Joint Center for Political and Economic Studies Health Policy Institute

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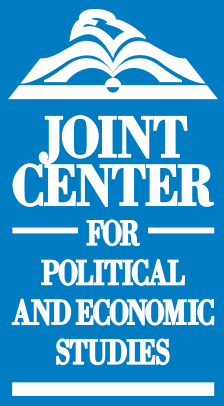

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The Courage to Love: Infant Mortality Commission Implications for Care, Research, and Public Policy to Reduce Infant Mortality Rates

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PREFACE

Solutions to the problem of higher infant death rates among black families have eluded medical, health policy, and research communities for decades. African American women continue to face a disproportionately higher risk for delivering premature and low birthweight babies, many of whom die within their first year of life.

Although infant mortality in the United States decreased among all races between 1980 and 2000, the overall black-white gap for infant mortality widened—and this pattern has continued. A 2002 Centers for Disease Control and Prevention analysis of infant mortality rates in 1995-1998 in the 60 largest U.S. cities revealed that the median infant mortality rate for blacks was 13.9 per 1,000 live births, compared to 6.4 and 5.9 for whites and Hispanics, respectively. Nationwide, the most recent data (2003) show that the infant mortality rate for blacks is 13.5 per 1,000 live births, compared to 5.7 for non-Hispanic whites and for Hispanics. The lack of progress in closing the black-white gap is largely due to a persistent two- to threefold higher risk for low birthweight and very low birthweight among black infants compared to white infants.

Healthy People 2010 is this nation's health promotion and disease prevention initiative. It includes a national objective to reduce deaths among infants (aged less than one year) to fewer than 4.5 per 1,000 live births within all racial/ethnic groups. If current infant mortality rates among African Americans persist, however, such national health objectives to reduce infant mortality and to eliminate related racial/ethnic disparities will not be met.

The root causes of persistent racial/ethnic disparities in infant mortality are not thoroughly understood. Many theories have been proposed. The high incidence of infant deaths among African Americans has been attributed to high teen pregnancy rates, single motherhood, lower education levels, poverty, and—most recently suggested—genetic causes. These theories fade in the light of robust research, however; alarmingly high levels of infant mortality persist, even when most factors are controlled. African Americans have higher infant mortality rates in every age category; maternal characteristics, such as marital or employment status, do not alter disparities; nor do education or income levels. The genetic theory is weakened by research that shows better birth outcomes among foreign-born black women; regardless of their socioeconomic status, native-born African American women fare worse in birth outcomes compared to white women at every income and education level. Most recently, the Institute of Medicine's 2006 Report on Preterm Birth concluded that racial/ethnic differences in socioeconomic condition, maternal behaviors, stress infection, and genetics cannot fully account for disparities. The report called for research that continues to prioritize efforts to understand factors contributing to the high rates of preterm birth among African American infants.

If age, marital status, education, income, and/or genetics cannot be seen as a singular root cause for racial/ethnic disparities in infant mortality, what variables or set of variables might be seen as common among African American women and others who experience poor birth outcomes? Are these variables or set of variables responsive to intervention? The search for answers to these perplexing questions led the Health Policy Institute of the Joint Center for Political and Economic Studies to establish a national commission to study infant mortality within a new context of "relationality"—the notion that relationships are constitutive of what it means to be human. The central role of relationships and their associated effects upon maternal and infant well-being have generated a new understanding of the infant mortality challenge. This new approach is grounded in social determinants of health theory; women and their babies must be viewed not only as individuals, but as members of families, communities, and larger systems that have either positive or negative impacts upon their psychological and physical states. The economies, opportunities, environmental influences, as well as risk and protective factors within their places of work, life, and play must be considered.

The Courage to Love: Infant Mortality Commission, co-chaired by Ronald David, MD, MDiv, and Barbara Nelson, PhD, was formed by the Joint Center Health Policy Institute, in collaboration with the University of California, Los Angeles (UCLA) School of Public Affairs, to review the history of infant mortality rate analysis and interpretation, examine basic assumptions, redefine the problem, and imagine new possibilities for action. The Commission's intentional focus on relationality has potential implications for improved pregnancy outcomes, economic prosperity, and meaningful civic participation for all women and for African American women in particular.

To better understand the issues and to inform its deliberation in formulating recommendations for policy, research, and practice, the Commission asked experts in various fields related to maternal and child health and infant mortality to prepare background papers on specific issues. This background paper examines the critical relationship between breastfeeding and infant mortality among African Americans, the racial/ethnic group with the lowest rate of breastfeeding. The authors explore the benefits of breastfeeding and the issues associated with racial/ethnic disparities in breastfeeding, concluding with an action plan for closing the gap through promotion of breastfeeding based on education, training, awareness, support, and research. This analysis complements and reinforces the recommendations of other Courage to Love: Infant Mortality Commission background and framing papers on infant mortality and maternal nutrition; infant mortality and resilience; the historical framework of policies and practices to reduce infant mortality; the authentic voices of those affected by infant mortality; and infant mortality in a global context.

The work of the Courage to Love: Infant Mortality Commission is part of the larger effort by the Joint Center Health Policy Institute (HPI), whose mission is to ignite a "Fair Health" movement that gives people of color the inalienable right to equal opportunity for healthy lives. Funded by the W. K. Kellogg Foundation, HPI seeks to help communities of color identify short- and long-term policy objectives and related activities that:

- Address the economic, social, environmental, and behavioral determinants of health;
- Allocate resources for the prevention and effective treatment of chronic illness;
- Reduce infant mortality and improve child and maternal health;
- Reduce risk factors and support healthy behaviors among children and youth;
- Improve mental health and reduce factors that promote violence;
- Optimize access to quality health care; and
- Create conditions for healthy aging and the improvement of the quality of life for seniors.

We are grateful to Dr. Barbara L. Philipp and Sheina Jean-Marie for preparing this paper and to those Joint Center staff members who have contributed to the preparation, editing, design, and publication of this paper and the Commission's other papers. Most of all, we are grateful to Drs. David and Nelson, the members of the Commission, and Dr. Gail C. Christopher, Joint Center vice president for health, women and families, for their dedication and commitment to improving birth outcomes for African Americans and reducing racial and ethnic disparities in infant mortality rates.

Ralph B. Everett
President and CEO
Joint Center for Political and Economic Studies

INTRODUCTION

Breastfeeding is the most precious gift
a mother can give her infant.
When there is illness or malnutrition,
it may be a lifesaving gift;
when there is poverty, it may be the only gift.

