Depression is a prevalent condition that affects 15 million American adults each year (National Alliance on Mental Illness [NAMI], 2009). It is a disabling condition that has a negative impact on quality of life (Gaynes, Burns, Tweed, & Erickson, 2002) and day-to-day functioning (Schonfeld et al., 1997). Half of those who experience one episode of depression will continue to experience repeated episodes of depression throughout their lives (NAMI, 2009). Women are twice as likely as men to be affected by depression, and the highest incidence of depression occurs in women of childbearing age (Desai & Jann, 2000). Addressing the implications of maternal depression is particularly important, given the impact of depression on the immediate well-being of both mother and child.

Adverse effects of maternal depression on children have been studied extensively (Chung, McCollum, Elo, Lee, & Culhane, 2004; Dawson et al., 2003; Field, 1998; Martins & Gaffan, 2000; Pawlby, Hay, Sharpe, Waters, & O’Keane, 2009; Weissman et al., 2006). The damaging effects of maternal depression on children occur as early as the prenatal period (Diego et al., 2009; Field, 1998) and can have long-term consequences on children into adolescence and adulthood (Pawlby et al., 2009; Weissman et al., 2006). Maternal depression has a negative impact on growth, development, behavior, and mental health in children (O’Brien, Heycock, Hanna, Jones, & Cox, 2004; Weissman et al., 2004, 2006). In addition, maternal depression is associated with erratic health care utilization (Chung et al., 2004; Mandl, Tronick, Brennan, Alpert, & Homer, 1999; Minkovitz et al., 2005; Sills, Shetterly, Xu, Magid, & Kempe, 2007), and lower rates of instituted safety practices (Chung et al., 2007; DiMatteo, Lepper, & Croghan, 2000; Lefferman, 2002; McLennan & Kotchuck, 2000). The more depressive symptoms a mother has, the more likely her child is to be injured (Phelan, Khoury, Atherton, & Kahn, 2007).

The prevalence of maternal depression is higher in mothers caring for children with chronic conditions (Aydinok, Erermis, Bukusoglu, Yilmaz, & Solak, 2005; Jaser, Whittemore, Ambrosino, Lindemann, & Grey, 2008; Yuksel et al., 2007). Asthma is one of the most common chronic conditions experienced by children, and its prevalence has increased in recent decades. Due to the daily management and additional care a child with asthma requires, this condition increases the care burden on mothers. It has been noted that mothers of children with asthma have higher rates of depressive symptoms than mothers of children without asthma (Bartlett et al., 2001; Shalowitz et al., 2006). Studying the implications of maternal depression on children with asthma is important to optimize care, prevent exacerbations, and determine the need for altered management plans if maternal depression exists. To address these implications, this article will 1) review the literature regarding maternal depression and its impact on children with asthma; and 2) recommend asthma management interventions for children when maternal depression is suspected or confirmed.

Methodology

A literature search for human studies and literature reviews was performed using the following databases: Ovid Medline (1996 to present), PsycINFO (1967 to present), CINAHL, and Google Scholar (2009). The search
The Impact of Maternal Depression on Children with Asthma

include a combination of the following words: “mothers,” “maternal depression,” “depression,” “depressive disorder,” and “asthma.” Ancestry references were used from selected articles. Current medical and nursing textbooks were also reviewed.

The health promotion model developed by Pender (1996) is used as a theoretical framework for this article. The model focuses on two factors that result in behavioral outcomes in the individual: individual characteristics and experiences, and behavior-specific cognitions and effect. The goal of the model is to promote health through behavioral changes by focusing on the individual’s behavior-specific cognitions and affect. For the purposes of this article, the model will be used to illustrate that interventions made by the pediatric care provider on the mother’s behavior—specific cognitions and affect can promote changes to optimize the care of a child with asthma.

