

Promoting Healthy Children & Families in Connecticut

Part #3: Linking Women's Health & Children's Health

By: Mary Alice Lee, Ph.D.
Children's Health Council
Hartford, Connecticut

Marilyn R. Sanders, M.D.
Child Health and Development
Institute of Connecticut, Inc.
Farmington, Connecticut

Prepared with
funding from the
Children's Fund of
Connecticut, Inc.



IMPACT

Ideas and Information
to Promote the Health of
Connecticut's Children

 The Child Health and
Development Institute
of Connecticut, Inc.

Introduction

Healthy women are most likely to have healthy babies and raise healthy children. The antecedents of good health in pregnancy are found in good health throughout adolescence and young adulthood. In fact, when women's health is viewed longitudinally, it is clear that the prenatal period is a very brief window of opportunity for promoting optimal birth outcomes associated with good health in infancy and childhood.

New information suggests that women's health before and after pregnancy affects healthy growth and development in early childhood. All too often, however, women's health care is narrowly equated with care for reproductive organs and reproductive function. Children's health care is by and large separate from care for their mothers. Separation of women's and children's health care runs against the tide of accumulating evidence that links the health of young children to the health of their mothers through both direct and indirect pathways.

This report explores the link between women's health and children's health by first describing features of essential care for women, then citing two examples of information demonstrating how women's health can affect the health of their children. The report concludes with an overview of

This four-part Impact series on early childhood health will describe:

- ❖ Significant health problems that affect young children;
- ❖ Effect of nutrition on early childhood health;
- ❖ Effect of women's health before, during, and after pregnancy on the health of infants and young children;
- ❖ Strategies for improving children's health and development by increasing access to health care and integrating health promotion into early childhood programs that serve young children and their families.

implications for practice and policy and with options for improving women's health care in Connecticut. Two predominant themes emerge, each with significant implications for the organization, financing, and delivery of reproductive and non-reproductive health services for women:

- ❖ Child health is inextricably linked to women's health.
- ❖ Women's health care is best delivered on a continuum that extends from early adolescence through adulthood.

Marilyn R. Sanders, M.D.

Series Editor
Child Health and Development Institute
of Connecticut, Inc.



Part #3:

Essential Care for Women Across the Life Span

Roots of Fragmentation in Women's Health Care

In the past, many American families obtained health care from general practitioners who provided care for the entire family from birth to grave. Young and old depended on the "GP" who delivered babies, tended to mothers and children in sickness and in health, and provided support when medical science no longer offered options for treatment of ailing or elderly family members. In recent years, however, most families cannot expect to obtain care in one place from one provider for all family members across the entire life span. While patients and families have undoubtedly benefited from scientific and clinical advancements that accompanied medical specialization, this trend in medical practice has also contributed to care that is increasingly fragmented according to age or gender or body part or disease. This divide has had profound effects on health care for women and their children.

Throughout the latter half of the twentieth century, the focus on improving maternal health and reducing infant mortality narrowed over time to the nine months of pregnancy. This viewpoint gave rise to a women's health care delivery system that is largely dependent on prenatal care for improving birth outcomes and early childhood health. Other factors have contributed to fragmentation in women's health care, including:

- ❖ Scientific and technological developments that contribute to an impression that maternity care must be provided by specialists (obstetricians or maternal-fetal medicine specialists);
- ❖ Development of publicly funded programs for which low income women qualify only when pregnant, newly delivered or breast feeding; and
- ❖ Separation of family planning services, especially publicly funded services for low-income women, from other aspects of primary care.¹

Table 1.
Comprehensive Care for Adolescents and Women: Health Objectives and Content of Care

Health Promotion and Risk Reduction

Healthy lifestyle:

- ◆ Provide information and support for healthy lifestyle, including good eating habits, nutritious diet and regular exercise; folate supplementation; avoidance of smoking and illicit drug use; moderation in alcohol consumption; stress reduction measures; injury prevention
- ◆ Provide information about harmful effects of smoking and exposure to second-hand smoke; support efforts to quit smoking with counseling and medication
- ◆ Provide information about risk of injury associated with alcohol consumption, including motor vehicle accidents, family and intimate partner violence, unwanted sex

Safety:

- ◆ Provide information and discuss prevention of household, recreational, motor vehicle, and occupational injuries

Access to age-appropriate and risk-appropriate care:

- ◆ Ensure access to a specific source of ongoing primary care and comprehensive services, including preventive services, risk-appropriate counseling, contraceptive methods, preconception counseling, cancer screening, diagnostic tests, and treatment of acute and chronic conditions
- ◆ Encourage daily brushing and flossing and regular visits to dentist
- ◆ Ensure that primary care visits include:
 - Screening and treatment for sexually transmitted diseases, including chlamydia and HIV
 - Screening and referral for treatment for problem drinking, drug abuse
 - Screening and referral for treatment of eating disorders or obesity
 - Screening and referral for treatment of mental health problems, including depression
 - Screening and referral for services to prevent injury from family or intimate partner violence
 - Screening for occupational exposures associated with clinical illness or congenital anomalies
- ◆ Ensure up-to-date immunizations, including tetanus booster, hepatitis B, rubella

Nutrition Evaluation and Counseling

Healthy adolescent growth and development:

- ◆ Provide information and discuss good nutrition, including healthy eating habits, adequate calcium intake, and regular physical activity
- ◆ Screen and refer for nutrition counseling and other measures to treat overweight and obesity
- ◆ Screen and refer for treatment of eating disorders
- ◆ Provide information about the importance of multivitamin supplements with folate taken prior to pregnancy

Healthy mother and baby:

- ◆ Provide information and discuss the importance of adequate weight gain, multivitamin supplements with folate
- ◆ Ensure referral for food supplementation programs like Food Stamps, WIC, for eligible women
- ◆ Provide information and discuss importance of breast feeding

Healthy parent and child:

- ◆ Encourage nutritionally balanced family diet suited to lifestyle, cultural influences, and economic realities
- ◆ Screen and refer for nutrition counseling and other measures to treat overweight and obesity (mother or child)
- ◆ Provide support for breast feeding
- ◆ Provide nutrition counseling and support for efforts to return to desired weight
- ◆ Screen for food insecurity, with referral to nutrition programs like Food Stamps, WIC, and subsidized school breakfast and lunch programs

Promotion of Healthy Sexuality and Fertility Control

Healthy sexual life:

- ◆ Provide information and opportunities for discussion of sexuality, intimate relationships, abstinence, conception, and effective contraception
- ◆ For sexually active adolescents and young women, provide information and discuss safe sex and prevention of sexually transmitted diseases

Intended pregnancies:

- ◆ For sexually active adolescents and young adults, provide information about and prescription for effective contraceptive methods
- ◆ Provide information about and prescription for emergency contraception at primary care visits for women at risk for unintended pregnancy
- ◆ As needed, provide or refer for safe abortion

Early care in pregnancy:

- ◆ Ensure access to early diagnosis of pregnancy
- ◆ Provide or refer for early prenatal care

SOURCES:

- Green M, Palfrey, JS. Bright futures: guidelines for health supervision of infants, children, and adolescents (2nd ed. rev.). Arlington, VA: National Center for Education in Maternal and Child Health, 2002.
- US Public Health Service. Clinician's handbook of preventive services (2nd ed.) (USGPO 1998-433-082). Washington, D.C.: US Government Printing Office, 1998.
- American Academy of Pediatrics, American College of Obstetricians and Gynecologists. Guidelines for perinatal care (5th ed.). Elk Grove Village, IL: AAP, 2002, 73-77.
- American College of Obstetricians and Gynecologists. Guidelines for women's health care. Washington, D.C.: ACOG, 1996, 100-103.
- Office of Health Promotion and Disease Prevention US Department of Health and Human Services. Healthy People 2010. Washington, DC: DHHS, 2000.

Separating services for women according to body parts or temporary conditions such as pregnancy does not ensure the health of women or their families.

Weisman, 1997

Sadly, targeted initiatives and incremental program changes that have been built on this fragmented system of care have not been predictably or uniformly effective for reducing low birthweight, preterm births, infant mortality or health disparities associated with race and ethnicity.