- Ruth Lawrence, MD

The United States of America suffers from the breastfeeding blues. During the 20th century, slowly—decade by decade—this great country became a formula-feeding nation. The events that followed Hurricane Katrina's devastating path through the Gulf Coast in September 2005 exposed the enormous public health implications of being a formula-feeding nation. As flood waters rose, families sat on bridges and stood outside convention centers in hundred-degree heat pleading for clean water, food, and help. Instead of receiving clean, healthy food from their mothers' breasts, babies sucked on dirty bottles of unknown liquids. We watched in horror as our tiniest citizens, so many of them black, grew sicker and drier right before our eyes. Then, in an effort to help, citizens responded by sending money and truckloads and cargo planes full of supplies, including boxes and boxes of infant formula. Kim Durdin-James, national president of the African-American Breastfeeding Alliance (AABA), summed it up well in saying, "In the best of times, breastfeeding is the optimal feeding choice for young children because it provides babies with all vital nutrients for growth and development, but in times of disaster, breastfeeding can mean the difference between life and death."

Breastfeeding is so much more than just a "nice thing to do." Breastfeeding is linked with nutrition, infant and maternal health, public health, maternal self-esteem, maternal/infant bonding, corporate influence in health care, and, especially pertinent to this paper, infant mortality. Black babies are at the highest risk of dying before they reach their first birthday and black women breastfeed at the lowest rates of any racial group in our nation. Why? Are these two related? The objective of this paper is to answer the following questions:

- What are the primary benefits of breastfeeding for infants, children, mothers, and society? What health outcomes are related to a mother's feeding choice?
- Does breastfeeding affect infant mortality?
- What are the cost implications of a nation's feeding choice?
- What are national breastfeeding goals and current rates?
- What events happened in the last century that influenced feeding choices?
- What factors are associated with successful initiation and continuation of breastfeeding?
- What are the predictors of *not* breastfeeding?
- Why do black women breastfeed at the lowest rates of any racial group?
- What role does the WIC program play in the status of breastfeeding in the United States?
- What interventions/strategies are associated with the best outcomes regarding initiation and continuation of breastfeeding?

BACKGROUND AND REVIEW OF RELATED LITERATURE

Health Outcomes

Human milk is uniquely suited for human infants. The breastfed infant is "the reference or normative model against which all alternative feeding methods must be measured with regard to growth, health, development, and all other short- and long-term outcomes."[1] Evidence-based research shows that human milk is the healthiest form of nutrition for all babies (with rare exceptions), including sick and premature infants.[2] According to the 2005 policy statement of the American Academy of Pediatrics, breastfeeding offers protection against ear infections, diarrhea, lower respiratory infections, bacterial meningitis, urinary tract infections, diabetes, lymphoma, chronic digestive diseases, and obesity.[3] Following are examples of research findings for a few of these conditions.

Term Infants

Ear infections: In a study of over 1,000 infants, exclusively formula-fed babies had twice as many ear infections in the first year of life as infants who breastfed exclusively for four months or more. The recurrent otitis media rate in infants who breastfed for six months or more was 10 percent compared to a rate of 20.5 percent among infants who breastfed for less than four months.[4]

Diarrhea: Many studies report a significant reduction in diarrhea among breastfed babies. One study found that infants who began breastfeeding early had a 26 percent lower rate of diarrhea than those who began later, which the authors hypothesized was due to the healthful effects of human colostrum.[5] Colostrum, a mother's first milk, contains abundant amounts of Secretory IgA, a substance that coats the newborn's gut, acting as a barrier to keep bacteria, viruses, and foreign antigens from entering the newborn's system. In a population-based case-control study of infant mortality in Brazil, infants who were not breastfed had 14.2 times higher risk of death from diarrheal infections than exclusively breastfed babies.[6]

Lower respiratory tract infections: A study (conducted in Brazil) published in *Lancet* found that those babies not receiving breast milk had 3.6 times the risk of death from respiratory infections as their breastfed peers.[7]

Childhood cancer: Studies have found that babies who are breastfed are less likely to develop cancer at a later age, especially lymphoma,[8] Hodgkins disease,[9] and leukemia. A study published in 1999 in the *Journal of the National Cancer Institute* found that ever having breastfed was associated with a 21 percent reduction in risk of childhood acute leukemias.[10]

The Mother

Important health benefits of breastfeeding and lactation are also described for mothers. In the short term, breastfeeding increases oxytocin levels, which leads to more rapid uterine involution and less postpartum bleeding. Oxytocin, the love or bonding hormone, also contributes to maternal child bonding. There is also decreased menstrual blood loss and increased child spacing attributable to lactational amenorrhea, as well as faster return to prepregnancy weight.[11]

In the long term, women who breastfeed lower their risk of developing uterine cancer,[12] osteoporosis, type 2 diabetes, and breast cancer. Stuebe and colleagues recently published a study reporting that among mothers who have been pregnant before, each additional year of lactation decreases the risk of developing type 2 diabetes by 15 percent.[13] The link between breast cancer and breastfeeding was shown in a study of the Tanka boat people of Hong Kong. The women of this fishing community traditionally only breastfeed from the right breast—perhaps allowing them to paddle their canoes while breastfeeding their babies. Researchers found a statistically significant increase in breast cancer in the left, unused breast.[14] Since that report, numerous other studies have reported similar findings—that every time a woman breastfeeds, she reduces her risk of developing breast cancer. One study of 800 rural Chinese women found that those who breastfed for two or more years had 54 percent less risk of developing breast cancer than those who breastfed for one to six months.[15] A recent publication examined 47 studies from 30 countries involving 150,000 women. The relative risk of breast cancer decreased by 4.3 percent for every 12 months of breastfeeding. The authors concluded, "It is estimated that the cumulative incidence of breast cancer in developing countries would be decreased by more than half, from 6.3 to 2.7 per 100 women by age 70, if women had the average number of births and lifetime duration of breastfeeding that had been prevalent in developing countries until recently. Breastfeeding could account for almost two-thirds of the estimated reduction in breast cancer."[16]

Premature Infants

Breast milk not only improves health outcomes but also saves the lives of sick and premature infants in the Neonatal Intensive Care Unit (NICU). The most remarkable benefit of breast milk for premature infants is its association with protection against necrotizing enterocolitis (NEC), a condition associated with infarction of the gut and systemic infection that is only seen in premature babies. A large study published in *Lancet* in 1990 found that, compared to exclusively formula-fed infants, exclusively breastfed infants born before 30 weeks gestational age received six- to ten-fold protection against NEC, while breastfed infants born after 30 weeks gestational age had twenty-fold protection against NEC.[17] Breast milk also protects premature infants against respiratory tract infections,[18] and sepsis/meningitis.[19] In addition, due to the presence of long-chain polyunsaturated fatty acids, breast milk enhances visual acuity and is associated with higher developmental scores at 18 months and 8 years[20] and faster brainstem maturation than formula.[21]