Literature Review

Depression is a prevalent condition that disproportionately affects women (Desai & Jann, 2000). It is ubiquitous and affects women from all races, ethnicities, and socioeconomic classes (Mazar, Keita, & Blehar, 2002). Results from the National Survey of Families and Households from 1987-1988 and 1992-1994 revealed that approximately one-fifth of women were found to have experienced high depressive symptoms at least twice over a five-year period (Pascoe, Stolfi, & Ormond, 2006). Similar rates of depression were found in a study conducted with mothers with young children; 17% of the mothers involved in the study had elevated depressive symptoms, and 46% of these mothers continued to have elevated depressive symptoms at a one-year follow-up visit (Horowitz, Briggs-Gowan, Storrfer-Isser, & Carter, 2007). Depressive symptoms have been shown to persist in mothers caring for young children (Horowitz, Briggs-Gowan, Storrfer-Isser, & Carter, 2009). Grupp-Phelan, Whitaker, and Naish (2003) screened mothers for depression in primary care and the emergency department; while similar rates of depression (20%) were found in both settings, 5% of the woman who screened positive for depression reported suicidal ideations (Grupp-Phelan et al., 2003).

Symptoms of major depressive disorder in adults include depressed mood or loss of interest in activities that were previously pleasurable, weight loss or gain, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue, feelings of worthlessness, decreased ability to concentrate, and thoughts of death (American Psychiatric Association [APA], 2000). These symptoms of major depressive disorder make infant and child care more difficult for the affected mother (Grupp-Phelan et al., 2003).

Risk factors for major depression include female gender, age, family history of mood disorders, history of depression or anxiety, temperament, lower socioeconomic status, and difficult or stressed interpersonal relationships (poor parental attachment and bonding, lack of social or emotional support, conflicts within the family, and stressors) (Desai & Jann, 2000; Horowitz et al., 2007, 2009; McLennan & Kotelchuck & Cho, 2001). Among those at increased risk for depression are mothers of young children living in the inner city due to sociodemographic risk, including living in poverty, activity limitations, and poor health (Heneghan, Silver, Bauman, Westbrook, & Stein, 1998). Further, risk factors for persistent depressive symptoms for mothers with young children include co-morbid anxiety, poor health, parenting distress, decreased emotional support, and low education attainment (Horowitz et al., 2009).

Depression is a condition for which treatments are effective and safe (NAMI, 2009). However, many mothers with depression do not receive a diagnosis or treatment for their condition (Flynn, Davis, Marcus, Cunningham, & Blow, 2004; Kemper & Babonis, 1992; Olson et al., 2002).

The Effects of Maternal Depression on Child Health

Maternal depression affects both the mother and her children. The effects of maternal depression occur as early as the prenatal period (Field, 1998). Newborns exposed to biochemical imbalances in their mother’s womb as a result of depression were shown to exhibit dysregulated behaviors, including erratic sleep patterns and decreased responsiveness to facial expressions (Field, 1998), and are less likely to form secure attachments (Martins & Gaffan, 2000). Alterations in physical growth have been associated with maternal depression, with some infants having poorer growth postpartum (Rahman, Iqbal, Bunn, Lovel, & Harrington, 2004), while other infants and toddlers were overweight (Surkan, Kawachi, & Peterson, 2008). Maternal depression has been associated with adverse effects on language development and cognitive development (Grace, Evindar, & Stewart, 2003), as well as an increase in reported behavioral problems (Dawson et al., 2003; Grace et al., 2003; Sinclair & Murray, 1998).

In addition, in a 20-year follow up of children of depressed parents, Weissman et al. (2006) found that having a depressed parent increased the risk three-fold in offspring for anxiety disorder, depression, and/or substance abuse as compared with children of parents who were not depressed.

