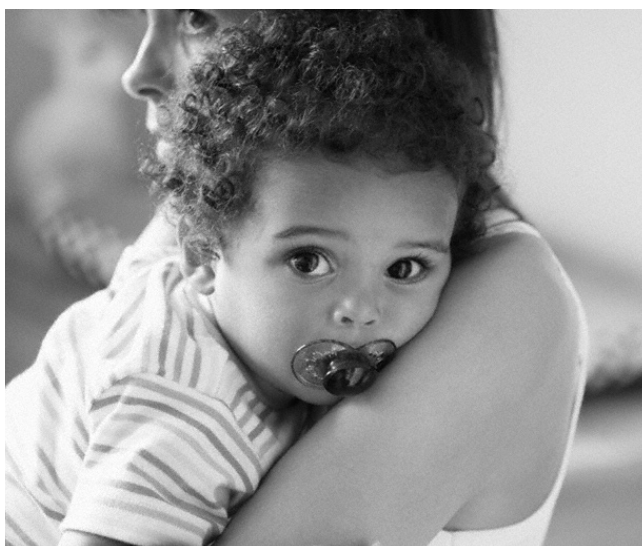
Treating mothers who exhibit signs of depression

Children are most vulnerable to poor developmental outcomes when maternal depression is chronic. Early interventions that target parenting behaviors have been shown to mediate these effects.³⁵ The early identification of maternal depression allows for initiation of an intervention that will facilitate the development of positive parenting skills and influence the effect of maternal depression on child behavior.

Depression when detected is a very treatable condition. Both pharmacological and psychotherapy interventions either alone, but especially concurrently, have proven to be effective in relieving depressive symptomatology. When the mother is pregnant or breastfeeding one must always apply the risk/benefit rational towards decision making in this area. While educating mothers about any potential risks to their infants related to treatment modalities, mothers must also be educated about the risks associated with untreated depression to their infants.³⁶

In addition to medication and counseling as treatment for depression, other interventions have demonstrated a mediating effect on child outcomes. The use of the Mother's Assessment of the Behavior of her Infant Scale and Brazelton's Neonatal Behavioral Assessment Scale as part of a treatment plan when working with mothers suffering from depression resulted in a positive effect on infant outcomes.³⁷ A developmentally

focused home visitation program using trained professional home visitors is another intervention proven to be effective. In one study, the infants in the home visitation intervention group scored ten points higher on the Bayley Mental Development Index and were two times more likely to be securely attached to their mothers than infants in the non-intervention group.³⁸ Early positive parenting has been shown to be a protective factor to change the course of conduct disorder for children with ADHD who have mothers with depression.³⁹ These studies underscore the importance of identifying mothers with depression early and linking them to intervention services.



Visits with a child health provider provide an excellent opportunity to identify mothers with depression early and connect them to services that can mitigate the impact of the depression on their own mental health and their children's growth and development.

SCREENING AND REFERRAL IN THE PEDIATRIC SETTING

Visits with a child health provider provide an excellent opportunity to identify mothers with depression early and connect them to services that can mitigate the impact of the depression on their own mental health and their children's growth and development. Pediatric health care providers have early and frequent contact with mothers of young children. The six recommended well child visits in the first years of life⁴⁰ provide access to mothers at exactly the time when they are most affecting their children's future growth, health, cognition, and socio-emotional development and when treatment can be most effective.

The content of child health services, and especially well child care services, encompasses monitoring growth and development and detecting problems early. As an extension of developmental monitoring and risk assessment, screening for maternal depression is an additional strategy towards identifying potential developmental and behavioral problems in children. The American Academy of Pediatrics' Bright Futures initiative defines the scope of pediatric practice to include the assessment of parental and familial environmental issues that can impact a child's health and development, including maternal depression.⁴¹ Bright Futures provides resources for pediatric providers committed to addressing the issue of maternal depression, including information sheets, educational materials, and website links with additional resources. These can be found at <http://www.brightfutures.org/mentalhealth>.⁴²

Addressing barriers to screening and referral

Despite endorsement from the American Academy of Pediatrics for maternal depression screening and the indisputable evidence on the devastating effects of maternal depression on child development, pediatric providers still face challenges in identifying mothers who are depressed and finding intervention services for them. There are three overall barriers that pediatric providers face in identifying and referring mothers who show signs of depression:

1) **The mother is not the pediatrician's patient.**

Pediatric providers are frequently uncomfortable addressing the mother's health issue because the child is their primary patient. One issue associated with screening a child's mother for depression is related to how to document the encounter. If a mother screens positive for depressive symptoms and the pediatrician provides anticipatory guidance and a referral to behavioral health services or to the mother's primary care provider, a note will need to be made in the child's chart. This raises the issue of sharing of health information with the mother's health care provider. Since all screening information would be protected under the Health Insurance Portability and Accountability Act of 1996 (HIPAA)⁴³, a mother would need to sign a consent form prior to the screening process to have her information shared. A recent article examining this issue concludes that the benefits for children of identifying mothers who are depressed early far outweigh the liability risks for pediatric providers, articulates this issue.⁴⁴

2) Child health providers may find it challenging to put a system of maternal depression screening into their busy practice routines.