Infant Mortality

Breastfeeding affects infant mortality rates in both the United States and worldwide. A recent article in *Pediatrics* reported that postneonatal infant mortality rates in the United States are reduced by 21 percent in breastfed infants. Promoting breastfeeding has the potential to save or delay about 720 post-neonatal deaths each year.[22] Worldwide, the beneficial effects of breastfeeding are even more significant. UNICEF data on child survival indicate that optimal breastfeeding could save more infant lives than almost any other single measure. Every year, more than 10 million children die from mainly preventable causes, including diarrhea, pneumonia, measles, malaria, and HIV/AIDS. If every baby were exclusively breastfed from birth to six months and continued breastfeeding to any amount for a few months thereafter, an estimated 1.5 million lives would be saved each year.[23]

Healthcare Costs

Several studies and authors have concluded that formula feeding is an expensive choice.[24] In one study, frequency of health service utilization for three illnesses (otitis media, gastrointestinal illness, and lower respiratory tract infections) in the first year of life was assessed in relation to duration of exclusive breastfeeding. In the first year of life, infants who had never been breastfed had 2,033 excess office visits, 212 excess days of hospitalization, 51 extra chest radiographs, and 609 excess prescriptions for these three illnesses per 1,000 never-breastfed infants compared with 1,000 infants exclusively breastfed for at least three months. These additional healthcare services cost the managed care health system involved between $331 and $475 per never-breastfed infant during the first year of life.[25] Another study estimated that there would be a minimum savings of $3.6 billion per year in the U.S. for the treatment of otitis media, gastroenteritis, and necrotizing enterocolitis if breastfeeding were increased from levels at the time of the analysis (64 percent initiation, 29 percent at six months) to the levels set as goals by the U.S. government's Healthy People 2010 program (75 percent initiation and 50 percent at six months).[26]

The Challenge: Breastfeeding Goals and Current Rates

Breastfeeding goals for the United States are well defined. The policy statement on breastfeeding by the American Academy of Pediatrics (AAP) recommends exclusive breastfeeding as the optimal form of nutrition for all infants (with rare exceptions) for approximately the first six months of life, and continued breastfeeding to a year or beyond, with the addition of complementary foods at about six months. Exclusive breastfeeding is defined by the AAP as "an infant's consumption of human milk with no supplementation of any type (no water, no juice, no nonhuman milk, and no foods) except for vitamins, minerals, and medications. Exclusive breastfeeding has been shown to provide improved protection against many diseases and to increase the likelihood of continued breastfeeding for at least the first six months of life."[27] Other organizations that recommend exclusive breastfeeding for the first six months of life include: the American College of Obstetricians and Gynecologists (ACOG),[28] the American Academy of Family Physicians (AAFP),[29] the Academy of Breastfeeding Medicine (ABM), the World Health Organization (WHO), and the United Nations Children's Fund (UNICEF). WHO and AAFP recommend that women continue to breastfeed their children for two years or beyond.

The U.S. government's Healthy People 2010 breastfeeding goals include 75 percent of mothers initiating breastfeeding, 50 percent breastfeeding at six months of age, and 25 percent continuing to breastfeed at one year of age.[30] Unfortunately, national statistics reveal large gaps between these goals and reality. According to 2004 data (defining breastfeeding as any amount of breast milk), 70 percent of mothers initiated breastfeeding, 36 percent were breastfeeding at six months of age, and 18 percent continued to breastfeed at one year of age. Only 14 percent of women were exclusively breastfeeding at six months of age.[31]

Table 1. 2004 U.S. Breastfeeding Rates (percent)

	Initiation	6 months	12 months	6 months exclusive
All Women	**70%**	**36%**	**18%**	**14%**
White	74	39	19	15
Hispanic	79	40	21	16
Black	54	23	10	10

Source: Centers for Disease Control and Prevention, "Breastfeeding: Data and Statistics: Breastfeeding Practices - Results from the 2004 National Immunization Survey," www.cdc.gov/breastfeeding/data/nis_data/data_2004.htm.

In October 2000, in response to low national breastfeeding rates, the U.S. Surgeon General identified breastfeeding as a "national health priority" and released the government's first official breastfeeding statement, *HHS Blueprint for*

Action on Breastfeeding.[32] Commenting on the disparities in breastfeeding rates found among various racial groups, the document states, "Racial and ethnic disparities in breastfeeding are wide and reveal alarmingly low breastfeeding rates among African American women" and "there remains a significant challenge to reach African American women with culturally appropriate approaches to promote breastfeeding."[33] The report outlines an action plan for the promotion of breastfeeding based on education, training, awareness, support, and research.

What happened?

The United States became a formula-feeding nation in the 20th century. In the early part of that century, an alternative to breastfeeding, infant formula, became readily available for the mother who was reluctant to nurse. U.S. breastfeeding rates peaked in the first decade (1900-1910), when about 70 percent of all mothers initiated breastfeeding. The march to formula feeding began around 1920 and was led by wealthier, highly educated women. Poorer women and women of color followed. Due to a variety of factors (including the availability and aggressive marketing of infant formula, changing hospital maternity practices, the increased participation of women in the workforce, and lack of training and knowledge about lactation issues among healthcare staff), breastfeeding rates then steadily declined in the succeeding seven decades, with the biggest decrease noted after WWII. The breastfeeding rate in the U.S. reached its nadir in 1972, when only 22 percent of mothers initiated breastfeeding. In the late 1970s, the march began back to the breast, led again by wealthy, highly educated women. Unfortunately, their poorer sisters have yet to return. Following a slight dip in the mid- to late 1980s, there has been an upward trend in breastfeeding rates over the last two decades, although rates of breastfeeding among African American women lag far behind those of white and Hispanic women. Breastfeeding advocate and expert Dr. Ruth Lawrence has observed, "Until we understand what motivates a woman to breastfeed, further progress will not occur, and no change will come about in the groups with only 10 percent breastfeeding, even though it is these children of less educated, lower socioeconomic mothers who would gain most in outcome if breastfed."[34]

Obstacles to and Predictors of Breastfeeding

In the United States, obstacles to successful initiation of breastfeeding in the first days postpartum and to successful continuation of breastfeeding in the first years of life for all women are numerous[35] and include:

- Insufficient prenatal education about breastfeeding;
- Healthcare staff with insufficient training in lactation medicine;
- Disruptive hospital policies and practices;
- Commercial promotion of infant formula through distribution of hospital discharge packs, coupons for free or discounted formula, and TV and magazine advertising;
- Early use of supplements, artificial nipples, and pacifiers;
- Early hospital discharge;
- Lack of timely routine follow-up and postpartum home health visits;
- Maternal employment, including short maternity leave;
- Lack of workplace support, including appropriate facilities and adequate time for breastfeeding/breast milk expression;
- Lack of peer and family support (e.g., father of the baby, grandmother);
- Lack of societal support;
- Lack of role models;
- Lack of health insurance support;
- Media portrayal of formula (bottle) feeding as the norm;
- Misinformation/lack of access to current, accurate information; and
- Lack of guidance and encouragement from healthcare professionals.