Health care utilization for children whose mothers have depression has been shown to be erratic. In a comprehensive study on caregiver depression and health care utilization, medical records of children with and without a depressed parent in the home were reviewed (Sills et al., 2007). This study compared all types of health care utilization, including well child care, emergency department visits, specialty services, and sick visits (Sills et al., 2007). The study reviewed health care utilization in children from birth to 18 years of age and found an increase in emergency department visits, sick visits, and specialty services. Similar health care utilization patterns were seen in studies of young children with depressed mothers with increased hospitalization and emergency department visits, decreased preventative care (including immunizations), and more missed outpatient visits (Chung et al., 2004; Flynn et al., 2004; Logan, Riley, & Barker, 2008; Minkovitz et al., 2005).

Maternal depression has also been found to alter child safety practices. Mothers with depression were less likely to have a smoke alarm or use electrical plug covers in the home, use car seats, administer vitamins, and use the back-to-sleep position with their infants (Chung et al., 2004; Leiferman, 2002; McLennan & Kotelchuck, 2000). As depressive symptoms increased in mothers, the risk of injury to a child was shown to increase (Phelan et al., 2007). In addition, mothers with depression were more likely to use corporal punishment and to smoke (Chung et al., 2004; Leiferman, 2002).

Maternal Depression and Pediatric Asthma

Asthma is one of the most prevalent chronic conditions in children in the United States. Seven million chil-
Children in the United States have asthma (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Health Center for Statistics, 2009), and the prevalence of asthma in children is disproportionate among minorities, those with low socioeconomic status, and those living in urban areas (Dey, Schiller, & Tai, 2004; Quinn, Shalowitz, Berry, Mijanovich, & Wolf, 2006). African-American children living in poverty have been shown to have higher asthma morbidity and mortality (Akinbami, LaFleur, Schoendorf, 2002; McDaniel, Paxson, & Waldfogel, 2006; Shalowitz, Berry, Quinn, & Wolf, 2001). Authors have attributed asthma disparities to health care access (Freeman, Schneider, & McGarvey, 2003; Miller, 2000), quality of care (Homer et al., 1996), environment (Gold & Wright, 2000), genetics (Scirica & Celedon, 1996), socioeconomic factors (Castro, Schechtman, Halstead, & Bloomberg, 2001), and factors of the child (Figueroa-Muñoz, Chinn, & Rona, 2001; Steffensen et al., 2000).

Mothers of children with asthma have been shown to have more depressive symptoms than mothers of well children (Bartlett et al., 2001, 2004; Kub et al., 2009; Shalowitz et al., 2006), and maternal depression has been associated with increased asthma morbidity, increased maternal smoking, erratic health care utilization, and decreased asthma medication adherence (Bartlett et al., 2001; Brown et al., 2006; Leiferman, 2002; Shalowitz et al., 2001; Weil et al., 1999). Although it is beyond the scope of this article, it is important to note that in addition to caregivers with a child with asthma being at increased risk for depression, children and adolescents with asthma have also been found to have higher rates of depression (Goodwin, Fergusson, & Horwood, 2004; Padur et al., 1995) that may go undetected and cause depressive symptoms in a parent, an increase in health care utilization, and functional impairments (Katon, Richardson, Russo, Lozano, & McCaulley, 2006).

The purpose of the National Cooperative Inner-City Asthma Study (NCICAS) (Weil et al., 1999) was to identify factors associated with increased asthma morbidity among inner-city children. The study included a large sample of children (N = 1528) between 4 to 9 years of age with asthma or asthma symptoms (undiagnosed asthma). Psychosocial variables were measured at baseline, and asthma morbidity was assessed every three months over the course of 9 months. The authors determined asthma morbidity by health care utilization (acute visits and emergency department visits) and child functioning (wheeze and functional status). Psychosocial information collected by the authors included the caregiver’s mental health (Brief Symptom Inventory was used to measure psychological symptoms) and child’s mental health (Achenbach Child Behavior Checklist), alcohol use in the caregiver (CAGE assessment), parenting (Block Child Rearing Practices Report), social support (Social Support Questionnaire), and stressful life events (Psychiatric Epidemiology Research Interview Life Events Scale).