Time, lack of adequate reimbursement, and practice routines all make it difficult to implement maternal depression screening in pediatric practice. In studies of the barriers to developmental screening of children in pediatric practice, providers consistently rate lack of time as the most critical.⁴⁵ These findings would likely apply to maternal depression screening as well. Although reimbursement is considered a barrier to screening, providers rarely cite it as the most important one. However, it clearly plays a role. When providers are reimbursed for services such as developmental screening, they often generate enough additional income to hire staff to assist with these activities. The provider's time is freed up to see more patients. Some pediatricians and family physicians bill for maternal depression screening under the category of infant risk assessment.⁴⁶ The Illinois Department of Public Aid provides reimbursement for maternal depression screening delivered by pediatric and other non-behavioral health providers.⁴⁷ This reimbursement is billed separately, and over and above the cost of the office visit.

Maternal depression screening can be implemented with a written, standardized tool or by provider interview as part of the history taking. Administration of standardized, written screening tools, which is the only method that is reimbursable, has been shown to be most ef-

fective in identifying mothers who are depressed.⁴⁸ It, however, requires some practice redesign to ensure that screening tools are distributed at the right visits, which would most likely be well child care visits.

The Assuring Better Child Health and Development (ABCD) initiative, which has successfully supported several states in implementing developmental screening in pediatric practices, has also helped states implement Medicaid reimbursement for screening.⁴⁹ This effort has been expanded to include socio-emotional screening, and is now addressing maternal depression. Illinois, having participated in the ABCD screening initiative, has now created policy to provide Medicaid reimbursement to pediatric providers for maternal depression screening.

3) Providers often don't know what resources are available for mothers who show signs of depression.

Although screening can improve the identification of maternal depression, clinical interventions for this disorder can only be realized if referrals to treatment are a part of the practice process. Collaborative relationships amongst a variety of medical and behavioral health providers and care coordination are essential to effective treatment for mothers.⁵⁰

Some communities have behavioral health resources specifically for women, including services for mothers who are depressed. The pediatrician's network of community-based

Obstacles to maternal depression screening are not insurmountable but require redesign of pediatric care in state policies, health and behavioral health systems and in community and practice settings.

services is generally limited to children's resources such as child and adolescent behavioral health providers, early intervention programs, and special education resources. If pediatric providers are to identify mothers with signs of depression, systems must be structured so that referrals and treatment options are readily available. Pediatricians must be supported in linking mothers to the care they need.

These obstacles are not insurmountable but require redesign of pediatric care in state policies, health and behavioral health systems and in community and practice settings. This may seem to present a monumental challenge, but several studies of maternal depression screening in pediatric practice suggest that it is feasible and yields a significant number of mothers who require intervention, and that intervention is effective in ensuring positive child outcomes.

Maternal depression screening in pediatric practice

The American Academy of Pediatrics' Periodic Survey of Fellows identified several characteristics of pediatricians who are likely to identify, refer and manage maternal depression. Eighty-two percent of the respondents in direct patient care claimed that they identify maternal depression. Of those who identify mothers with depression, 82% refer mothers to services outside of their practice, and 6% treat the mothers themselves. The most important physician characteristics related to identifying and managing maternal depression were believing

that impaired maternal health has an extreme effect on child health and working in a practice setting that offers child behavioral health services.⁵¹ The lack of behavioral health services has been shown to be a barrier to the identification and management of maternal depressive symptoms in another national survey of pediatricians.⁵² In North Carolina, co-location of mental health providers in pediatric practices and Medicaid coverage of mothers' mental health services under their children's eligibility has enhanced mothers' access to care and willingness to obtain mental health services.⁵³

Another study explored pediatricians' reports of how they managed their last recalled case of maternal depression, their perceptions of barriers to care, their confidence in their own skills, and their beliefs surrounding the identification and management of maternal depression.⁵⁴ Results revealed that 81% of responding pediatricians identified their last recalled case of maternal depression through the mother's physical appearance or her complaints. When depression was suspected, 48% of pediatricians did some form of further assessment. Only one fourth of pediatricians reported willingness to change their current approach to identifying maternal depression. However, pediatricians who reported they felt responsible for recognizing maternal depression were more likely to consider strategies to change their current practice and more likely to provide a more thorough assessment and intervention than pediatricians who did not believe the identification of maternal depression came under their purview.

