



Incorporating Recognition and Management of Perinatal Depression Into Pediatric Practice

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Perinatal depression (PND) is the most common obstetric complication in the United States. Even when screening results are positive, mothers often do not receive further evaluation, and even when PND is diagnosed, mothers do not receive evidence-based treatments. Studies reveal that postpartum depression (PPD), a subset of PND, leads to increased costs of medical care, inappropriate medical treatment of the infant, discontinuation of breastfeeding, family dysfunction, and an increased risk of abuse and neglect. PPD, specifically, adversely affects this critical early period of infant brain development. PND is an example of an adverse childhood experience that has potential long-term adverse health complications for the mother, her partner, the infant, and the mother-infant dyad. However, PND can be treated effectively, and the stress on the infant can be buffered. Pediatric medical homes should coordinate care more effectively with prenatal providers for women with prenatally diagnosed maternal depression; establish a system to implement PPD screening at the 1-, 2-, 4-, and 6-month well-child visits; use community resources for the treatment and referral of the mother with depression; and provide support for the maternal-child (dyad) relationship, including breastfeeding support. State chapters of the American Academy of Pediatrics, working with state departments of public health, public and private payers, and maternal and child health programs, should advocate for payment and for increased training for PND screening and treatment. American Academy of Pediatrics recommends advocacy for workforce development for mental health professionals who care for young children and mother-infant dyads, and for promotion of evidence-based interventions focused on healthy attachment and parent-child relationships.

abstract

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BACKGROUND INFORMATION

A 2010 clinical report from the American Academy of Pediatrics (AAP) described the rationale and need for screening for postpartum depression (PPD) in pediatric primary care.¹ Although primary care clinicians (PCCs) have improved the rates of integrating screening in practice since then, according to the 2013 periodic survey of AAP members, less than half of pediatricians screened mothers for depression. The expanding understanding of the effects of adverse childhood experiences, the recognition of screening as an evidence-based recommendation by the US Preventive Services Task Force (USPSTF),^{2,3} and the statement of the Centers for Medicare and Medicaid Services (CMS)^{4,5} for support of the coverage of PPD screening under Early and Periodic Screening, Diagnostic and Treatment services have emphasized that it is time to close the gap in rates of screening.

Maternal depression affects the whole family.⁶ This policy statement focuses specifically on the effects of maternal depression on the young infant and the role of the pediatric PCC (physician, nurse practitioner, or physician assistant) in identifying PPD and referring the mother-infant dyad for treatment. Perinatal depression (PND) is a major or minor depressive disorder, with an episode occurring during pregnancy or within the first year after the birth of a child. A family history of depression, substance use, marital discord, family violence, isolation, poverty, difficult infant temperament, young maternal age, chronic illness, and a personal history of depression increase the risk of PND.⁷ In addition, the risk is also higher with multiple births, preterm birth, and congenital or acquired physical or neurodevelopmental deficits in the infant. Stressful transitions, such as returning to work, may also be a

risk factor. Minority, immigrant, and refugee populations are especially at risk because they face the added stress of adjusting to and learning to function in a new environment without as much local family support and with added financial concerns or cultural barriers (language or not asking for help because of cultural norms or lack of awareness of resources).^{8,9}

Pediatric PCCs are in a good position to recognize the signs of PPD because they are in frequent contact with parents of infants. PND peaks in women 18 to 44 years of age. In general, as many as 12% of all women who are pregnant or in the postpartum period experience depression in a given year, and 11% to 18% of women report postpartum depressive symptoms. The prevalence in women with low income is estimated to be double at 25%. Moreover, adolescent mothers with low income report depressive symptoms at a rate of 40% to 60%.¹ Minor depression peaks at 2 to 3 months postpartum, and the peak for major depression is at 6 weeks postpartum. There is another peak for depression at 6 months postpartum. Depression in a parent is known to have a profound effect on infants and other children in the family. A growing understanding of early brain development reveals the ecobiodevelopmental factors that determine lifelong physical and mental health. In fact, according to a study by the Centers for Disease Control and Prevention, PPD is 1 of the most common adverse childhood experiences that are associated with the costliest adverse adult health outcomes.¹⁰

Studies have documented that maternal health care costs associated with PPD are 90% higher than those for comparison groups of women who are postpartum and do not have PPD; the difference is attributable to increased use of mental health

services and emergency department visits by both mothers and children. Overall, costs to employers for US workers with PPD, including worker absence and lost productivity, are \$44 billion per year and \$12.4 billion in health care costs.^{11,12}

PPD has a spectrum ranging from milder symptoms of “postpartum blues” to PPD and postpartum psychosis (PPP). It is estimated that 50% to 80% of all mothers experience postpartum blues after childbirth. These symptoms are transient (beginning a few days after childbirth and lasting up to 2 weeks), but they do not impair function. Symptoms include crying, depressed mood, irritability, anxiety, and confusion.