After controlling for baseline asthma morbidity, the mental health of both the child and caregiver had the strongest association with asthma morbidity; children of caregivers who scored positive for depression on the Brief Symptom Inventory were twice as likely to be hospitalized for asthma (Weil et al., 1999).

Life stressors and maternal depression were studied in relation to asthma morbidity in children (Shalowitz et al., 2001). Shalowitz et al. (2001) performed cross-sectional analyses of questionnaires and demographic variables collected from a diverse sample of families (N = 123) that attended subspecialty asthma clinics from urban and suburban environments with varying socioeconomic status. Maternal depressive symptoms were measured by self-report with the Center for Epidemiologic Studies Depression (CES-D) scale, and life stressors were measured using the Crisis in Family Systems (CRI SYS) instrument, which includes stressors within the family and work, exposure to violence, and substance abuse. Children in the sample were between 18 months and 12 years of age, and their asthma morbidity was graded as high, intermediate, or low by asthma status had more of an affect on maternal depressive symptoms than asthma status alone (Shalowitz et al., 2006).

Childhood asthma control and management were classified as chronic stressors in a study performed by Kub et al. (2009). In addition, the impact of environmental stressors, life events, and maternal sociodemographic factors on maternal depressive symptoms were investigated. The study consisted of a sample (N = 201) of low-income, inner-city mothers of children with persistent asthma (mild-persistent to severe-persistent). The participants were recruited through two emergency departments; inclusion criteria were having a child between 6 and 12 years of age with persistent asthma who required asthma medications, and over the past year, the child had to have had one or more emergency department visit or hospitalization. Data were collected through interviews and questionnaires. Maternal depressive symptoms were measured with the CES-D scale, and asthma morbidity and management requirements were measured with questionnaires. One-quarter (24.5%) of the mothers involved in the study had depressive symptoms, which was associated with more frequent use of quick relief asthma medications in their children, but no association between maternal depressive symptoms and overall asthma morbidity was found (Kub et al., 2009).

The majority of studies have inves-
tigated the uni-directional relationship of maternal depression on asthma morbidity; however, one recent study investigated the bidirectional impact of maternal depression and asthma morbidity (Otsuki et al., 2009). The sample consisted of African-American mothers and their children between 2 to 12 years of age with asthma (N = 252) recruited from an inner-city emergency department where the children were being seen for their asthma. Children in the study had either two emergency department visits or one hospitalization as a result of asthma in the previous 6 months. Asthma morbidity was determined by phone interviews conducted at baseline, and at 6 months for frequency of daytime and nighttime symptoms and emergency department visits. Maternal depressive symptoms were measured with the CES-D scale. The authors found that maternal depressive symptoms at baseline predicted asthma symptoms at 6 months, but did not find an association with asthma symptoms at baseline and maternal depressive symptoms at 6 months (Otsuki et al., 2009). There was no association found between emergency department visits and maternal depression (Otsuki et al., 2009).

Martinez, Perez, Ramirez, Canino, and Rand (2009) investigated the relationship between asthma beliefs (self-efficacy and empowerment), asthma morbidity, and the caregiver’s quality of life, including depressive symptoms (Bennett Johnson’s 24-hr recall interview modified for asthma). Data were collected over the course of four weeks by telephone interviews, face-to-face interactions, pulmonary function tests to assess asthma morbidity, and observations of parent/child interactions. The authors found maternal depression affected both physical and psychological functioning through both direct and indirect pathways; maternal depression had a direct impact on asthma through internalizing symptoms in the child and an indirect impact through negative parenting behaviors, which caused child internalizing symptoms (Lim et al., 2008). The authors suggested that negative parenting causes stress in the child that contributes to asthma symptoms. They did not find an association between maternal depression, medication adherence, and physical functioning in the child (Lim et al., 2008).