Although the majority of pediatricians rely on maternal appearance to identify depression, utilization of standardized screening tools has been shown to be more effective.

Although the majority of pediatricians in this particular study reported relying on maternal appearance to identify depression, utilization of standardized screening tools has been shown to be more effective. Olson studied how both mothers and pediatricians respond to depression screening and the time necessary to discuss the screening results. A two-question paper screen, the Patient Health Questionnaire (PHQ 2), was used to screen 1,398 mothers. Seventeen percent of the mothers had one depressive symptom, and 6% were found to be at risk for a depressive disorder. In the majority of cases, additional discussion between the pediatrician and mother after the screen was administered took less than three minutes or no additional time at all. In only 5% of cases did discussion time take more than five minutes. These discussions identified mothers who thought they might be depressed even though their screening results indicated that their symptoms were at a low level.⁵⁵

Olson also compared using the short 2-question depression screen through a structured interview as opposed to a written screening tool.⁵⁶ The time needed to administer both modalities was brief and took less than one minute. Pediatricians screened 250 mothers using the interview method and 223 through written screens. While both methods were feasible in the primary care setting, many more mothers were identified with the written screen, 22.9% versus only 5.7% in the interview group. This finding was especially true for mothers of children younger than one year of age.

In summary, it appears that screening for maternal depression in the pediatric setting is feasible and productive. The maternal depression screening tools most commonly used in pediatric practice are described in Figure 1. Screening is not a time intensive activity for the practice, and mothers are willing to complete paper screening tools and talk with the pediatric provider about their symptoms. When paper screening forms are systematized into the daily practice routine, a higher rate of screening is realized. Clinician feedback suggests that parents respond to the structured screening approach positively.⁵⁷ Similarly, a study documenting the feasibility of parental self report surveys administered while parents are waiting for pediatric visits in a hospital clinic setting revealed that the survey facilitated both conversation between the pediatrician and parent and parental acceptance of referrals to community resources.⁵⁸

Recommendations for the timing of screening for maternal depression in the pediatric setting vary. While some suggest the screening process should be limited to the child's first year of life, others recommend screening should continue beyond that point. In a study of 3,412 mothers, it was found that symptoms of maternal depression appeared precipitously when the child was up to three years old with later positive screens being independent of earlier screening results. Results suggest that periodic screening for maternal depressive symptoms should be continued beyond the immediate postpartum period through the toddler period.⁵⁹

Figure 1: Maternal Depression Screening Tools Often Used in Pediatric Practice⁶⁰

Screening Tool	Method of Administration	Number of Items	Time to Complete	Time Frame Covered
EPDS Edinburgh Postnatal Depression Scale	Self-administered	10-item	< 5 minutes	Past 7 days
CES-D Center for Epidemiologic Studies Depression Scale	Self-administered	20-item	1-2 minutes	Past 7 days
Personal Health Questionnaire-2⁶¹	Self-administered	2-item	1-2 minutes	Past 2 weeks

Pediatricians' attitudes about treating maternal depression

Outside of family medicine practices, where providers treat adults as well as children, treatment of mothers for depression is out of the scope of pediatric practice. Olson found that although 57% of pediatricians believed they were responsible for identifying maternal depression, only 7% thought

their role included treatment.⁶² Pediatricians' responses to depressive symptoms included: referrals, education about the effects of maternal depression on children, and a follow up visit or phone call.

CONNECTICUT EFFORTS TO ADDRESS MATERNAL DEPRESSION

Since 2005 many groups including policy makers, academics, state agencies, practitioners, advocates and consumers have come together to call for increased attention to maternal depression and its effect on children. Connecticut is positioned to be in the forefront nationally by implementing recommendations such as those surrounding the screening of maternal depression in the pediatric setting. The work currently underway in Connecticut is summarized in Figure 2.

Figure 2: Maternal Depression Efforts in Connecticut

Perinatal Depression Advisory Board:

During the fall of 2005 the Connecticut Department of Public Health (DPH) established the state's first Perinatal Depression Advisory Board. This group provided oversight and feedback on several of the Department's initiatives, including: a media campaign, consumer focus groups, the selection of depression screening tools, the convening of a Perinatal Depression Summit, the distribution of perinatal depression fact sheets in all hospital newborn packets, and the establishment of two perinatal depression screening pilot projects in primary care practices.

Perinatal Depression Pilot Project: Community Health Center, Inc. a federally qualified health center (FQHC), was selected by DPH as one site to pilot a perinatal depression screening, referral and treatment program. As an FQHC which delivers obstetric, pediatric and behavioral health services to a low-income, underserved population, the Center was able to administer and document the screening of women for depression during pregnancy, their six week postpartum obstetrical visit and at intervals during the year following birth during their infants' well child care visits.