PPD meets the criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* as a major depressive disorder. Anxiety is a common component of PPD.¹³ If a woman experiences PPD, she is likely to experience it with subsequent pregnancies. However, PPD can also affect mothers with subsequent pregnancies even without a previous history with earlier births.

PPP is a relatively rare event. Only 1 to 2 per 1000 women experience PPP after childbirth. Occurring in the first 4 weeks after childbirth, impairment is serious and may include paranoia, mood shifts, hallucinations and/or delusions, and suicidal and/or homicidal thoughts. PPP requires immediate medical attention.

Fathers also suffer from PPD, with a prevalence rate that varies from 2% to as high as 25%, with an increase to 50% when the mother experiences PPD.^{14–19} Although the rate of paternal depression is higher when the mother has PPD (which compounds the effect on children), a father who is not depressed is 1 protective factor for children of mothers with depression. Fathers are

less likely to seek help. They are more likely to present with symptoms of substance use, domestic violence, and undermining breastfeeding instead of sadness.²⁰

IMPACT ON THE INFANT, DYAD, AND FAMILY

Research on early brain development, toxic stress, epigenetics, and adverse childhood experiences has revealed the physiologic effect of the infant's environment on health, development, and learning in the short- and long-term.²¹ An infant in the environment of significant maternal depression is at risk for toxic stress and its consequences. Toxic stress is an unhealthy prolonged activation of the stress response unbuffered by a caregiver. Physiologic responses to stress in the infant's environment affect the infant's social-emotional development. The infant, therefore, is at risk for impaired social interaction and delays in language, cognitive, and social-emotional development.

Sequelae of untreated maternal PPD include failure to implement the injury-prevention components from anticipatory guidance (eg, car safety seats and electrical plug covers),²² failure to implement preventive health practices for the child (eg, Back to Sleep campaign),^{22–25} and difficulty managing chronic health conditions (such as asthma or disabilities) in the young child.^{23,26} Families with a parent who is depressed (ie, any parental depression) overuse health care and emergency facilities, often presenting with somatic complaints.²⁶

Untreated PPD can lead to impaired parent-child interaction, discontinuation of breastfeeding, child abuse and neglect, and family dysfunction.²⁷ In extreme situations, it can result in suicide or infanticide. With PPD, there is potential immediate impairment of parenting. PPD can:

- hinder bonding, reciprocal interaction, and healthy attachment;
- distort perception of the infant's behavior;
- cause the mother to be less sensitive and attuned, indifferent, or more controlling; and
- impair the mother's attention to, and judgment for, health and safety.

Because maternal depression compromises bonding, the mother-child relationship may create an environment in which the infant withdraws from daily activities and may avoid interaction. In this situation, the infant is at risk for failure to thrive and attachment disorders of infancy (reactive attachment disorder or other trauma, stress and deprivation disorder, or relationship-specific disorder of infancy and early childhood, as defined in the *Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood*).²⁸

Early response to PPD is urgent. If the mother continues to experience depression and there is no intervention for the mother-infant relationship, the child's developmental issues are likely to persist and be less responsive to intervention over time. Long-term effects extend to preschoolers and older children. Maternal depression in infancy also is predictive of cortisol levels in preschoolers, and these changes in levels are linked with anxiety, social wariness, and withdrawal.^{29–32} As they age, children of mothers who are untreated for PPD often have poor self-control, poor peer relationships, school problems, and aggression. These children may need special education services, can experience grade retention, and may exit school

early.³³ Attachment disorders, behavior problems, and depression and other mood disorders can occur into childhood and adolescence.³⁴

THE ROLE OF THE MEDICAL HOME

PCCs caring for infants have crucial opportunities to promote healthy social-emotional development, to prevent (beginning at prenatal visits) and/or ameliorate the effects of toxic stress,³⁵ and to provide routine screening for PPD in early infancy. Pediatric PCCs also have the opportunity to perform depression screening in pregnant mothers at sibling visits. Pediatric medical homes can establish a system to implement screening and to identify and use community resources for the further assessment and treatment of the mother with depression as well as for the support of the mother-child dyad. Identification and coordinating access to treatment of PPD are evidence-based examples of the successful buffering of toxic stress or an adverse childhood experience by pediatricians. Despite previous recommendations, less than half of pediatricians screened mothers for maternal depression in the 2013 periodic survey of AAP members, and it is now time to close the gap.^{36,37}

There is much support for primary care incorporating these approaches. The AAP policy statement "The Future of Pediatrics: Mental Health Competencies for Pediatric Primary Care" recognizes the unique advantage the PCC has for surveillance, screening, and working with families to improve mental health outcomes.³⁸ The AAP Task Force on Mental Health promotes the use of a common-factors approach to engage families and build an alliance for addressing mental health issues. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents, fourth Edition*³⁹ places particular emphasis on engaging

families in identifying parental strengths and discussing social determinants of health. Screening for PPD in the medical home is consistent with this 2-generation emphasis.

