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Maternal Depression: Implications for Systems Serving Mother and Child

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Implications

- Identification of and treatment for maternal depression may improve short- and long-term outcomes for mothers and their children.
- Untreated maternal depression has been associated with negative outcomes in the areas of employment and income, which has potential cost implications for the public assistance system.
- Untreated maternal depression has been associated with poor health outcomes for both mothers and children, which may be associated short-term and long-term costs to the health system.
- Maternal depression is also linked to early childhood developmental delays, which put children at greater risk of needing early intervention services.
- Children of depressed mothers are more at risk for early cognitive developmental delays and poor academic performance, which could increase needs for special education services.
- Untreated maternal depression may increase risk for child maltreatment and neglect, which may increase need for subsequent involvement of the child welfare system.
- Ultimately, reducing the prevalence of maternal depression may have short- and long-term financial implications for the publicly funded systems that serve depressed mothers and their children.

SUMMARY ■ This report highlights evidence on the impact of maternal depression on the mother and child as it relates to the public-sector systems that serve them and discusses potential short- and long-term cost implications. The goal of this brief is to serve as a source of information for state and local policymakers and practitioners concerned with child and family outcomes, and to inform them of the evidence connecting maternal depression and negative outcomes for mother and child. The overview of the evidence is not meant to be exhaustive; rather, this brief highlights evidence most relevant to the impact of untreated maternal depression on both the mother and the child and the potential cost implications for systems that serve those families affected by depression. Due to the lack of clear data implicating the specific costs of maternal depression to each public-sector system, this brief focuses on the conceptual links between maternal depression and negative outcomes, as well as the hypothesized impact on each system.

BACKGROUND

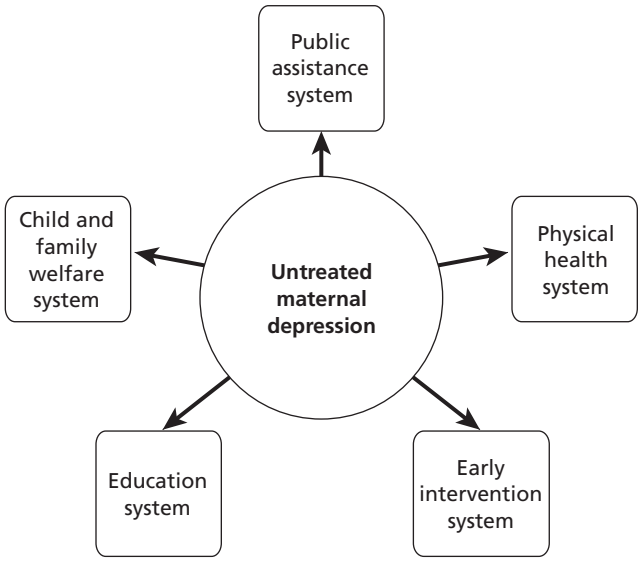
Depression affects millions of Americans each year and bears significant societal and financial costs (Kessler, 2012; Wang et al., 2006). However, it is estimated that only 25 percent of individuals with depression receive appropriate care (Young et al., 2001). Given that women are almost twice as likely to experience depression compared to men (Gaynes et al., 2005;

Kessler et al., 2003; Kessler et al., 2005) and that the majority of women age 15 to 50 have children (U.S. Census Bureau, 2012), maternal depression is an important and potentially costly issue.

Each year, more than 400,000 babies are born to women experiencing depression (Earls, 2010) and an estimated 15 million children live with a mother experiencing depression (National Research Council and Institute of Medicine, 2009). Untreated maternal depression has potentially serious consequences for a woman's overall well-being, her functioning as a mother, the family's functioning, and her child's development (Cummings et al., 2008; Elgar et al., 2007; Goodman & Gotlib, 1999; Lim, Wood, & Miller, 2008; Onunaku, 2005; Field, 2000). However, identification of and treatment for maternal depression may improve short- and long-term outcomes for both mothers and their children (Center on the Developing Child at Harvard University, 2009; Cicchetti, Rogosch, & Toth, 2000; Clark, Tluczek, & Wenzel, 2003).