Comprehensive Primary Care for Women

To successfully reframe the vision of women's health and health care requires a dramatic departure from the current episodic nature of health care for women, care that is largely dependent on pregnancy planning and prenatal care. Comprehensive primary health care for women of reproductive age encompasses the following major components: health promotion and risk reduction, nutrition evaluation and counseling, and promotion of healthy sexuality and fertility control (Table 1). Health objectives for women of all ages include maintaining a healthy diet and regular exercise routine, maintaining good oral health, limiting alcohol consumption, eliminating exposure to cigarette smoke, avoiding illicit drug use, and developing healthy sexual relationships with control over the timing and spacing of pregnancies. At any given primary

care visit, the mix and intensity with which these aspects of care are delivered should be age- and risk-appropriate. These health objectives carry over across provider types, from primary care to prenatal care, and include essential care for ensuring healthy pregnancies and optimal birth outcomes.

Impact of Unintended Pregnancies on Essential Care for Women

Essential care for women who are capable of becoming pregnant necessarily depends upon recognizing the impact of unintended pregnancies on women's health, birth outcomes, and subsequent child health. Despite the widespread availability of effective contraceptive methods, a large proportion of over 6 million pregnancies annually are unintended, that is mistimed or unwanted. Even women who have recently given birth report that anywhere from one-third to one-half of their pregnancies were unintended, including up to 75 percent of pregnancies for women under 20.²

Unintended pregnancies are associated with maternal behaviors and health conditions that affect birth outcomes and the subsequent

Box 1 – Caring for Women Before They Become Pregnant: Folate supplementation

Folate is a necessary co-factor in many biochemical reactions throughout the body. Dietary supplementation with folate can reduce the risk for spina bifida and other neural tube defects that result from failure of the primitive central nervous system to fuse within the first month after conception.⁴ To be effective in reducing neural tube defects, folate supplementation must begin prior to conception and continue throughout the first trimester.⁵

health of children.³ Compared with women whose pregnancies were planned, women with unintended pregnancies are less likely to begin prenatal care in the first trimester and more likely to have had less-than-adequate care. They are more likely to smoke and drink during pregnancy, with increased risk for preterm birth, low birthweight, and fetal alcohol effects. Their babies are at greater risk for death in infancy. Compared with women whose pregnancies were intended, women with unintended pregnancies are also more likely to be depressed during and after pregnancy. Children who were born after unintended pregnancies are at greater risk for abuse and neglect as well as poor cognitive and social development.

Unintended pregnancies also eliminate the window of opportunity for reducing risk in the preconception and early prenatal periods. By the time many women realize they are pregnant, the critical period of early fetal development has passed and with it the chance for effective preconception intervention to prevent poor birth outcomes. (See boxes 1 and 2)

In the past decade, maternal-child health providers and advocates have promoted "preconception care," that is health care for women who are planning to conceive, as a key strategy for improving birth outcomes.^{7,8} These experts recommend that preconception care include comprehensive risk assessment, interventions aimed at reducing the risk of poor birth outcomes associated with certain medical and

psychosocial conditions, and patient education and counseling, with emphasis on the importance of early prenatal care. However, for many women, especially those at greatest risk for poor birth outcomes, the effectiveness of this approach to reducing risk prior to conception is limited by:

- ❖ High rates of unintended pregnancy, particularly among teens;
- ❖ Lack of health insurance, particularly among young adults;
- ❖ Lack of coverage for risk assessment and counseling, emergency contraception, and effective preconception interventions like smoking cessation services, particularly for women insured by Medicaid, and
- ❖ Psychosocial or lifestyle factors that make it difficult for women at risk to follow preconception advice aimed at improving their health and health behaviors.

Box 2 – Caring for Women Before They Become Pregnant: Management of diabetes

Women with insulin-dependent diabetes are at increased risk of giving birth to infants with serious birth defects, including heart disease, gastrointestinal abnormalities, and neural tube defects. For the diabetic woman, intensive glucose monitoring in the preconception period and during pregnancy decreases the risk of birth-related defects and complications.⁶ However, this monitoring must be initiated before or during the period of organ formation, that is three to nine weeks after conception.