Figure 2: (Continued)

The results of this project revealed:

1. Rates of depression were higher among this low-income population compared to that of the general population with 33% of the 512 women in this study screening positive for depressive symptoms.
2. While 83% of the women who scored positive for depressive symptoms accepted a referral for behavioral health services, only 33% actually attended at least one visit. According to a follow-up qualitative study, barriers to obtaining mental health services included: not enough time, transportation, childcare and the need to focus on other problems.
3. A care coordinator designated to manage and oversee the screening and referral process is a key component to successful service delivery in this area.
4. Rates of depression were higher during the postpartum period than the prenatal period.
5. While age did not influence rates of depression, race and marital status did. African American women and unmarried women experienced significantly higher rates of depression than other races or than married women.⁶³

Health Care Provider Help Line:

DPH is establishing a health care provider help line. Through 211 Infoline, providers will be able to call with questions concerning the referral and treatment of women suffering from depression and to receive assistance with referral sources. Additionally, they will be able to speak directly with a behavioral health clinician to discuss treatment and medication options. The clinician line will be staffed through the Yale School of Medicine Department of Psychiatry. There will also be statewide provider trainings including training of primary care pediatric providers.

Healthy Start:

The Department of Social Services (DSS) has integrated screening and referrals for maternal depression into Connecticut's Healthy Start Program services. All Healthy Start sites are required to screen pregnant and postpartum women for depression, to make referrals when appropriate and to document such encounters for reporting purposes.

Medicaid Managed Care Council (MMCC)

The MMCC, under the leadership of Senator Toni Harp, has a long history of exploring strategies that will enhance the health of Connecticut citizens insured by Medicaid. The

Figure 2: (Continued)

protection and promotion of women's health is one area of the council's focus, and the issue of maternal depression is a priority. The MMCC convened Connecticut's first Women's Health Forum in 2007. With a focus on the two-generational effect of maternal depression, experts gathered to discuss various aspects of maternal depression and its negative impact on children. As a result of testimony presented at this forum, a series of recommendations were drafted and submitted to the MMCC and approved in April 2007. They include:

- support of a provider consultation phone line
- collaboration with the Connecticut Behavioral Health Partnership to develop provider training modules and dissemination of these modules using an academic detailing training model such as Educating Practices in the Community (EPIC)⁶⁴
- reimbursement for the screening of maternal depression with an expansion of service providers who may be eligible for such service reimbursement.

The details of these recommendations can be found on the MMCC website, www.cga.ct.gov/ph/medicaid. They have been incorporated into several ongoing state initiatives that address early childhood issues as

well as women's health. The Governor's Early Care and Education Cabinet has included maternal depression detection and treatment in its plan for infants and toddlers (First Words, First Steps).⁶⁵ DPH and DSS are also implementing recommendations through the activities listed above. There should be a triage line in effect by fall 2008, and expansion of Medicaid coverage for pregnant and postpartum women should enhance their access to behavioral health services.

Pregnancy Workgroup:

In continuation of the work surrounding women's health, which the MMCC started, Senator Harp charged a newly formed pregnancy workgroup with the task of identifying maternal characteristics associated with poor birth and child outcomes. Using the Results-Based Accountability method for identifying programs, strategies, and indicators of outcomes, the pregnancy workgroup focused on several indicators that influence the course of maternal well being, birth outcomes and infant development. Maternal depression was selected as an indicator requiring a targeted intervention. Recommendations addressing maternal depression included: the use of a validated tool to measure maternal stress, screening for depression and domestic violence during prenatal and pediatric visits, provider

Figure 2: (Continued)

trainings using the EPIC academic detailing model, funding to FQHCs to expand their behavioral health services and reimbursement for the screening and referral process. The 2nd Annual Women's Health Forum was convened in March 2008 and addressed the issues of maternal stress and depression, the two-generational effect and the pregnancy workgroup plan.

The Children's Fund of Connecticut (CFC) and the Child Health and Development Institute of Connecticut (CHDI):

CHDI, the operating arm of the CFC, a public charitable foundation focused on developing comprehensive, effective, community-based health and mental health care systems for children and their families, is funding four primary care pediatric sites to address children's mental health issues by partnering with behavioral health agencies. This collaboration includes offering onsite short term counseling and care coordination. Two of the sites will extend their work in 2008 to include screening for maternal depression and linkage of mothers to intervention services. Fairhaven Community Health Center, an FQHC in New Haven, will screen mothers for depression during well child visits and link them to the behavioral health services located onsite at the clinic. A clinic-based

care coordinator will track mothers' receipt of services and ensure that they follow through on appointments in the behavioral health unit at the clinic. In the Bridgeport Hospital Primary Care Center, mothers will complete a paper screen as part of well child services. Intervention services for mothers who screen positive will be provided by a combination of onsite behavioral health services and community-based adult mental health services.