In turn, reducing the prevalence of maternal depression may also have short- and long-term financial implications for the publicly funded systems that serve depressed mothers and their children. Evidence on the cost-benefit ratio of treating maternal depression is limited to local estimates that include only some of the potential costs discussed in this brief (Diaz & Chase, 2010; Lynch & Harrington, 2003). However, these estimates suggest that the public benefits of treating a case of maternal depression are likely to exceed the costs. In an effort to provide context to the potential impact of untreated maternal depression, this report summarizes evidence on the two-generational (mother and child) negative implications of maternal depression on different public-sector systems that serve mothers and children (see Figure). While this overview is not meant to be exhaustive, we highlight evidence relevant to the impact of untreated maternal depression on both the mother and the child and describe the potential short- and long-term cost implications for some of the systems that may be affected.

Public Sector Systems Affected by Maternal Depression



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IMPLICATIONS OF MATERNAL DEPRESSION ON PUBLIC-SECTOR SYSTEMS

In this section, we summarize some of the evidence on the impact of maternal depression (on the mother and child) as it relates to different public-sector systems, including public assistance, physical health, early intervention, education, and child welfare. In each section, we also highlight the potential short- and long-term impact on the public-sector system.

Public Assistance System

Untreated maternal depression has been associated with negative outcomes in the areas of employment and income, which has potential cost implications for the public assistance system. Depressed mothers are more likely to be unemployed (20 percent vs. 8 percent) and less likely to be employed full time (40 percent vs. 52 percent) when compared to nondepressed mothers (Ertel, Rich-Edwards, & Koenen, 2011). However, because these data were cross-sectional, the correlation remains unclear; i.e., the extent to which depression causes unemployment versus unemployment leading to depression. Depressed mothers may also have difficulty getting and keeping a job, leading to lower income and a greater need for public assistance (Ertel, Rich-Edwards, & Koenen, , 2011; Kawakami et al., 2012; Lepine & Briley, 2011; Turney, 2012). For the general population, depression has been shown to be predictive of greater work disability in the short term and of lower income over time (Kawakami et al., 2012; Lepine & Briley, 2011).

Moreover, treatment of depression has been shown to improve work productivity and decrease absenteeism (Rost, Smith, & Dickinson, 2004; Schoenbaum et al., 2002; Wang et al., 2006). Given the costs associated with unemployment and low income—such as Temporary Assistance to Needy Families; unemployment benefits; food stamps; assistance from Women, Infants and Children—reducing the occurrence of maternal

> Reducing the prevalence of maternal depression may have short- and long-term financial implications for the publicly funded systems that serve depressed mothers and their children.

depression has potential cost savings implications for the public assistance system.

Physical Health Care System

Untreated maternal depression has been associated with poor health outcomes for both mothers and children. For the mother, depression may increase the likelihood of certain disease conditions both during the maternal part of her lifecycle as well as throughout her entire life course. Depressed women are more likely to have cardiovascular disease (Farr et al., 2011; Pan et al., 2011; Wuslin, 2004), stroke (Rexrode, 2010) and type-2 diabetes (Bowers et al., 2013; Farr et al., 2011; Mezuk et al., 2008; Pan et al., 2011). Some studies found women with major depression to be 3.6 times more likely than nondepressed women to have diabetes and chronic disease risk factors (Farr et al., 2011) and 1.45 times more likely to have a stroke (Pan et al., 2011).

Maternal depression also may lead indirectly to poor health outcomes for the child, such as increased risk for infant hospitalization (Chung et al., 2004) and asthma morbidity (Pak & Jackson Allen, 2012). Babies born to depressed women are also more likely to be premature (Li, Liu, & Odouli, 2009; Orr, James, & Blackmore Prince, 2002) and are at greater risk of being small for gestational age (U.S. Department of Health and Human Services, Office of Women's Health, 2009); both of these factors increase the likelihood of neonatal intensive care unit (NICU) stays, which are costly. One analysis estimated that the cost of a night in the NICU was nearly 2.4 times the cost of a regular nursery night (Adams et al., 2002) with NICU stays typically lasting several weeks for most babies. Identifying and treating maternal depression provides one means of reducing prevalence of certain disease conditions and poor birth outcomes to potentially offset some of the associated short-term and long-term costs to the health system.