Opportunities for Improving Child Health by Improving Women's Health

To improve women's health before, during, and after pregnancy, health care for young women, even those with no immediate plans for pregnancy, should include steps to reduce the risk for poor birth outcomes. The following sections describe two examples of opportunities to enhance women's health care and thereby improve children's health--treating maternal tooth and gum disease and recognizing and treating maternal depression. Both maternal health problems are more prevalent than previously acknowledged. Both conditions are amenable to treatment; however, treatment may not readily available to all women at risk. Most important, when left untreated, both these maternal conditions can have significant and lasting adverse effects on children, beginning in pregnancy and throughout infancy and early childhood.

Treating Maternal Tooth and Gum Disease

Tooth decay in young children (early childhood caries) is an infectious and contagious disease that is affected by diet and other factors.⁹ The development of this problem is linked to the presence of a bacteria, mutans streptococci, in the infant's or young child's mouth, generally due to transmission from the child's mother. These bacteria metabolize dietary carbohydrates and produce lactic acid that causes the breakdown of tooth enamel. Infant diet and feeding patterns also contribute to the development of cavities. In addition, when mothers and other caregivers smoke, their children suffer a two-fold increased risk for tooth decay.¹⁰

New research suggests that treating mothers with bacteria-reduction techniques holds promise as a strategy for reducing early childhood caries. Xylitol chewing gum used in pregnancy has been shown to reduce maternal colonization of mutans streptococci and maintain oral health.¹¹ However, this approach to reducing the risk of transmission is dependent upon the availability and accessibility of risk-appropriate dental care for women before, during, and after pregnancy--a challenge when available data suggest that fewer than half of all women and just one-third of all pregnant women receive dental care.^{12,13}

Professional guidelines for pediatric practice advise providers to inform parents about the importance of oral health and ways to prevent disease in infants and young children.¹⁴ The guidelines also recommend a dental checkup for the mother and treatment if necessary during the prenatal period.¹⁵

In addition to the well-established link between maternal oral bacteria and early childhood caries, results of several studies have shown that maternal periodontal disease, that is, bacterial infection of the gums and supporting bony structures, increases the risk for preterm or low birth weight birth.^{16,17,18} This risk appears to increase four- to eight-fold, depending on the maternal disease severity. Preliminary results of a randomized clinical trial have shown that the preterm birth rate was reduced by 50 percent among pregnant women with periodontitis who received periodontal treatment (deep cleaning and polishing), compared with the rate for women with periodontitis who received routine dental preventive care or preventive care and antibiotics (metronidazole).¹⁷ Further study is needed to establish a causal relationship between periodontal disease and preterm birth and to demonstrate the effectiveness of periodontal treatment for other groups of pregnant women.

Assessing risk for oral health problems is an important part of comprehensive primary care, aimed at ensuring that women do not suffer the consequences of untreated disease and do not risk transmission to their children. Primary care and prenatal care providers can incorporate risk assessment into visits for well-woman care and for prenatal and

postpartum care. In addition, pediatric care providers can use the very frequent well child visits for infants and toddlers to assess families for risk and recommend maternal dental care when needed.

Recognizing and Treating Maternal Depression

Maternal depression can have significant and lasting effects on child health and development, beginning soon after birth.¹⁹⁻²⁵ Studies show that depressed mothers are less likely to engage in preventive practices such as covering electrical outlets, administering vitamins, and restraining young children in car seats. They are also more likely to smoke, thereby exposing their children to secondhand smoke and the associated risks for ear infections, upper respiratory tract infections, and dental caries. On balance, mothers with depressive symptoms have more negative interactions with their infants and display a more limited range of affect. Their children are more likely to exhibit behaviors consistent with insecure attachments and are at higher risk for preschool behavior problems and trouble with peers. Children whose mothers are depressed are also at risk for impaired cognitive development and for their own mental health conditions, especially depression. Persistent maternal depression, accompanied by other psychiatric conditions, has significant adverse effects on child health and development.

Mental health problems are far more prevalent than most people realize. Nearly one in every two adults reports having experienced mental health problems at some point in time.²⁶ Women are generally more



likely to report depression or other affective and anxiety disorders, while men are more prone to substance use and anti-social personality disorders. One in four women reports having suffered a mood disorder in her lifetime.