RECOMMENDATIONS TO IMPROVE THE CAPACITY OF CONNECTICUT'S PEDIATRIC PRIMARY CARE PROVIDERS TO IDENTIFY AND REFER MOTHERS WHO SUFFER FROM DEPRESSION

Based on the information presented in this paper, including some of the recommendations put forth by policy groups in Connecticut, the following recommendations are made to promote policy and programs that support maternal depression screening and referral in pediatric practice. They offer strategies for policy makers, advocates, and pediatric providers committed to addressing maternal depression and its consequences for young children.

1. Train pediatric providers and their clinical support staff in formal screening for maternal depression as part of well child services. Use the Educating Practices in the Community (EPIC) model to train pediatric and family medicine practices in systematizing maternal depression screening within their well child services.
2. Ensure Medicaid and private insurance reimbursement for maternal depression screening in pediatric and other primary care settings. This reimbursement should be in addition to reimbursement for the office visit.
3. Establish easy referral options for primary care physicians who identify mothers showing signs of depression, such as telephone and web-based referral systems.
4. Reimburse primary care providers and those providing prenatal and postpartum services for care coordination activities associated with linking mothers to behavioral health services and for following maternal/child dyads as they receive mental health interventions.
5. Train behavioral health clinicians in strategies related to intervening with mothers who show signs of depression to increase the availability of behavioral health services for mothers who suffer from depression.
6. Reimburse behavioral health providers for maternal/infant interventions based on risk to the infant, without a formal diagnosis for the child.
7. Develop a statewide data system to monitor rates of maternal depression and receipt of intervention services to track the state's progress in identifying and treating mothers who suffer from depression.

Studies of maternal depression screening in pediatric practice suggest that it is feasible and yields a significant number of mothers who require intervention, and that intervention is effective in ensuring positive child outcomes.

CONCLUSION

Regardless of the etiology, postpartum depression results in impaired maternal functioning and can have profound and long term effects on the development and well-being of children. Although the operational definition of postpartum depression varies widely, maternal depression needs to be identified as early as possible and treated in order to prevent the associated effects on young children. Because of the frequency of contact mothers and children have with the primary pediatric provider, the pediatric setting is a likely venue for a maternal depression screening intervention.

Studies reveal that screening for maternal depression in the primary pediatric office is an effective strategy for identifying mothers who are depressed. Studies also demonstrate that the time required to deliver this service is minimal and that screening for maternal depression by pediatricians is viewed positively by mothers.

In order for the screening of maternal depression to become an integrated part of the pediatric practice, policy regarding reimbursement, legal, ethical and data sharing issues must be addressed. Providers also must be educated about the screening process and be assured of its efficacy. Models exist for the successful integration of maternal depression screening in the primary care pediatric setting, which can be utilized as examples while developing policies, procedures and protocols to support a statewide program of addressing maternal depression.

RESOURCES FOR LEARNING MORE ABOUT MATERNAL DEPRESSION

American Psychological Association:
<http://www.apa.org>

Depression.com:
http://www.depression.com/web_resources.html

National Institute of Mental Health:
www.nimh.nih.gov

National Mental Health Information Center:
<http://mentalhealth.samhsa.gov>

Postpartum Education for Parents:
<http://www.sbpep.org>

Postpartum Support International:
<http://www.postpartum.net>

The U.S. DHHS Office of Women's Health:
www.4women.gov/owh

LINKS TO SCREENING TOOLS:

Center for Epidemiologic Studies Depression Scale (CES-D), NIMH
<http://www.chcr.brown.edu/pcoc/cesdscale.pdf>

Edinburgh Postnatal Depression Scale
<http://www.fresno.ucsf.edu/pediatrics/downloads/edinburghscale.pdf>

Patient Health Questionnaire 2 (PHQ 2)
http://www.commonwealthfund.org/usr_doc/PHQ2.pdf?section=4061