IMPLEMENTATION

The infant and the mother-infant dyad relationship are the primary concerns of the pediatric PCC. Treatment, when focused solely on the adult, is often less effective than treatment that is focused on the mother-infant dyad. Apart from the adolescent mother who is a patient of the pediatric practice, the mother is generally not the pediatric PCC's patient, but concern extends to the mother herself as well as to her partner. Using a validated tool to screen for depression is 1 of the ways PCCs engage families about psychosocial risks. PCCs (often using a formal surveillance tool or standardized questions) also ask about homelessness, food insecurity, domestic violence, tobacco use, substance use, guns in the home, etc, so they can link the family with community resources, if needed, to reduce the risk for the child. The pediatric PCC also manages the child closely to monitor the possible effects of these risk factors. Referral and follow-up for the infant and mother-infant dyad are the major areas of focus for the pediatric PCC, but knowledge of community resources to which to refer the parent, including knowing how to access community mental health crisis services, is essential to implementing an office process for screening. Implementation often requires a quality improvement approach to office process.

Concerns may be raised regarding liability for the pediatric PCC because the mother is not the patient of that

visit. Screening for PPD is performed for the benefit of the infant because the well-being of the infant is inextricably linked to the mother-infant dyad. The pediatric PCC's focus is the dyad, and the PCC is facilitating referral for the mother, not providing treatment.

Surveillance and Screening

Over the course of routine well-child care, the pediatric PCC and the family are developing a longitudinal relationship. A crucial part of this relationship is eliciting parent, family, and child strengths and risks. Psychosocial screening and surveillance for risk and protective factors is an integral part of routine care. Pediatric PCCs need to be aware of and promote protective factors, such as parental knowledge and skills about child development and caregiving, good parental or caregiver physical and mental health, positive father or partner involvement, strong emotional bonding or attachment between infant or child and parent or caregiver, and social supports (ie, friends, neighbors, relatives, faith-based groups, and other agencies). According to resilience theory, an individual's resilience is determined by balancing risk and protective factors in the face of adversity.⁴⁰ Promotion of family protective factors promotes resiliency. For example, a father who is not depressed is one protective factor for infants of mothers with depression.

The prenatal visit to the pediatric office is an excellent opportunity for the pediatric PCC and expectant parent(s) to discuss strengths and stressors during pregnancy, including depression.³⁵ The pediatric PCC may be able to provide anticipatory guidance and to initiate supportive strategies for the mother for the benefit of the infant, even before the infant's birth. Obstetricians and other obstetric providers who identify depression during pregnancy can

be especially encouraged to refer prospective parents to pediatricians prenatally so that postpartum management of PND is coordinated. Communication between the obstetrician and pediatric PCC is desirable for this reason. The American College of Obstetricians and Gynecologists specifically recommends this collaboration between obstetricians and their pediatric colleagues.⁴¹ In turn, pediatric PCCs would encourage communication on behalf of the infant.

On the basis of knowledge regarding peak occurrence times for PPD, routine screening in which a validated screening tool is used should occur at well-infant visits at 1, 2, 4, and 6 months. Repeated screening at these visits allows for a mother who may not be comfortable disclosing initially to do so at a later visit, and it maximizes the opportunity to engage a dyad that may miss 1 or more of the recommended well-infant visits. Components of documentation in the infant's chart include the type of screening tool used, results, discussion with the mother or parents (whether positive or negative), and a follow-up and referral plan if indicated. There is no reason to open a chart on the mother because she is not receiving treatment. Although not the focus of this statement, it should also be noted that there are recommendations that PPD screening should be performed for the parents of infants who are hospitalized and the parents of infants up to 1 year of age seen in the emergency department.^{42,43}

Pediatricians should be encouraged to consider screening the partner as well at the 6-month visit with the Edinburgh Postpartum Depression Scale (EPDS), either in person if the partner is present or by having the partner fill out the screen at home and mail it back. If the partner is male, this process is more feasible

if the pediatrician has identified referral resources when he screens positive for depression.