Early Intervention System

Maternal depression is also linked to early childhood developmental delays. Depressed mothers may be more likely to have children with early childhood developmental delays and thus require services through the early intervention system. Research indicates that maternal depression poses a serious risk to the quality of the parent-child relationship (Cummings et al., 2008; Elgar et al., 2007; Goodman & Gotlib, 1999; Lim et al., 2008), which in turn can threaten a child's physical, social, and cognitive development during early childhood (Davies, Winter, & Cicchetti, 2006; Sroufe et al., 2005). For instance, infants and young children of depressed mothers have increased risk for social and emotional problems (Moore, Cohn, & Campbell, 2001; Whitaker, Orzol, & Kahn, 2006) and delays or impairments in cognitive and linguistic development (Grace, Evindar, & Stewart, 2003; Downey & Coyne, 1990). These impairments or delays put children at greater risk of needing early intervention services related to cognitive and language delays. Additionally, mothers of children with developmental delays are more likely to experience depression (National Research Council and Institute of Medicine, 2009), potentially perpetuating the negative cycle and increasing short- and long-term costs associated with early intervention services.

Education System

Untreated maternal depression can potentially have negative effects on child-level education outcomes as well. Children of depressed mothers may be less likely to enter school ready to learn because of increased risk for early cognitive developmen-

tal delays and poor academic performance (Kersten-Alvarez et al., 2012; Sohr-Preston & Scaramella, 2006). This, in turn, may increase children's needs for special education services. For instance, children of depressed mothers show lower IQs (significant difference of 4.5 points) during the early childhood years (Evans et al., 2012), potentially leading to greater need for special education services. Given that quality special education costs on average 1.3 times as much as teaching students without special needs (Augenblick and Associates, Inc., 2009), the increased risk for cognitive developmental delays and poor academic performance due to maternal depression may incur downstream costs to the public education system.

Child Welfare System

Untreated maternal depression may increase risk for child maltreatment and neglect (Collishaw et al., 2007; Hazen et al., 2006; Koverola et al., 2005; Taylor et al., 2009) due to the lack of attentiveness and responsiveness associated with depression (Diego, Field, & Hernandez-Reif, 2005). This, in turn, may increase risk for subsequent involvement of the child welfare system. Given the high costs associated with child victims of maltreatment—e.g., estimated lifetime cost is approximately $210,012 per child (Fang et al., 2012)—reducing some of the risk for child maltreatment through prevention or treatment of maternal depression may help offset costs within the child welfare system.

CONCLUSIONS

As outlined here, untreated maternal depression may have far-reaching negative implications for mothers and children, many of which may be associated with high costs for multiple public-sector service systems. Despite the frequency of depression among new mothers, large numbers of affected women and their children go unidentified, and an estimated 85 percent do not seek treatment (Center on the Developing Child at Harvard University, 2009). Although the potential costs associated with untreated maternal depression may be reduced or eliminated by focusing additional resources on the identification and treatment of depression, prevention efforts to reduce risk for, and incidence of, maternal depression may prove to be just as valuable if not more cost-effective (Center on the Developing Child at Harvard University, 2009). However, due to a dearth of data on the estimated costs of maternal depression to the different public-sector service systems, our conclusions are based on the conceptual evidence linking maternal depression with various negative outcomes. That is, while it is established that maternal depression has multiple and far-reaching negative effects on the mother's work productivity, employment, income, and physical health, along with the child's physical, cognitive, and behavioral development and the parent-child relationship, the magnitude of the direct impact on the associated public-sector service systems remains unknown. Despite these limitations, the evidence suggests that identifying depressed mothers early and reaching them with effective, evidence-based treatments may offset some short- and long-term costs for various public-sector systems by reducing the likelihood that mothers and children will need service or supports.

About This Report

This brief was developed as a supplemental component of the *Helping Families Raise Healthy Children* initiative implemented in Allegheny County, Pennsylvania, which successfully implemented depression screening in early intervention, developed cross-system referral processes, engaged caregivers in services, and increased local capacity for providing relationship-based services by addressing many of the barriers identified in earlier stages of the collaborative's work (Schultz et al., 2012; 2013).

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