Studies looking at barriers to breastfeeding specifically among low-income and minority women also found: fear or pain;

embarrassment with public exposure; unease with the act of breastfeeding; reports of ridicule by friends; lack of support from some healthcare providers; and difficulties associated with employment.[36]

Various factors have been found to be predictors of the decision to breastfeed: income (rich women are more likely to breastfeed than poor women); education (the college educated more than the less educated); age (older more than younger); ethnicity (foreign-born more than U.S.-born); employment (unemployed more than employed); religion (Catholic more than Protestant); maternal attitudes (positive self-image more than less positive, health conscious more than less health conscious); type of birth (vaginal more than Cesarean); health of infant immediately after birth (healthy more than less healthy); birth order (first born more than later born); region of country (West coast more than any other area) [see the Appendix for a listing of 2004 breastfeeding initiation rates by state and a listing of 2004 rates of breastfeeding at 6 months by state]; and race.

After controlling for socioeconomic background and birth characteristics, race alone remains a strong predictor of breastfeeding. In one study, black women were found to be two-and-a-half times less likely to breastfeed than were white women. The reason for this disturbing finding is not clear, although in this study the primary reason indicated by black women for not breastfeeding was that they "preferred to bottle feed." The authors go on to state, "Breastfeeding explains the racial difference in infant mortality as well as does low birth weight. Thus by increasing breastfeeding among black women the racial gap in infant mortality should narrow—a gap that is currently (1997) about 1.3 times higher for blacks than whites."[37] By 2003, the gap had widened to 2.4 times higher for blacks than for whites.[38]

FACTORS THAT INFLUENCE BREASTFEEDING

Why do African American women breastfeed at lower rates than any other ethnic group? The answer is complicated because the choice of nourishment for an infant is a complex and multifactorial decision and the ability to maintain breastfeeding is beset by numerous obstacles. Margaret Bentley and colleagues collected data from low-income, African American women attending four WIC clinics in the Baltimore area. They then applied the Social Ecological Framework to breastfeeding, demonstrating how macro-level factors (such as media, political, economic, and legislative policy) and micro-level factors (such as beliefs, social networks, and the community) interact in ways that affect a woman's choice to breastfeed.[39] They argue that factors within each level can encourage or discourage a woman with regard to breastfeeding. In this section, we will use their model to attempt to answer the question of why breastfeeding rates for black women are so low.

The Media

The media shape the world we live in—seeping into our lives and living rooms through the television shows and commercials we watch, the newspapers and magazines we read, and the radio shows we listen to. The media have the ability to influence perceptions and beliefs and, in this case, contribute to the perception that formula feeding is the norm and breastfeeding is not. In addition, breastfeeding is often portrayed in the media as dangerous, difficult, and painful. One example that received national attention is the story of Tabitha Walrond, a young African American mother. Ms. Walrond was charged with second-degree manslaughter after the "starvation death" of her two-month-old son. She chose to breastfeed her baby but revealed that she received no information about how her breast reduction surgery might affect her milk supply. In addition, Ms. Walrond was turned away from a heathcare center because her son did not have a Medicaid card.[40]

A controversial episode of the CBC television series *Chicago Hope*, partly based on the Walrond case, aired on October 21, 1998. Entitled "The Breast and the Brightest," the plot involved an exclusively breastfed, six-week-old infant who died from heart failure secondary to dehydration. The chief physician stated that the baby died of starvation. The mother's lawyers implicated the hospital's "Baby-Friendly" contract, claiming this forced the mother to sign a statement saying she would do everything she could to breastfeed her baby. One of the emergency room physicians suggested that the mother might not have been producing enough milk, while another ER physician demanded that the mother be charged with criminal negligence.

The show drew outrage and criticism from breastfeeding advocates.[41] One advocate commented, "They [*Chicago Hope*] managed to do an episode on breastfeeding without showing a single mother nursing a baby. They repeatedly told us about moms who don't have enough milk, thus reinforcing the myth that this is a widespread condition, when in reality it is often breastfeeding mismanagement… Meanwhile

the neighbor baby was shown being lovingly bottle-fed."[42] More controversy followed when it was revealed that this particular episode, as well as the rest of the fifth season of *Chicago Hope*, was produced as a collaboration between CBC Broadcasting, the Johns Hopkins School of Medicine, and the Pharmaceutical Research & Manufacturers of America (PhRMA), an organization including major infant formula companies. When challenged about the ethics of dramatizing such a rare and frightening medical condition, PhRMA replied that it was "backing the show out of a sense of responsibility … viewers can expect to be educated on issues such as … the risks associated with breastfeeding."[43]

The Government

The power and influence of the government can both encourage and discourage women with regard to breastfeeding. Women were encouraged to breastfeed when President Clinton signed the Right to Breastfeed Act (H.R.1848) into U.S. law in September 1999. This federal legislation ensures a woman's right to breastfeed her infant anywhere on federal property where she and her child are authorized to be. States vary in the legislation that has been passed to protect, promote, and support breastfeeding.

The government's response to the Baby-Friendly Hospital Initiative (BFHI) serves as an example of how government action can hinder or stall breastfeeding success. In 1991, in response to worldwide declining breastfeeding rates, UNICEF and WHO launched the BFHI. "Baby-Friendly" is a designation that a hospital or birthing site can receive if it demonstrates compliance with the standards and guidelines summarized as the "Ten Steps to Successful Breastfeeding."

The history of the BFHI in the United States includes controversy and changes. In other nations, cooperation between UNICEF and governmental agencies has led to a clear organizational structure and criteria for accreditation. UNICEF approached top U.S. governmental officials about the possibility of implementing the BFHI in this country. However, it was determined that implementation would be governed by a nongovernmental agency, based in part on heavy lobbying from the formula company industry. The Healthy Mother, Healthy Baby Coalition was awarded the contract, and in 1993 it established an Expert Work Group to study the feasibility of the BFHI in the United States. Their recommendations, released late in 1994, were to revise the steps, change the name, have hospitals assess themselves, and not prohibit the availability or promotion of free infant formulas in hospitals and birth centers. These recommendations were controversial, and five members of the Expert Work Group, in a 12-page minority opinion, criticized the report. Seven organizations, including the American Academy of Pediatrics, did not endorse the group's final report. Questions were raised as to whether infant formula manufacturers may have influenced the group's recommendations. Eventually, Dr. Audrey Naylor and Wellstart International, involved in the original development of the international BFHI concept, were asked to develop the U.S. on-site evaluation tool and external assessment criteria. The final decision was to use the original international BFHI Ten Step guidelines except for changes made in Step 4 to recommend initiation of breastfeeding within one hour of life, instead of the international guideline of "within one-half hour of life." In 1997, a group led by Dr. Karin Cadwell assumed the responsibility for Baby-Friendly USA.