Bartlett et al. (2001) sought to study the health care utilization of children with asthma (emergency department visits) by mothers with depressive symptoms. The study sample was recruited from inner-city elementary school children with a diagnosis of asthma, asthma symptoms, and/or an emergency department visit or hospitalization due to asthma. Mothers (N = 140) of the children who were eligible for the study were interviewed via telephone at baseline and at 6 months to determine the number of visits made to the emergency department for asthma in the 6 months of the study, asthma morbidity, maternal demographics, maternal depression, and maternal quality of life. Maternal depressive symptoms were measured with the CES-D scale, and maternal quality of life was measured with the Pediatric Caregiver Quality of Life Questionnaire. Bartlett et al. (2001) found that 47% of the mothers involved in the study had symptoms of depression. Due to the overwhelming numbers of mothers with depressive symptoms, the authors split the group into mothers who exhibited high and low levels of depressive symptoms. Mothers with high levels of depressive symptoms at baseline had a 30% higher incidence of taking their child to the emergency department for their asthma over the course of the study; however, there were no differences for mothers with high or low levels of depressive symptoms and asthma medication use, total hospitalizations for asthma, routine visits for asthma, relationship with the primary care provider, and asthma morbidity. Further analysis by Bartlett et al. (2004) of the same cohort of mothers and children found that mothers with high levels of depressive symptoms had a harder time dealing with their child’s illness and reported that their child’s asthma had a significant impact on their daily lives, felt helpless with their child’s asthma symptoms, had less confidence in the medication regimen prescribed, and had more difficulty communicating with their child’s doctor. Mothers with high levels of depressive symptoms reported incorrect use of inhalers, less understanding of the purpose of the medications, inconsistent use of medications, more difficulty administering medications, and less confidence treating acute asthma symptoms, and were more likely to forget their child’s asthma medications (Bartlett et al., 2004).

Brown et al. (2006) studied psychiatric symptoms and disorders and health care utilization patterns among caregivers of children with asthma. The sample consisted of caregivers (N = 175), the majority female, minority, and from the inner city, who were contacted after their children had been hospitalized due to their asthma. Data were collected through an interview and included information on demographics, psy-
chiatric disorders, psychiatric symptoms, and health care utilization for asthma. The Mini International Neuropsychiatric Interview (MINI) was used for psychiatric disorders, the Brief Symptom Inventory (BSI) was used to measure psychiatric (somatic, depressive, and anxiety) symptoms, and health care utilization patterns were assessed through caregiver reports that noted the number of asthma-related hospitalizations, emergency department visits, and unscheduled visits to the clinic in the 12 months prior to the interview. Elevated BSI scores for depression subscales were associated with significantly more (43%) hospitalizations for asthma, and depressive episodes were associated with more (58%) unscheduled visits for asthma (Brown et al., 2006). There was no association found between depressive episodes and emergency department visits or hospitalizations for asthma (Brown et al., 2006).

Discussion

Depressive symptoms in mothers caring for children with asthma are common and can impair their ability to effectively care for their children with asthma. The studies presented were predominately of mothers and children from inner-city minority populations with higher demographic risk profiles for depression. Maternal depressive symptoms have been associated with increased asthma morbidity (Lim et al., 2008; Martinez et al., 2009; Shalowitz et al., 2001) and health care utilization (Bartlett et al., 2001; Brown et al., 2006; Weil et al., 1999) in some studies, while other studies have been unable to find an association between asthma morbidity and maternal depression (Bartlett et al., 2004; Kub et al., 2009; Shalowitz et al.) and health care utilization and maternal depression (Martinez et al., 2009). The existing research indicates that maternal depressive symptoms have the potential to increase asthma morbidity and health care utilization; mothers with depressive symptoms have a poor sense of self-efficacy in their ability to care for their child with asthma (Martinez et al., 2009), which can affect proper medication usage and medication adherence. Maternal depressive symptoms may be more predictive of asthma morbidity than asthma morbidity causing maternal depressive symptoms (Otsuki et al., 2009).