Women who are mothers are particularly likely to experience depression. Studies suggest that 18 to 24 percent of mothers of young children have significant symptoms of depression.^{27,28}

During the year after birth of a child, women are particularly prone to development of depression. Up to 80 percent of women experience some symptoms of depression—increased crying, irritability and a sense of unreality—in the ten days after giving birth. For most women, these symptoms resolve with family support and without other intervention. However, for 10 to 20 percent of women, these feelings persist and evolve into an actual depressive episode. The peak prevalence of postpartum depression is 10 to 14 weeks after delivery. Half the episodes of postpartum depression are continuations of depression from pregnancy. Risk factors for postpartum depression include young maternal age, low educational attainment, single parenthood, low socioeconomic status, family history of a mood disorder, depression during

pregnancy, psychosocial stress, lack of support and marital problems.²⁹ Women who characterized their pregnancies as very difficult may be considerably more likely than other women to report being very depressed.³⁰ Monitoring for the development of postpartum depression is critically important for adolescent mothers because nearly one in two experiences depressive symptoms.³¹ Very few women develop postpartum psychosis.

Screening for mental health status is an important part of comprehensive primary care, aimed at ensuring that women and their children do not suffer from unrecognized and untreated depression. Primary care and obstetrical care providers can incorporate a discussion of emotional health and screening for depression into visits for well-woman care and for prenatal and postpartum care. In addition, pediatric care providers can use the frequent well child visits for infants and toddlers to screen new mothers for maternal depression and to make referrals to mental health professionals when needed.

Implications for Practice and Policy

Good health during adolescence and early adulthood is the foundation for good health during pregnancy. The fact that a high percentage of pregnancies are unplanned has significant implications for the content and delivery of essential care for women. In order to improve women's and children's health, the narrow view of women's health care, limited to reproductive organs and pregnancy-related care, should be replaced by a "life-course perspective," with attention to the determinants of health across the lifespan.^{32,33,34}

When each health visit is considered part of a health care continuum, primary care for women will likely encompass the essential components of care – health promotion and risk reduction, nutrition evaluation and counseling, and promotion of healthy sexuality and fertility control. The care can be provided by medical practitioners or advanced nursing practice or by multidisciplinary teams of specialty providers who are co-located and able to attend to both reproductive and non-reproductive health care needs. Most important, all primary care providers, including pediatricians, internists, family practitioners, obstetricians and nurse-midwives, can contribute to improved health for children by providing comprehensive care for reproductive

and non-reproductive health care needs, including screening for oral health and mental health concerns.

Recently, policy makers and women's health advocates have embraced a more expansive, far-reaching vision of women's health, shifting the focus from risk at the individual level to risk in populations, from reliance on clinical interventions to reliance on policies that affect socioeconomic, environmental, and cultural factors that contribute to health status. Several examples illustrate this type of policy approach:

- ❖ Since 1996, mandatory folate fortification of certain foods has effectively increased maternal serum folate levels and reduced the prevalence of spina bifida and other neural tube defects.⁴
- ❖ Rhode Island effectively reduced the infant and child health risks associated with a short interconceptional interval (<18 months) by extending Medicaid eligibility for new mothers from 60 days to 2 years postpartum.³⁵
- ❖ Thirty-six states (not including Connecticut) provide Medicaid coverage for at least one type of tobacco-dependence treatment (medication, counseling), including 10 states that cover special programs for pregnant women and 16 that cover treatment for children or for parents or both.^{36,37}

The challenge lies in transforming our current vision of prenatal care from a first step in child health care to an important component of women's health care over the course of a lifetime.

Wise & Brett, 2000

Fragmentation in women's health care and health care policy results in many missed opportunities for early intervention to address the individual health and social conditions associated with less-than-optimal birth outcomes and child health. By adopting a longitudinal view of women's health and health care, primary care providers will be philosophically and practically able to take advantage of each encounter to improve women's health and the health of their children. Maternal and child health advocates and policy makers who embrace this concept of a women's health continuum and the link to child health will be better able to devise population-based policy and environmental strategies to complement clinical interventions aimed at improving the health of mothers and children.

Options for Connecticut

In order to ensure access and to improve the content and delivery of essential care for women, the following practice and policy options are offered for consideration and adoption by maternal and child health providers, advocates, policy makers, foundations, and legislators in Connecticut.