To date, approximately 19,250 sites worldwide have received the Baby-Friendly award. Dramatic advances have occurred: China has 6,312 Baby-Friendly hospitals; Nigeria has 1,147; and Mexico has 692. In some countries, including Sweden and Oman, every hospital is Baby-Friendly.[44] Yet as of 2006, out of 4,000 possible sites in the United States, only 55 have received the award.[45]

The Formula Industry

The infant formula industry is big business. Worldwide, $6-8 billion worth of formula sales are generated annually, with half of that, or about $3 billion, being sold in the U.S. Most U.S. hospitals accept free formula from the manufacturers, a practice considered unethical by many.[46] Research shows that formula, formula company literature, and formula discharge packs given out before birth or upon discharge adversely affect breastfeeding success.[47]

Community and Environment (Hospitals, Workplace)

Successful breastfeeding depends on a successful start; maternity hospital systems and practices play a crucial role in the mother/baby dyad's breastfeeding journey. One prospective, observational study found that health-system support of breastfeeding during the postpartum hospitalization and the early period after discharge was associated with greater breastfeeding success.[48]

All pregnant women need access not only to health care but to *quality* health care. Optimal lactation practices in the hospital setting are described very succinctly in BFHI's "Ten Steps to Successful Breastfeeding," which lays out the standards used to qualify hospitals as "Baby Friendly." The Ten Steps, which are reproduced in the following section on promising models and practices, include skin-to-births, breastfeeding within the first hour, and rooming in. Research has shown that if infants are placed on the mother's abdomen after birth, they will make crawling movements after about 20 minutes of life, and by 50 minutes, most babies will have successfully found and latched onto the breast unassisted and begun to suckle. Moreover, infants that sought out the breast and "self attached" developed better sucking techniques and increased breastfeeding duration compared to infants in the control group who were removed from the mother after 20 minutes for routine hospital procedures.

Some hospital systems routinely separate newborns and their mothers immediately after birth—the baby goes to the newborn nursery and the mother stays in the labor and delivery area. Usually, newborns and mothers are wide awake for several hours after birth and then both fall into a deep sleep for 10-12 hours. If breastfeeding is missed in the critical first hour, the next opportunity for breastfeeding may not occur until the baby is 12 hours old. A newborn nursery with babies lined up row after row in bassinets is an old-fashioned system established to allow hospital staff to control their environment. Such a system interferes with breastfeeding success and with maternal bonding.

Employment is another predictor of breastfeeding outcome. Mothers working part-time are more likely to initiate and continue breastfeeding or exclusive breastfeeding relative to those working full-time.[49] In one study, only 10 percent of full-time working mothers were still breastfeeding at six months postpartum, compared with 24 percent of those not employed.[50] In another study, women reported "could not breastfeed because had to return to work" as one of the top three reasons that they did not breastfeed.[51] Piper and Parks reported that "mothers were more likely to breastfeed for longer than 6 months if they delayed return to work."[52] Another study found that returning to work or school was one of the strongest predictors of breastfeeding discontinuation at 12 weeks postpartum.[53] Once a mother returns to work, she needs a breastfeeding-friendly work environment, the availability of a breast pump, and education on using a breast pump if breastfeeding is to continue.

Consumer and Other Organizations

The African-American Breastfeeding Alliance, Inc. (AABA) is the only nonprofit organization whose sole purpose is to educate African American women and their families about breastfeeding. AABA aims to: raise the number of African American women (and women of African descent) who breastfeed; educate African American women about the infant and maternal benefits of breastfeeding; offer ongoing support to women who decide to breastfeed; and collaborate with other organizations that have an interest in the health and well-being of African American women and infants. Two other organizations that emphatically support breastfeeding are La Leche League International and the Academy of Breast feeding Medicine.

Interpersonal (Family, Friends, Healthcare Staff)

The feeding decision is most often made before pregnancy or during the first trimester.[54] Important contributors to the feeding choice include family members and healthcare staff. As noted above, Bentley interviewed 441 African American women entering prenatal care at clinics associated with one of four Baltimore WIC clinics chosen for a breastfeeding promotion project. The study found that the two people who had the most influence on the mother's feeding decision were: (1) the baby's father and (2) the baby's grandmother. In addition, the opinion of the woman's doctor was found to be an independent predictor of infant feeding intention.[55]

Another study found that the most common reasons for choosing formula feeding included: (1) the mother's perception of the father's preference; (2) the mother's uncertainty regarding the amount of milk the infant could receive; and (3) concerns about returning to work. Factors that would have encouraged formula-feeding mothers to breastfeed included: (1) more information from the prenatal class; (2) more information from television, magazines, and books; and (3) support from the infant's maternal grandmother.[56]

An analysis of national survey data collected from parents up to three years after the birth of their children found that support from care providers was associated with breastfeeding initiation.[57] Healthcare clinicians' support and encouragement to breastfeed is also associated with a higher likelihood that mothers will continue breastfeeding. Mothers who reported having received encouragement to breastfeed from a doctor, nurse, or breastfeeding consultant during the first

12 weeks postpartum were less likely than other mothers to discontinue breastfeeding at 12 weeks.[58] However, several studies have found that pediatricians, obstetricians, and family practitioners lack knowledge and training on breastfeeding topics.[59]

Individual (Knowledge, Belief, Skills)

Breastfeeding problems at two to three days of life and a lack of confidence in the ability to breastfeed are both associated with early discontinuation of breastfeeding.[60]

PROMISING MODELS AND PRACTICES

The WIC Program

WIC, the Special Supplemental Nutrition Program for Women, Infants and Children, was established in 1972 as a two-year pilot program with the goal of helping low-income mothers and young children receive proper nutritional care. WIC works. Its prenatal nutrition program has shown reductions in preterm deliveries and low-birthweight babies in the neediest portion of the WIC population.[61] Due to the requirement of periodic lead and anemia screening, the prevalence of anemia has also declined in the WIC population.

The program was permanently authorized in 1974, and it has grown from serving 88,000 women and children with a budget of $10.4 million to currently (as of 2006) aiding more than eight million participants with a budget of $5.1 billion (about $3.6 billion for food grants and $1.4 billion for Nutrition Services and Administration).[62] WIC is administered by the Food Nutrition Services (FNS) within the U.S. Department of Agriculture. It operates in 50 states (through health departments), 34 Indian Tribal Organizations, the District of Columbia, and the U.S. territories, and its services are currently provided from 9,000 clinic sites, including county health departments, hospitals, mobile clinics, community centers, schools and public housing sites, migrant health centers/camps, and Indian Health Service facilities.