Screening for Maternal Depression

Pediatric primary care providers must recognize the prevalence of both maternal depression and children with asthma and the role maternal depression may have in pediatric asthma management. Eighty-one percent of pediatric residency programs still do not offer training for adult mental health issues despite reforms to pediatric residency programs (Head et al., 2008). Changes in education and preparing pediatric health care providers to deal with adult mental health is critical to ensure that children and their families receive comprehensive care.

The American Academy of Pediatrics (AAP) Task Force on the Family and the Bright Futures practice guidelines for pediatric care providers stress the importance of providing families with support and screening for depression (Hagan, Shaw, & Duncan, 2008; Schor & the AAP Task Force on the Family, 2003). Unfortunately, some pediatric primary care providers do not feel compelled to assess for maternal depression. In a study with 888 pediatricians, 43% of participants did not feel obligated to screen for maternal depression ( Olson et al., 2002). In addition, many pediatricians have admitted to relying on a mother’s appearance or a mother volunteering information regarding depressive symptoms to identify maternal depression ( Olson et al., 2002). A study conducted by Heneghan, Silver, Bauman, and Stein (2000) found that only 25% of mothers with depressive symptoms were identified by their pediatricians, and of these mothers, only 29% with high symptom levels of depression were identified. The use of screening tools during visits can increase the likelihood of identifying a mother with depressive symptoms.

The United States Preventative Services Task Force (USPSTF) has recommended screening adults for depression by asking two questions about mood and anhedonia (Pignone et al., 2002). The two-question screening tool is the Patient Health Questionnaire (PHQ)-2: “Over the past two weeks, have you felt down, depressed, or hopeless?” and “Over the past two weeks, have you felt little interest or pleasure in doing things?” (Pignone et al., 2002). USPSTF stresses the importance of the two-question screening tool being used as a screening instrument, and that proper assessment is needed to diagnose and treat depression (USPSTF, 2002). Two-question screening tools have been shown to be as effective as longer screening tools (Whitson, Adams, Miranda, & Browner, 1997). The PHQ-2 has a sensitivity of 74% to 96% and specificity of 57% to 92% for depression (Arrol, Khin, & Kerse, 2003; Dubowitz et al., 2007; Kroenke, Spitzer, & Williams, 2003), and also has a positive predictive value of 36% and a negative predictive value of 95% (Dubowitz et al., 2007). These questions are the first two questions of the 9-item Patient Health Questionnaire (PHQ-9), which includes all of the symptoms for depression in the Diagnostic and Statistical Manual of Mental Disorders, 4th edition. The PHQ-9 is used as a diagnostic tool for depression and is also used to assess a patient’s progress during treatment ( Kroenke & Spitzer, 2002).

Screening for depression among well child visits has been successful using the PHQ-2 (Dubowitz et al., 2007; Olson, Dietrich, Prazar, & Hurley, 2006). Interview and paper formats have been used for the PHQ-2 (Arrol et al., 2003). However, Olson et al. (2005) found that the paper-based screener yielded higher rates of positive results. Mothers are open to the idea of their pediatric care providers inquiring about their health and assisting with follow-up care (Kahn et al., 1999), although some mothers expressed concern about being judged negatively by the provider or being reported to child protective services (Brown & Winslow, 2008; Heneghan, Mercer, & DeLeone, 2004). Screening tools for depression are listed in Table 1.

Prior to the administration of the screening tool, education should be provided to the mother/caregiver about depression and the purpose of the screening. A positive screen in caregivers for depression indicate the need to 1) provide education about depression and the impact it has on both mother/caregiver and child, 2) obtain permission to establish contact with the mother’s/caregiver’s primary care or mental health provider and initiate references for maternal health care when necessary, and 3) collaborate with the mental health provider as needed. If permission is obtained from the mother/caregiver, the pediatric care provider can take the initiative and make an appointment with the mother’s/caregiver’s provider.