Successful implementation of these recommendations rests upon fostering awareness among health care providers, policy makers, and women themselves of the critical linkages between women's health and the health of their children.

Ensure access to essential health care for low-income women:

- ❖ Expand Husky insurance eligibility to include uninsured parents of enrolled children, especially new mothers
- ❖ Provide comprehensive health insurance benefits that include preventive services; oral health care; mental health care risk assessment and counseling; smoking cessation services, and a full complement of contraceptive options, including emergency contraception

Ensure delivery of comprehensive health care for adolescents and young women:

- ❖ Encourage health care providers and professional organizations to use systematic strategies and protocols that address the essential components of well-woman care
- ❖ Provide age- and risk-appropriate health promotion and risk reduction, nutritional evaluation and counseling, and support for healthy sexuality and fertility control at all well-woman visits

References

- 1 Weisman CS. Changing definitions of women's health: implications for health care and policy. *Matern Child Health J* 1997; 1(3): 179-189.
- 2 Beck LF, Morrow B, Lipscomb LE, Johnson CH, Gaffield ME, Rogers M, Gilbert BC. Prevalence of selected maternal behaviors and experiences, Pregnancy Risk Assessment Monitoring System (PRAMS), 1999. *Morbidity and Mortality Weekly Report*, 2002; 51 (SS02): 1-26.
- 3 Brown SS, Eisenberg L, Eds. *The best intentions: unintended pregnancy and the well-being of children and families*. Washington, DC: National Academy Press, 1995.
- 4 Lumley J, Watson L, Watson M, Bower C. Periconceptional supplementation with folate and/or multivitamins for preventing neural tube defects (Cochrane Review). In: *The Cochrane Library*, Issue 1, 2003. Oxford: Update Software.
- 5 American Academy of Pediatrics Committee on Genetics. Folic acid for the prevention of neural tube defects. *Pediatrics*, 1999; 104(2): 325-327.
- 6 Korenbrot CC, Steinberg A, Bender C, Newberry S. Preconception care: a systematic review. *Matern Child Health J* 2002; 6(2): 75-88.
- 7 American Academy of Pediatrics, American College of Obstetricians and Gynecologists. *Guidelines for perinatal care* (5th ed.). Elk Grove Village, IL: AAP, 200, 73-77.
- 8 US Public Health Service Expert Panel. *Caring for our future: content of prenatal care*. Washington, D.C.: Government Printing Office, 1989.
- 9 Seow WK. Biological mechanisms of early childhood caries. *Community Dent Oral Epidemiol* 1998; 26(1 supplement): 8-27.
- 10 Aligné CA, Moss ME, Auinger P, Weitzman M. Association of pediatric dental caries with passive smoking. *JAMA* 2003; 289(10): 1258-1264.
- 11 Isokangas P, Soderling E, Pieniihakkinen K, Alanen P. Occurrence of dental decay in children after maternal consumption of xylitol chewing gum, a follow-up from 0 to 5 years of age. *J Dent Res* 2000; 79:1885-1889.
- 12 Manski RJ, Moeller JF, Maas WR. Dental services: an analysis of utilization of 20 years. *JADA* 2001; 132: 655-664.
- 13 Gaffield ML, Gilbert BJC, Malvitz DM, Romaguera R. Oral health during pregnancy: an analysis of information collected by the Pregnancy Risk Assessment Monitoring System. *JADA* 2001; 132:1009-1016.
- 14 Green M, Palfrey, JS. *Bright futures: guidelines for health supervision of infants, Children, and adolescents* (2nd ed. rev.). Arlington, VA: National Center for education in Maternal and Child Health, 2002.
- 15 American Academy of Pediatrics. Oral health risk assessment timing and establishment of the dental home. *Pediatrics* 2003; 111(5):1113-1116.
- 16 Jeffcoat MK, Geurs NC, Reddy MS, Cliver SP, Goldenberg RL, Hauth JC. Periodontal infection and preterm birth. *JADA* 2001; 132: 875-880.
- 17 Jeffcoat M, Hauth J, Geurs N, Reddy M, Cliver S, Goldenberg R. Periodontal disease and preterm birth: results of an intervention study. *Am J Obstet Gynecol* 2002;187: S79.