References

- 1 CDC: Maternal and Infant Health: Home. Pregnancy Related Depression. <http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/index.htm>
- 2 Weinberg, M.K., Tronick, E.Z. Emotional Characteristics of Infants Associated With Maternal Depression and Anxiety. *Pediatrics* 1998; 102(5):1298-1304.
- 3 McLearn, K.T., Minkovitz, C., Strobino, D., Marks, E., Hou, W. Maternal Depressive Symptoms at 2 to 4 Months Post Partum and Early Parenting Practices. *Archives of Pediatric Adolescent Medicine* 2006; 160(3), 279-284.
- 4 Wilen, J., Mounts, K. Women with Depression – “You Can’t Tell by Looking”. *Maternal and Child Health Journal* 2006; 10 (supplemental 7), pp 183-187.
- 5 Gagliardi, A.D., Milan, S. (2007, December). Identification and Treatment of Depression in a Low Income Population. Poster session presented at the 13th Annual Maternal and Child Health Epidemiology Conference, Atlanta, Georgia.
- 6 American Academy of Pediatrics: Developmental Surveillance and Screening of Infants and Young Children. *Pediatrics* 2001;108(1)192-195.
- 7 Bright, D. Postpartum Mental Disorders. *American Family Physician*. 50(3), 595-598, 1994.
- 8 Ziporyn, T. Postpartum Depression: True Blue? Harvard Health Letter 1992; 17, (4) 1-3.
- 9 American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 4th Ed. Text Revision. Washington D.C. American Psychiatric Publishing, Inc., 2000.
- 10 Corwin, E.J., Murray-Kolb, L.E., Beard, J.L. Low Hemoglobin Level Is A Risk Factor For Postpartum Depression. *The Journal of Nutrition* 2003; 133: 4139-4142.
- 11 Harris, B., Othman, S., Davies, J.A., Weppner, G.J., Richards, C.J., Newcombe, R.G., Lazarus, J. H., Parkes, A.B., Hall, R., Phillips, D. I. Association between postpartum depression thyroid dysfunction and thyroid antibodies and depression. *British Medical Journal* 1992; 305 (6846): 52-56.
- 12 Beck, C.T. Predictors of postpartum depression: an update. *Nursing Res* 2001; 50 (5): 275-85.
- 13 Dole, N., Savitz, D.A., Hertz-Picciotto, I., Siega-Riz, A.M., McMahon, M.J., Buekens, P. Maternal Stress and Preterm Birth. *American Journal of Epidemiology* 2003;157: 14-24.
- 14 Wadhwa, P., Sandman, C., Porto, M., Dunkel-Schetter, C., Garite, T. The Association Between Prenatal Stress and Infant Birth Weight and Gestational Age at Birth: A Prospective Investigation. *American Journal of Obstetrics & Gynecology* 1993;169: 858-65.
- 15 Davis, E. P., Glynn, L. M., Schetter, C. D., Hobel, G., Chic-Demet, A., Sandman, C. Corticotropin-Releasing Hormone during Pregnancy is Associated with Infant Temperament. *Developmental Neuroscience* 2005; 27: 299-305.
- 16 Huizink, A., Robles, D., Pascale, G., Mulder, E., Visser, G., Buitelaar, J. Psychological Measures of Prenatal Stress as Predictors of Infant Temperament. *Child & Adolescent Psychiatry* 2002; 41 (9): 1078-1085.
- 17 Murray, L. The Impact of Postnatal Depression on Infant Development. *Journal of Child Psychology And Psychiatry* 1992; 33 (3): 543-561.
- 18 Teti, D., Gelford, D., Isabella, R., Messinger, D. Maternal depression and the quality of early attachment. *Developmental Psychology* 1995; 31 (3): 364-367.