Screening tools for PPD include the EPDS (note that the EPDS is now included within the Survey of Well-being of Young Children [SWYC]) or the Patient Health Questionnaire. The EPDS is completed by the mother, and a score of 10 or greater indicates possible depression. The EPDS also contains 2 questions regarding anxiety. Screening for PPD by using the EPDS has now been validated for men as well as women.²⁰

It should be noted that screening is not diagnostic. A positive screen result indicates a risk that depression is present, and the purpose of referral is to clarify the diagnosis and offer the indicated treatment.

As with other screening implementations, it is essential for the practice to understand and prepare for referral and linkages with appropriate resources for children and/or families who are identified as at risk.

Follow-up, Referral, Treatment

When screening reveals a concern, next steps include communication and demystification, support, identification of community and family resources, and referrals as indicated.

Immediate action is necessary if question 10 on the EPDS is positive (indicating possible suicidality), if question 9 on the Patient Health Questionnaire 9 is positive (indicating possible suicidality), if the mother expresses concern about her or her infant's safety, or if the PCC suspects that the mother is suicidal, homicidal, severely depressed, manic, or psychotic. As with any mental health crisis in which suicidality is a concern, referral to emergency mental health services (most communities have mental health crisis teams or services) is needed, and the mother should only leave

with her support person or under the care of community resources, such as mental health crisis services or emergency medical services.

When a depression screen result is positive, management will vary according to the degree of concern and need. Because the mother is not the patient of the pediatrician, a detailed discussion of treatment of the mother is outside the scope of this article, but a Cochrane review of a few studies of mothers with PPD revealed that there is no difference between the effectiveness of antidepressants and psychological and/or psychosocial treatments.⁴⁴ At the very least, management will require support and demystification. Management of PPD includes:

- demystification (reducing guilt and shame by emphasizing how common these feelings are);
- support resources (family and community); and
- referrals for the mother (to a mental health professional or the mother's PCC or obstetrician), for the mother-infant dyad, for the child (for targeted promotion of social-emotional development and early intervention [EI]), and for the mother who is breastfeeding (for lactation support from an experienced provider).

Regardless of the referral arrangement, a key component is a follow-up with the mother to be certain that she is receiving treatment and that depressive symptoms are decreased. Such follow-up could be conducted by a designated referral person on the practice staff.

Demystification removes the mystery about maternal depression, acknowledging that PPD happens to many women, that the mother is not at fault or a "bad" mother, that depression is treatable, and that the PCC is a resource. A brief intervention at the visit would involve:

- promoting the strength of the mother-infant relationship;
- encouraging the mother and reassuring her regarding any concerns about breastfeeding;
- encouraging understanding and responding to the infant's cues;
- encouraging reading and talking to the infant;
- encouraging routines for predictability and security, sleep, diet, exercise, and stress relief;
- promoting realistic expectations and prioritizing important things; and
- encouraging social connections.

To follow-up on the impact on the infant and dyad, use of a screening tool for infant social-emotional development is appropriate. One such tool, the Baby Pediatric Symptom Checklist, is brief and in the public domain as part of the SWYC. It screens for irritability, inflexibility, and difficulty with routines. The Ages & Stages Questionnaires: Social-Emotional, Second Edition is another infant social-emotional screening tool (not in the public domain). It is completed by the parent, has a single cutoff score, and screens affect, self-regulation, adaptive functioning, autonomy, compliance, and communication.⁴⁵⁻⁴⁷

If there are concerns about attachment and bonding, the dyad needs referral to a mental health professional with expertise in the treatment of young children. Evidence-based interventions for the dyad (child's age 0-5 years) include child-parent psychotherapy, Circle of Security (www.circleofsecurityinternational.com), and Attachment and Biobehavioral Catch-up.^{46,47} These interventions are used to address the dyadic relationship in high-risk families and are often used in situations of abuse and neglect or interpersonal violence, and with Circle of Security, in the setting of PND. A key component of follow-up

is comanagement (and standardized communication) with the mental health professional serving the dyad.

If the practice has an integrated mental health professional, such as a licensed clinical social worker or counselor, that team member can provide immediate triage for a positive screen, administer secondary screens, offer support and follow-up, facilitate referrals, and coordinate follow-up with the PCC.

Referral to EI services for children from birth to 3 years of age through Part C of the Individuals with Disabilities Education Act is also important to address the dyad relationship.^{48–50} EI in the home can provide modeling for interaction and play to prevent toxic stress and promote healthy development. However, in many states, it is difficult to access EI services because of eligibility processes. This difficulty is attributable in part to funding limitations, leading to more restrictive eligibility, but the crucial issue is that the domain of social-emotional development may not be included in eligibility criteria. Given the inextricable connection of social-emotional development to cognitive and language development, such eligibility policies can be detrimental to children and families.