- 18 Offenbacher S, Katz V, Fertik G, Collins J, Boyd D, Maynor G, McKaig R, Beck J. Periodontal infection as a possible risk factor for preterm low birth weight. *J Periodontol* 1996; 67:1103-1113.
- 19 Field T. Maternal depression effects in infants and early interventions. *Preventive Medicine* 1998; 27: 200-203.
- 20 Leiferman J. The effect of maternal depressive symptomatology on maternal behaviors associated with child health. *Health Educ Behav* 2002; 29(5):596-607.
- 21 McLennan JD, Kotelchuck M, Cho H. Prevalence, persistence, and correlates of depressive symptoms in a national sample of mothers of toddlers. *J Am Acad Child Adolesc Psychiatry* 2001; 40(11):1316-1323.
- 22 Carter AS, Garrity-Rokous FE, Chazan-Cohen R, Little C, Briggs-Cowan MJ. Maternal depression and co-morbidity: predicting early parenting, attachment security, and toddler social-emotional problems and competences. *J Am Acad Child Adolesc Psychiatry* 2001; 40(1):18-26.
- 23 Petterson SM, Albers AB. Family, school, and community effects of poverty and maternal depression on early child development. *Child Development* 2001; 72(6):1794-1813.
- 24 National Research Council and Institute of Medicine. *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Committee on Integrating the Science of Early Childhood Development. Jack P. Shonkoff and Deborah A. Phillips, eds. Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press, 2000.
- 25 Kahn RS, Zuckerman B, Bauchner H, Homer CJ, Wise PH. Women's health after pregnancy and child outcomes at age 3 years: a prospective cohort study. *Am J Public Health* 2002; 92 (8): 1312-1318.
- 26 Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, Wittchen H, Kendler KS. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. *Arch Gen Psychiatry* 1994; 51:8-19.
- 27 Grupp-Phelan J, Whitaker RC, Naish AB. Depression in mothers of children presenting for emergency and primary care: Impact on mother's perceptions of caring for their children. *Ambulatory Pediatr* 2003; 3(3):142-146.
- 28 McLennan JD, Kotelchuck M. Parental prevention practices for young children in the context of maternal depression. *Pediatrics* 2000; 105(5):1090-1095.
- 29 Chaudron LH. Postpartum depression: what pediatricians need to know. *Pediatr Rev* 2003; 24(5):154-161.
- 30 Deal L, Holt V. Young maternal age and depressive symptoms: results from the 1988 National Maternal and Infant Health Survey. *Am J Public Health* 1998; 88:266-270.
- 31 Gross KH, Wells CS, Radigan-Garcia A, Dietz PM. Correlates of self-reports of being very depressed in the months after delivery: results from the Pregnancy Risk Assessment Monitoring System. *Matern Child Health J* 2002; 6(4): 247-253.
- 32 Kotelchuck M. Building on a life-course perspective in maternal and child health (editorial). *Matern Child Health J* 2003; 7(1): 5-11.
- 33 Guyer B. "The embarrassment of riches;" an historical theme for a children's health agenda in 21st century America. *Matern Child Health J* 2001; 5(3): 207-213.
- 34 Wise PH, Brett M. Linking prenatal care with women's health care. In MC McCormick, JE Siegel (Eds.). *Prenatal care: effectiveness and implementation*. New York, NY: Cambridge University Press, 2000, 301-304.
- 35 Griffin J. The impact of RiteCare on the adequacy of prenatal care and the health of newborns: 2000 update. Available at www.dhs.state.ri.us.
- 36 Centers for Disease Control and Prevention. *State Medicaid coverage for tobacco-dependence treatments—United States, 1994-2001*. *Morbidity and Mortality Weekly Report*, 2003; 52(21): 496-499.
- 37 Ibrahim JK, Schauffler HH, Barker DC, Orleans CT. Coverage of tobacco dependence treatments for pregnant women and for children and their parents. *American Journal of Public Health* 2002; 92 (12): 1940-1942.

For additional copies of IMPACT, call 860-679-1519 or visit the CHDI web site.



The Child Health and
Development Institute
of Connecticut, Inc.

270 Farmington Avenue
Suite 367
Farmington, CT 06032

860.679.1519 office
CHDI@adp.uhc.edu
www.chdi.org