- 19 Field, T. Early interactions between infants and their postpartum depressed mothers. *Infant Behavior and Development* 1984; 7: 517-522, 1984.
- 20 Spangler, G., Scheche, M., In, U., Maier, U., Ackerman, C. Maternal sensitivity as an external organizer for biobehavioral regulations in infancy. *Developmental Psychobiology* 1994; 27 (7): 425-431.
- 21 Luoma, I., Tamminen, T., Kaukonen, P., Laippala, P., Puura, K., Salmelin, R., Almqvist, F. Longitudinal study of maternal depressive symptoms and child well-being. *Journal of American Academy of Adolescent Psychiatry* 2001; 40 (12): 1367-13.
- 22 Hay, D., Pawlby, S., Angold, A., Harold, G., Sharp, D. Pathways to Violence in the Children of Mothers Who Were Depressed Postpartum. *Developmental Psychology* 2003; 39 (6): 1083-1094.
- 23 Kim-Cohen, J., Moffitt, T., Taylor, A., Pawlby, S., Avshalom, C. Maternal Depression and Children’s Antisocial Behavior. *Archives of General Psychiatry* 2005; 62 (2):173-181.
- 24 Phelan, K., Khoury, J., Atherton, H., Kahn, R.S. Maternal depression, child behavior, and injury. *Injury Prevention* 2007; 13: 403-408.
- 25 Larson, K., Russ, S., Crall, J., Halfon, N. Influence of Multiple Social Risks on Children’s Health. *Pediatrics* 2008; 121(2): 337-344..
- 26 Murray, L., Fiori, I., Cowley, A., Hooper, R. The impact of parental depression and associated adversity on early mother – infant interactions and later infant outcomes. *Child Development* 1996; 67: 2512-2526.
- 27 http://www.jhsph.edu/WCHPC/Projects/Healthy_Steps/
- 28 Minkovitz, C., Strobino, D., Scharfstein, D., Hou, W., Miller, T., Mistry, K., Swartz, K. Maternal Depressive Symptoms and Children’s Receipt of Health Care in the First 3 Years of Life. *Pediatrics* 2005;115(2): 306-14.
- 29 Bartlett, S., Krishnan, A., Riekert, K., Butz, A., Malveaux, F., Rand, C., Maternal Depressive Symptoms and Adherence to Therapy in Inner-City Children with Asthma. *Pediatrics* 2004; 113(2): 229-37.
- 30 Sills, M., Shetterly, S., Xu, S., Magid, D., Kempe, A. Association Between Parental Depression and Children’s Health Care Use. *Pediatrics* 2007; 119 (4): e829-e836.
- 31 Belle, D. Doucet, J. Poverty, Inequality, and Discrimination as Sources of Depression Among U.S. Women. *Psychology of Women Quarterly* 2003; 27 (2): 101-113.
- 32 Casey, P., Goolsby, S., Berkowitz, C., Frank, D., Cook, J., Cutts, D., Black, M., Zaldivar, N., Levenson, S., Heeren, T., Meyers, A. Maternal Depression, Changing Public Assistance, Food Security, and Child Health Status. *Pediatrics* 2004; 113: 298-304.
- 33 Pachter, L., Auinger, P., Palmer, R., Weitzman, M. Do Parenting and the Home Environment, Maternal Depression, Neighborhood, and Chronic Poverty Affect Child Behavioral Problems Differently in Racial-Ethnic Groups? *Pediatrics* 2006; 117 (4): 1329-38.
- 34 National Center for Children in Poverty. (2008, January). Reducing Maternal Depression and Its Impact on Young Children: Toward a Responsive Early Childhood Policy Framework. (Issue Brief No. 2). New York, New York: Jane Knitzer, Suzanne Theberge, Kay Johnson.