Community resources include Early Head Start, Healthy Start, home visiting programs, and other community organizations. Other community resources for the family include public health nurses, lactation specialists, parent educators, parent support groups, parent-child groups, and postpartum support groups.

Coding and Billing

The AAP, along with the USPSTF^{2,3} and the CMS,^{4,5} recognizes that PPD screens are a measure of risk in the infant's environment, and therefore, billing is appropriate at the infant's visit, with the infant as the patient. *Current Procedural Terminology* code 96161 (effective as of January 2017)

allows reporting of the administration of a caregiver-focused health risk assessment (eg, parent depression screen) for the benefit of the patient. However, because billing codes may vary by payer and by state, PCCs are advised to consult AAP state chapter pediatric councils and payers for updated coding guidance. When a screen result is positive, the PCC should be familiar with coding on the basis of counseling time and complexity when indicated.

CONCLUSIONS

The 2010 AAP clinical report¹ acknowledged that PPD leads to adverse effects on infant brain development, family dysfunction, cessation of breastfeeding, inappropriate medical treatment of the infant, and increased costs of medical care. Since that time, PCCs in several states have successfully implemented screening and have built referral relationships for evidence-based interventions, for community resources for the treatment and referral of the mother with depression, and for resources to support the mother-child (dyad) relationship.

National recognition of toxic stress, adverse childhood experiences, and the importance of trauma-informed care has led to recommendations for recognition and intervention from professional and policy organizations, including the USPSTF and CMS as well as the AAP. Recognizing and building resilience against toxic stress, education, and advocacy has been a focus of the national advocacy campaign of the AAP Section on Pediatric Trainees (<https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/resilience/Pages/default.aspx>).⁵¹

The pediatric PCC has a unique opportunity to identify PPD and help prevent untoward developmental and mental health outcomes for the infant and family. Screening has proven

successful in several initiatives and locations and can be implemented in office workflow by PCCs caring for infants and their families. Intervention and referral are optimized by collaborative relationships with community resources and/or by collocated and/or integrated mental health in primary care.

RECOMMENDATIONS

Routine screening for PPD should be integrated into well-child visits at 1, 2, 4, and 6 months of age. This screening schedule is recommended in *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents, Fourth Edition*.³⁹ PPD screening has also been recognized as evidence based according to the USPSTF (Grade B recommendation; see accompanying technical report⁵²). Training and continuing medical education programs should be available for all pediatric providers on the subject of PPD screening and referral.⁴

OPPORTUNITIES FOR ADVOCACY

1. AAP chapters, other stakeholders, and state public health agencies and officials can increase awareness of the need for PPD screening as outlined in the obstetric and pediatric periodicity of care schedules. Advocacy should be conducted with commercial payers to ensure payment for PPD screening and related services.
2. In keeping with current CMS recommendations, state Medicaid programs may pay for PPD screening under Early and Periodic Screening, Diagnostic and Treatment using a validated screening instrument, such as the EPDS, Patient Health Questionnaire, or the SWYC.
3. The AAP can collaborate with the American College of

Obstetricians and Gynecologists to encourage prenatal referral of all mothers to the PCC of the infant so that care is coordinated and integrated for families at a high risk for PPD.⁵³

4. Screening of mothers for PPD by pediatricians at least once during the first 6 months after birth should be part of quality metrics used for payment.
5. Establishment of consultation and referral resources to improve access to treatment of mothers identified with PPD should be advocated.
6. Workforce development should be promoted for mental health providers who care for young children and the parent-infant dyad.
7. Evidence-based interventions focused on healthy attachment and parent-child relationships should be promoted.
8. Federal funding should be advocated for states to establish, improve, or maintain programs for screening, assessment, and treatment services for women who are pregnant or who have

given birth within the preceding 12 months, as required under the 21st Century Cures Act of 2016 (Public Law 114–255).

9. Inclusion of social-emotional development as a domain for eligibility in Part C programs should be supported.
10. Creation of postpartum support networks in local communities should be encouraged by partnering with local businesses and nonprofits.
11. Media campaigns and messaging to counteract stigma associated with PND should be encouraged.

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ABBREVIATIONS

AAP: American Academy of Pediatrics
CMS: Centers for Medicare and Medicaid Services
EI: early intervention
EPDS: Edinburgh Postpartum Depression Scale
PCC: primary care clinician
PND: perinatal depression
PPD: postpartum depression
PPP: postpartum psychosis
SWYC: Survey of Well-being of Young Children
USPSTF: US Preventive Services Task Force

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