To be eligible for enrollment in WIC, individuals must have incomes that fall within 185 percent of the U.S. Poverty Income Guidelines, meet their state's residency requirement, and be found to be at "nutrition risk" by a health professional.[63] WIC defines "nutritional risk" as medical-based risks (i.e., anemia, underweight, overweight, history of pregnancy complication or poor pregnancy outcomes) and dietary risks (such as failing to meet dietary guidelines or inappropriate nutritional practices). Women begin receiving WIC benefits in the prenatal period and can continue receiving benefits for either six months if formula feeding or up to one year if breastfeeding. All infants receive WIC services up until their first birthday, and children until their fifth birthday, if they are compliant with scheduled "well child" check-ups and WIC's blood work schedule, which is designed for the early identification of iron-deficiency anemia and lead poisoning. Infants are initially screened for anemia between nine months and 13 months and then between 15 months and 18 months. If values are normal, screening is continued every 12 months; if values are low, screening is continued every six months. For the identification of lead poisoning, lead screens are obtained at 9-12 months, 24 months, and 36 months of age.

WIC program benefits include: (1) vouchers to purchase specific nutritious foods, (2) nutrition education, and (3) referrals to healthcare and social service providers. WIC vouchers can be exchanged for foods specified in one of seven basic food packages designated for different categories of participants. Free iron-fortified formula is provided for formula-feeding infants.

WIC is often accused of promoting formula feeding over breastfeeding because the program provides clients with free formula. Actually, the rise in breastfeeding rates in the 1990s was due, in part, to various WIC efforts to promote and support breastfeeding. Between 1996 and 2001, the breastfeeding initiation rate for WIC mothers and babies increased by 25 percent and the six-month breastfeeding rate increased by 61.2 percent. Marsha Walker's informative 2002 article on breastfeeding and the WIC program details the reasons for these gains in WIC breastfeeding rates:

(1) In 1989, the Child Nutrition and WIC Reauthorization Act mandated that a minimum of $8 million in NSA funds must be expended nationally for the promotion and support of breastfeeding. This law allowed WIC to divert $8 million of the total appropriation to breastfeeding activities. The Act also required each state agency to designate a breastfeeding promotion coordinator and to establish standards for breastfeeding promotion and support, which included, at a minimum: (a) a policy that creates a positive clinic environment that endorses breastfeeding as the preferred method of infant feeding; (b) a requirement that each local agency designate a staff person to coordinate

breastfeeding promotion and support activities; (c) a requirement that each local agency incorporate breastfeeding promotion and support training into orientation programs for new staff involved in direct contact with WIC clients; and (d) a plan to ensure that women have access to breastfeeding promotion and support activities during the prenatal and postpartum periods. Congress also authorized the expenditure of NSA funds for breastfeeding aids (breast pumps, breast shells, nursing supplementers, nursing bras, and pads) that directly support the initiation and continuation of breastfeeding.

(2) The Healthy Meals for Healthy Americans Act of 1994 made several program changes in support of breastfeeding. The Act changed the $8 million target level to a national minimum breastfeeding promotion and support expenditure of $21 for each pregnant and breastfeeding woman. For fiscal year 1995, the targeted spending was approximately $21 million from NSA funds.

(3) The William F. Goodling Child Nutrition Reauthorization Act of 1998 authorized WIC state agencies to use WIC food grant funds to purchase or rent breast pumps. Previously, only NSA funds could be used for this purpose.

(4) Postpartum women who are not breastfeeding are eligible for WIC benefits for only six months compared with breastfeeding women who retain WIC eligibility for one year postpartum.

(5) Several WIC food packages are designed specifically for breastfeeding women. Food Package V, the basic package for pregnant and breastfeeding women, includes different types of milk (fluid whole, low-fat, or skim; evaporated; dry; Lactaid; etc.) up to a maximum of 28 quarts per month and domestic cheese that can be substituted for some of the milk. The package also includes eggs, cereal, juice, and dried beans/peas or peanut butter. Food Package VII, the enhanced package for breastfeeding women, includes the same foods as in Package V but with additional amounts of cheese, juice, and dried beans/peas. This package also includes canned tuna and carrots and is provided to exclusively breastfeeding women who do not receive any infant formula from WIC.

(6) WIC provides breastfeeding education to all women who enter the program.

(7) WIC is involved in professional seminars that train healthcare providers on the principles of lactation management.

(8) WIC has a national breastfeeding and promotion campaign, "Loving Support Makes Breastfeeding Work."[64]

The WIC services provided at Boston Medical Center illustrate WIC's efforts to support breastfeeding. WIC mothers who breastfeed receive the enhanced food packages and they retain eligibility for one year instead of six months. A breastfeeding mother can receive a manual pump or borrow an electric pump for up to one year or longer. She also receives lactation educational materials such as books, videos, and CDs and specific breastfeeding aids like pads and breast shields. Peer counselors serve as a 24-hour support system.[65]

Doula Support

"Doula" is derived from the Greek word for "slave." A doula is a woman, often a trained lay person, student midwife, or midwife, experienced in child birth who provides continuous physical and emotional support to the laboring mother. This support consists of praise, encouragement, reassurance, comfort measures, physical contact, and explanations about progress during the labor. The support is tailored to the needs and wishes of each woman. Examples of doula support include walking with the mother in the hallway, massaging her back, rubbing her feet, and holding her. The doula gives no medical care.

The word *doula* may be new to many, but the concept is as old as childbirth itself and spans many cultures. Traditionally, in over 150 human cultures, mothers in labor had another woman—usually a friend or family member—present during birth. When the location of birth shifted from the home to the hospital in the early 1900s, many childbirth practices that had evolved over the centuries were lost or altered. Birth position and obstetric medication changed, hospital policies and concerns about infection kept family and friends away from mother and baby, and mothers became isolated.

While the support of fathers-to-be in the birthing room is important, fathers do not have the powerful effect of the doula.[66] Eleven separate randomized controlled trials

(conducted in Belgium, Canada, Finland, France, Greece, Guatemala, South Africa, and the United States) have examined whether the additional support of a doula affects obstetrical and neonatal outcomes.[67] The women studied were healthy women having their first babies at term who had a normal pregnancy. In a meta-analysis of ten of these studies, a doula's presence was shown to reduce length of labor, reduce cesarean births, reduce the use of pain medications, reduce use of forceps, lead to better mother-infant interaction, lead to greater maternal satisfaction, and improve breastfeeding rates.[68]

Peer Counselor Programs

Peer counselor programs have been studied in a variety of settings, primarily to investigate their impact on increasing breastfeeding duration and exclusivity rates among women from communities with low breastfeeding rates.[69] In the U.S., many peer counselor programs operate in WIC settings. For example, when data from the 1989-1993 Pediatric Nutrition Surveillance System were analyzed to compare breastfeeding rates in Mississippi WIC clinics with and without peer counseling programs, significantly increased breastfeeding rates were found in clinics that had introduced peer programs.[70] A two-year study in Iowa used peer counselors in a WIC setting both before and after birth. Eighty-two percent of intervention group women, compared with 31 percent of control group women, initiated breastfeeding. Mean duration of breastfeeding was 5.7 weeks for intervention group mothers and 2.5 weeks for control group mothers. At four weeks, 56 percent of intervention and 10 percent of control group women were still breastfeeding.[71]

Two randomized controlled trials have been published on peer counselor programs, one conducted in Mexico and the other in Bangladesh. The Mexico study of home-based peer counselors among periurban mothers and infants in Mexico City found that at three months postpartum, exclusive breastfeeding was practiced by 67 percent of women who received six peer counselor visits, 50 percent of women who received three visits, and 12 percent of control mothers (intervention groups vs. controls, p=0.001; six visits vs. three visits, p=0.02).[72] In the Bangladesh study, women living in 40 adjacent zones in Dhaka were randomized to intervention (15 home-based prenatal and postnatal peer visits) or control groups.[73] Exclusive breastfeeding at five months, the primary outcome, was practiced by 70 percent of the intervention group compared to six percent of the control group (p>0.0001).