- 35 Sohr-Preston, S., Scaramella, L. Implications of Timing of Maternal Depressive Symptoms for Early Cognitive Language Development. *Clinical Child and Family Psychology Review* 2006; 9 (1): 65-83.
- 36 http://www.neuropsychiatryreviews.com/jun01/npr_jun01_antidepressants.html
- 37 Hart, S., Field, T., Nearing, G. Depressed Mothers' Neonates Improve Following the MABI and a Brazelton Demonstration. *Journal of Pediatric Psychology* 1998; 23(6): 351-356.
- 38 Lyons-Ruth, K., Connell, D., Grunebaum, H., Botein, S. Infants at social risk: Maternal depression and family support services as mediators of infant development and security of attachment. *Child Development* 1990; 103 (3): 576-581.
- 39 Chronis, A., Lahey, B., Pelham, B., William E., Williams, S. H., Baumann, B., Kipp, H., Jones, H., Rathouz, P. Maternal Depression and Early Positive Parenting Predict Future Conduct Problems in Young Children with Attention-Deficit/Hyperactivity Disorder. *Developmental Psychology* 2007; 43 (1): 70-82.
- 40 American Academy of Pediatrics, Committee on Practice and Ambulatory Medicine and Bright Futures Steering Committee, Recommendations for Preventive Pediatric Health Care *Pediatrics* 2007;120,1376.
- 41 Green, M., Palfrey, J.S., eds. *Bright Futures: Guidelines for Health Supervision of Infants, Children and Adolescents*. 2nd ed. Rev. Arlington, VA: National Center for Education in Maternal and Child Care; 2002.
- 42 <http://brightfutures.aap.org/web/healthCareProfessionalstoolsAndResources.asp>
- 43 Standards For Privacy of Individually Identifiable Health Information: Final Rule. 65 Federal Register 82462 (2000) codified at 45 CFR 160 and 164.
- 44 Chaudron, L., Szilagyi, P., Campbell, A., Mounts, K., McInerney, T. Legal and Ethical Considerations: Risks and Benefits of Postpartum Depression Screening at Well-Child Visits. *Pediatrics* 2007; 119 (1): 123-128.
- 45 Honigfeld, L., McKay, K., Barriers to Enhancing Practice-based Developmental Services. *J Dev Behav Pediatr* 2006; 27(1 Suppl):S30-3;
- 46 National Center for Children in Poverty. (2008, January). Reducing Maternal Depression and Its Impact on Young Children: Toward a Responsive Early Childhood Policy Framework. (Issue Brief No. 2). New York, New York: Jane Knitzer, Suzanne Theberge, Kay Johnson.
- 47 http://www.hfs.illinois.gov/mch/ppd_notice.html
- 48 Olson, A., Dietrich, A., Prazar, G., Hurley, J., Tuddenham, A., Hedberg, V., Naspinsky, D. Two approaches to maternal depression screening during well child visit. *Journal of Developmental and Behavioral Pediatrics* 2005; 26 (3).
- 49 National Association for State Health Policy. Assuring Better Child Health and Development Resource Center <http://www.abcdresources.org/>
- 50 Gjerdingen, D., Yawn, B. Postpartum Depression Screening: Importance, Barriers, and Recommendations for Practice. *The Journal of the American Board of Family Medicine* 2007; 20 (3): 280-288.
- 51 Heneghan, A., Chaudron, L., Storfer-Isser, A., Oark, E., Kelleher, K., Stein, R., Hoagwood, K., O'Connor, K., Horwitz, S.M. Factors Associated With Identification and Management of Maternal Depression by Pediatricians. *Pediatrics* 2007; 119(3): 444-454.
- 52 Horwitz, S.M., Kelleher, K.J., Stein, R.E., Storfer-Isser, A., Youngstrom, E.A., Park, E.R., Henegran, A.M., Jensen, P.S., O'Connor, K.G., Hoagwood, K. E. Barriers to the Identification and management of psychosocial issues in children and maternal depression. *Pediatrics* 2007; 119 (1): e208-e218.
- 53 National Center for Children in Poverty. (2008, January). Reducing Maternal Depression and Its Impact on Young Children: Toward a Responsive Early Childhood Policy Framework. (Issue Brief No. 2). New York, New York: Jane Knitzer, Suzanne Theberge, Kay Johnson.
- 54 Olson, A., Kemper, K., Kelleher, K., Hammond, C., Zukerman, B., Dietrich, A. Primary Care Pediatricians and Perceived Responsibilities in the Identification and Management of Maternal Depression. *Pediatrics* 2002; 110 (6): 1169-1176.
- 55 Olson, A., Dietrich, A., Prazar, G., Hurley, J., Tuddenham, A., Hedberg, V., Naspinsky, D. Two approaches to maternal depression screening during well child visit. *Journal of Developmental and Behavioral Pediatrics* 2005; 26 (3).
- 56 Olson, A., Dietrich, A., Prazar, G., Hurley, J., Tuddenham, A., Hedberg, V., Naspinsky, D. Two approaches to maternal depression screening during well child visit. *Journal of Developmental and Behavioral Pediatrics* 2005; 26 (3).
- 57 Olson, A., Dietrich, G.P., Hurley, J. Brief Maternal Depression Screening at Well-Child Visits. *Pediatrics* 2006; 118; 207-216.
- 58 Garg, A., Butz, A.M., Dworkin, P. H., Lewis, R.A., Thompson, R. E., Serwint, J.R. Improving The Management Of Family Psychosocial Problems At Low-Income Children's Well-Child Care Visits. *Pediatrics* 2007; 120(3): 547-558.
- 59 McLearn, K.T., Minkovitz, C.S., Strobino, D., Marks, E., Hou, W. The Timing of Maternal Depressive Symptoms and Mother's Parenting Practices With Young Children: Implications for Pediatric Practice. *Pediatrics* 2006; 118; 174-182.
- 60 Gaynes, B.N., et al., *Perinatal depression: prevalence, screening accuracy, and screening outcomes. Evidence report/technology assessment No. 119*. Agency for Healthcare Research and Quality, 2005; (AHRQ Publication No. 05-E006-2): p. 1-101.
- 61 Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. *Med Care* 2003; 41:1284-92.
- 62 Olson, A., Kemper, K., Kelleher, K., Hammond, C., Zukerman, B., Dietrich, A. Primary Care Pediatricians and Perceived Responsibilities in the Identification and Management of Maternal Depression. *Pediatrics* 2002; 110 (6): 1169-1176.
- 63 Gagliardi, A., Milan, S. (2006, October). Perinatal Depression Pilot Project: Identification, Referrals and Treatment of Perinatal Depression. Paper presented at the meeting of the Connecticut Department of Public Health Perinatal Depression Advisory Committee, Middletown, CT.
- 64 Kohrt A. Final Report of EPIC IC to Maternal and Child Health Bureau. *Project Title: Access to Medical Home for CSHCN Educating Practices in Community Integrated Care, (EPIC-IC). Pennsylvania Chapter, American Academy of Pediatrics (PA AAP)*. 2004.
- 65 First Words, First Steps is available at: <http://www.ecpolicycouncil.org/docs/FirstWordsDraft.pdf>



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