The discussion of the results for a positive screen should consist of education about depression and the negative impact of depression on the affect-
The U.S. Department of Health and Human Services, National Heart, Lung, and Blood Institute's National Asthma Education and Prevention Program (NAEPP) Expert Panel Report 3 on the Guidelines for the Diagnosis and Management of Asthma (2007) are the standards of care for asthma management and should be used by all pediatric care providers caring for children with asthma. Maternal caregivers with depression will require additional education on the guidelines, medications used for asthma, and the management plan because depression interferes with concentration and learning (APA, 2000).

Pediatric care providers must consider instituting an asthma management plan that takes into consideration maternal/caregiver depression (see Table 3). The asthma management plan should include 1) increased maternal/caregiver and family education on asthma, asthma medications, and asthma management; 2) increased follow up with the family to determine and encourage adherence to the asthma management regimen; and 3) counseling the family on appropriate and therapeutic use of the health care system to prevent and treat asthma exacerbations. Coordinated and consistent case management of the child with persistent asthma with a caregiver with depression is critical to ensure optimal functioning and quality of life in both the child and caregiver, decrease asthma morbidity, and prevent erratic utilization of health care.

Initially, follow up may need to be more frequent depending on how well the asthma is being controlled and the caregiver's mental health. Once both conditions are stable, increased follow up may be necessary. If the caregiver is experiencing more depressive symptoms/episodes, more frequent follow up may be necessary. Once the depression is stable, quarterly follow up should be maintained to ensure adequate control of asthma and depressive symptoms.


### Table 1.
Safety Tools for Depression

| Beck Depression Inventory (BDI) | • Information available at www.psychcorp.com |
| Centers for Epidemiologic Studies Depression Scale (CES-D) | • Public domain |
| | • Available at http://patienteducation.stanford.edu/research/cesd.pdf |
| General Health Questionnaire (GHQ) | • Information available at http://www.mapitrust.org/services/questionnairelicensing/cataloguequestionnaires/52-GHQ |
| Patient Health Questionnaire (PHQ) | • Public domain |
| Edinburgh Postnatal Depression Scale (EPDS) | • Public domain |
| | • Available at http://www.fresno.ucsf.edu/pediatrics/downloads/edinburghscale.pdf |

### Table 2.
Web Sites for Information About Depression for Caregivers and Families

| American Psychological Association | http://www.apa.org |
| National Institute of Mental Health | http://www.nimh.nih.org |
| National Mental Health Association | http://www.nmha.org |

### Table 3.
Asthma Management Plan for a Child with a Depressed Caregiver

2. Provide education and resources to the caregiver and families about asthma, asthma medication, and asthma management.
3. Follow up with patients and their caregivers via office visits and telephone calls to reinforce education and encourage adherence to the asthma management plan.
   - If the caregiver is experiencing more depressive symptoms/episodes, more frequent follow up may be necessary.
   - Once the depression is stable, quarterly follow up should be maintained to ensure adequate control of asthma and depressive symptoms.

Online resources on depression that can assist the pediatric provider in educating parents on depression. Timely follow up by the pediatric care provider by phone and office visits is necessary to ensure that the caregiver is receiving adequate care from their primary care provider or mental health provider, and to check on the status of the child's asthma.

The Impact of Maternal Depression on Children with Asthma

ed individual and child/children. Written information and additional resources about depression should be given to the caregiver. Discussion of the results during visits is feasible; Olson et al. (2006) found that the time required to discuss the results of the PHQ-2 was less than three minutes in the majority of patients with depressive symptoms. Table 2 identifies

16

PEDIATRIC NURSING/January-February 2012/Vol. 38/No. 1
of triggers for asthma, particularly smoking, is extremely important among mothers or caregivers with depression because individuals with depression have a higher likelihood of being cigarette smokers (Pratt & Brody, 2010).