Rush Mother's Milk Club

The Mother's Milk Club at Rush Children's Hospital in Chicago, Illinois, is widely recognized as the national model for providing breastfeeding services in the Neonatal Intensive Care Unit (NICU) setting. Paula Meier, the club's founder, started the program in 1996 with the goal of helping mothers with very low-birthweight infants (under 1.5 kg.) supply breast milk for their newborns.

The four main criteria of the Rush Mother's Milk Club are:

1. Expressing milk for the infant's feedings;

2. Skin-to-skin (kangaroo) care and suckling at the empty breast as tactile stimulation and "practice" for the infant;

3. Feeding at the breast as soon as the infant can suck and swallow; and

4. Helping prepare for breastfeeding once the baby is discharged from the hospital.

After the mother gives birth, nurses and physicians provide clear, consistent, evidence-based information about the importance of a mother's own milk for her infant. Mothers have immediate access to electric breast pump rental with complete assistance on how to get started. Mothers receive numerous written Club materials, milk storage containers, insulated bags to transport milk to the NICU when the mother goes home and her baby stays, and information on the weekly club luncheon meetings. The weekly luncheon not only educates mothers on the various topics of human milk production, but also provides breastfeeding peer counselors who have gone through the program with their premature infants. The peers teach the mothers how to separate out from their breast milk a layer that is high in valuable fat and calories by spinning it in a specially designed machine. Free door-to-door taxi service is also provided and family members are encouraged to attend. Mothers returning to work are provided with letters signed by their physician stating that the doctor has prescribed breast milk for the infant and requesting that the employers supply the mothers "with 15 minute breaks and a clean space where they can plug in breast pumps and remove their milk."

The Rush Mother's Milk Club is an evidence-based program with remarkable results. One study found that 72.9 percent

(151 out of 207) of the eligible mothers initiated lactation, and at 15, 30, and 60 days of life, breastfeeding rates were 81.7 percent, 80.1 percent, and 66.1 percent, respectively.[74]

The Baby-Friendly Hospital Initiative

As noted above, UNICEF and WHO launched the Baby-Friendly Hospital Initiative (BFHI) in 1991 with the aim of increasing rates of breastfeeding worldwide. "Baby-Friendly" is a designation a maternity site can receive by demonstrating to external assessors compliance with the Ten Steps to Successful Breastfeeding (see text box).[75] The Ten Steps are a series of best practice standards describing a pattern of care where commonly found practices harmful to breastfeeding are replaced with evidence-based practices proven to increase breastfeeding initiation and duration outcome. A Baby-Friendly hospital in the U.S. operates differently from a standard hospital. For starters, the hospital has a breastfeeding policy that sets out an evidence-based framework to support and guide staff. Staff are trained in ways to implement the breastfeeding policy. Staff education is the central component of the Baby-Friendly program, guaranteeing that health professionals who have contact with breastfeeding women will possess the knowledge and training to support them to breastfeed successfully. Great care is taken to provide all pregnant women with clear information on the health benefits of breastfeeding and practices that are beneficial to success so they can make an informed decision about their chosen feeding method.

The routine in a Baby-Friendly hospital is for mothers to be given their babies to hold in skin-to-skin contact immediately after birth (or as soon as mother and baby are able). This takes advantage of the alert period in a baby's first hours of life and facilitates a successful first breastfeed. Babies who are put to the breast soon after birth establish breastfeeding faster and breastfeed for a longer duration. Fundamental to successful breastfeeding is ensuring that mothers know how to hold and attach their babies to the breast, since this is crucial for a good milk supply and pain-free feeding. Babies are fed by their feeding cues—on demand—not according to a hospital-derived, hourly feeding schedule. Babies room-in with their mother 24/7 so the mother can respond to her infant's feeding cues. In a Baby-Friendly hospital, the "normal nursery" becomes a ghost town, serving as a storage space, not a baby space.

Mothers are encouraged not to give their babies food or drink other than breast milk during the first six months, and

The Ten Steps to Successful Breastfeeding

1. Have a written breastfeeding policy that is routinely communicated to all healthcare staff.
2. Train all healthcare staff in the skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within one hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation if they are separated from their infants.
6. Give newborn infants no food or drink other than breast milk unless medically indicated.
7. Practice rooming-in and allow mothers and infants to stay together twenty-four hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies and soothies) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Note: To pass each step, hospitals must demonstrate compliance at >80 percent. Included in Step 6 is the requirement that a Baby-Friendly hospital or birth center pay fair market price for all formula and infant feeding supplies.

the hospital works to ensure that formula supplements are only given when there is true clinical need. Pacifiers are not distributed to healthy breastfeeding mother/baby dyads. There is no promotion for, or sampling of, infant formula or other breast milk substitutes in a Baby-Friendly hospital, which must pay the fair market price for all formula and infant feeding supplies. Good breastfeeding practice is capped off by Step 10, which requires that mothers be given information about the support they can access in their communities, such as continuing help with breastfeeding from the health services or mother-to-mother support from voluntary groups.[76]

Research conducted nationally and internationally indicates that the Ten Steps work; when Baby-Friendly policies are in place, breastfeeding initiation and duration rates increase and infant morbidity decreases. The effectiveness of the BFHI in the United States has been studied at Boston Medical Center (BMC), formerly Boston City Hospital, an academic teaching hospital serving primarily minority, poor, and immigrant families living in inner-city Boston, Massachusetts. In December 1999, this hospital became the 22nd Baby-Friendly hospital in the nation and the first in Massachusetts, following almost three years of hospital-wide efforts to create breastfeeding supportive policies. With the Ten Steps in place, breastfeeding initiation rates there rose from 58 percent (1995) to 87 percent (1999), exclusive breastfeeding rates increased from 6 percent to 34 percent, and initiation rates among U.S.-born black women rose from 34 percent to 74 percent.[77] A commentary accompanying a 2001 article in *Pediatrics* reporting these findings stated, "The staff of BMC therefore deserves our congratulations for their determination to improve care provided for breastfeeding mothers and infants. In doing so, the hospital has reduced inequalities in health, broken free of its dependency on the infant formula industry, and shown that Baby-Friendly accreditation is achievable in an inner-city hospital serving an urban, deprived population. Readers whose hospitals are not yet so accredited could use the current study to advocate for an action plan to follow suit. The challenge now is to maintain these breastfeeding increases beyond the sphere of influence of the maternity service so that more infants are breastfed for 6 months and beyond."[78] Breastfeeding initiation rates at Boston Medical Center remain high: 82 percent (2000), 87 percent (2001), 87 percent (2002), 86 percent (2003), and 88 percent (2004).[79] Breastfeeding rates in the Boston Medical Center NICU also increased significantly from 34.6 percent in 1995 to 74.4 percent in 1999.[80] In August 2002, BMC's success in raising breastfeeding rates among minority and low-income families was recognized with a Best Practice Initiative by the U.S. Department of Health and Human Services (DHHS).