Mothers with depressive symptoms admitted to having a difficult time understanding and administering medications, and also felt less confident with the medication’s efficacy (Bartlett et al., 2004). Taking the time with caregivers and families to discuss and provide education about asthma and asthma management, while building a strong relationship with families to instill confidence and gain trust, will aid in increasing adherence with the asthma medication regimen (Bender, 2002). Written instructions and materials can be given to caregivers and their families to reinforce the medications/instructions that are provided during visits, and asthma action plans should be given to all caregivers both at home and at daycare/school. Providing adequate education to families will help prevent asthma-related hospitalizations in children (Flores, Abreu, Tomany-Korman, & Meurer, 2005).

It is also imperative to confirm that the prescribed medications are being administered correctly and their therapeutic action understood (for example, rescue medication verses daily anti-inflammatory medication). Caregivers and family should be asked to bring the medications to visits and perform a demonstration of how medications are being administered at home. Praise for appropriate and effective medication administration and identification of asthma symptoms will enhance caregivers’ sense of self-efficacy and belief in their ability to care for their child.

Ensuring all children have access to health care is the first step in helping to treat their chronic conditions (Sziglaji, Shone, Klein, Bajorska, & Dick, 2007). It is also important for pediatric care providers to advocate for the needs of patients and their families. Advocating within the clinical setting may be necessary to gain additional time to spend with patients with asthma. Advocating at a higher level within the local and national government is required to make changes in the health care system so children and their families do not fall through the cracks, and instead, receive appropriate care.

Implications of maternal depression on a child with asthma are significant because of associated costs and the burden on the health care system (Chan, Zhan, & Homer, 2002; Weiss, Sullivan, & Lytle, 2000), as well as the impact both conditions have on the health and well-being of the caregiver and the child. Treating depression in the caregiver can result in significant savings in the health care system (Perry, 2008) and can improve the quality of life in the caregiver and the child (Brown et al., 2008).

**Conclusion**

The negative impact that maternal depression has on children has been well documented. Mothers of children with asthma may have a higher prevalence of depressive symptoms than mothers of children without asthma (Bartlett et al., 2001; Shalowitz et al., 2006). Unfortunately, less research has been undertaken on studying the impact of maternal depression on children with asthma. The available research has shown that maternal depression has the potential to increase a child’s asthma morbidity (Lim et al., 2008; Martinez et al., 2009; Shalowitz et al., 2001) and health care utilization (Bartlett et al., 2001; Brown et al., 2006; Weil et al., 1999), and it affects a mother’s self-efficacy to care for and manage her child’s asthma effectively (Martinez et al., 2009). Further, maternal depressive symptoms may be more predictive of asthma morbidity than asthma morbidity causing maternal depressive symptoms (Otsuki et al., 2009).

Pediatric care providers caring for children with asthma with a mother or caregiver with depression must alter their asthma management with increased follow up through phone calls and visits to provide and reinforce asthma education. Education on depression should also be provided, and periodic depression screening should be performed. This enhanced management plan for a child with asthma and treatment for the mother or caregiver with depression could improve the quality of life for the child and the mother or caregiver. In addition, this management plan has the potential to decrease the economic burden on the health care system by decreasing erratic health care utilization.

A failure to properly address the effects of maternal depression on children with asthma will lead to continued strain on the health care system and deleterious effects on the health and well-being of both the mother with depression and the child with asthma. To provide optimal care to families with a depressed caregiver and a child with asthma, more research must be performed. Future areas of research for maternal depression and children with asthma include studying the effect of altered management plans on both the child’s asthma and maternal depression and assessing the cost-effectiveness of these altered management plans in longitudinal studies.
The Impact of Maternal Depression on Children with Asthma


depression. Archives of Pediatrics & Adolescent Medicine, 153, 808-813.
Maternal Depression
continued from page 19


Additional Readings