The BFHI has been shown to work internationally as well. Kramer and colleagues studied the effect of the BFHI on infant feeding method and infant morbidity.[81] Thirty-one hospitals located in the Republic of Belarus were paired and then randomly assigned to either an intervention group (implementation of the Ten Steps to Successful Breastfeeding) or a control group (standard of care). Infants born at intervention sites were significantly more likely to be breastfed to any degree at 12 months. The intervention group was seven times more likely to be exclusively breastfeeding at three months and 12 times more likely to be exclusively breastfeeding at six months. Rates of gastrointestinal disease and atopic eczema both decreased significantly in the intervention group compared to the control group.

A study published by Braun and colleagues followed two cohorts of babies born in a Brazilian hospital.[82] The first cohort was born in 1994 (before BFHI implementation); the second cohort was born in 1999 (with BFHI implementation in place). Mothers were interviewed in the maternity ward and in their homes at one, two, four, and six months postpartum. Babies exposed to the BFHI were breastfed significantly longer than those born before the BFHI. A Scottish study found that babies born in a Baby-Friendly hospital were 28 percent more likely to be exclusively breastfed at seven days of life compared to those born in non-accredited settings. Over the study period, breastfeeding rates also increased significantly faster in hospitals with Baby-Friendly status.[83]

National Breastfeeding Awareness Campaign

In 2004, in direct response to the *HHS Blueprint for Action on Breastfeeding*, the Office of Women's Health in the U.S. Department of Health and Human Services launched the National Breastfeeding Awareness Campaign. This was only the nation's second breastfeeding public health campaign; the first was conducted in 1911. The campaign's goals were threefold: (1) to increase breastfeeding initiation rates to 75 percent; (2) to raise rates among African American women and new mothers who are the least likely to breastfeed; and (3) to encourage exclusive breastfeeding for six months.

The Office of Women's Health teamed with the Ad Council to produce public service announcements for television, radio, newspaper, magazine, billboard, and web banner advertising.

The Ad Council, a private, nonprofit organization, has created pro bono ads since 1942 and is famed for its "in your face" style campaigns, which include the "Crash Test Dummies," "Friends Don't Let Friends Drive Drunk," and "A Mind is a Terrible Thing to Waste." Eighteen U.S. cities were selected to partner with the Office of Women's Health as regional resource centers called Community Demonstration Projects.

Originally, the National Breastfeeding Awareness Campaign was scheduled to launch during World Breastfeeding Week in August 2003. Logistical delays pushed the start date to November 2003; further delays were encountered and a national controversy arose when the infant formula manufacturers and a surprising ally, the American Academy of Pediatrics, raised concerns about the content and the "risk-based" approach of the campaign. An investigative report about the controversy aired on the ABC news program *20/20* in June 2004. The campaign officially launched in the same month with the slogan, "Babies Were Born to Be Breastfed."

Despite having its message watered down, the National Breastfeeding Awareness Campaign, which ended April 2006, was a success. According to a survey of 1,000 Americans conducted by the Office of Women's Health before and after the launch, acceptance of breastfeeding increased by approximately 10 percent between 2004 and 2005.[84] The results were as follows:

1. In 2005, 67 percent of American women felt that breastfeeding was the best way to feed a baby, up from 60 percent in 2004.

2. Sixty-two percent of American men felt that breastfeeding was the best way to feed a baby, up from 50 percent in 2004.

3. Fifty-nine percent of women felt that babies should be breastfed exclusively for the first six months of life, up from 55 percent of women in 2004.

4. Sixty-five percent of American men felt that a baby should be exclusively breastfed for the first six months of life, up from 53 percent in 2004.

5. Sixty-nine percent of men stated that they would be comfortable seeing a woman breastfeed in public, up from 59 percent in 2004.

6. Sixty-three percent of men are now comfortable with their wife breastfeeding in public, up from the 53 percent acceptance rate in 2004.

RECOMMENDATIONS/ IMPLICATIONS FOR POLICY CHANGE

A great deal of work needs to be done to increase breastfeeding rates and close the racial and ethnic breastfeeding gaps. Changes need to occur in a variety of settings, including the family, the community, the healthcare sector, the workplace, and society.

1. The culture needs to change.

The federal government must become more actively engaged in supporting national breastfeeding organizations, including the United States Breastfeeding Committee (USBC), Baby-Friendly USA, and the Academy of Breastfeeding Medicine (ABM). These organizations are in dire need of financial support. Support should be given to the African-American Breastfeeding Alliance due to its unique mission to support and educate African American women who wish to breastfeed. Support to the U.S. Department of Health and Human Services Office of Women's Health should be expanded to fund a follow-up program to the successful National Breastfeeding Awareness Campaign. The media should be encouraged to portray breastfeeding as the norm—the desirable and attainable feeding choice for all women. For example, an African American female celebrity could be recruited to serve as a spokesperson for breastfeeding. Imagine the impact of a positive, educational show about breastfeeding on the Oprah Winfrey show.

2. Hospital practices and systems need to change.

Every licensed maternity site should be required to become Baby-Friendly and thus follow the Ten Steps to Successful Breastfeeding. Hospitals should not be allowed to accept free formula and formula products. The hospital practice of giving out to new mothers discharge packs that have been provided for free by infant formula companies should be banned nationwide. Doula programs and peer counselors should be supported in the hospital setting.

3. Healthcare professionals need training on the basics of lactation, breastfeeding counseling, and lactation management.

Four Breastfeeding Centers of Excellence should be selected out of existing exceptional programs. The Centers should receive funding to support their programs with the mandate that each center hold two educational workshops per year for healthcare staff in their region. Emphasis should be placed on educating physicians, as they are the power brokers in the healthcare system.

4. Maternity leave policies should be extended to better support new families.

The workplace needs to change to become breastfeeding-friendly by providing private rooms for breastfeeding or breast milk expression, breast pumps, milk storage, breaks during the work day, flexible work schedules, and on-site childcare facilities. Laws affecting the workplace that promote and support breastfeeding, like the breastfeeding bills sponsored by Congresswoman Carolyn Maloney (D-NY), should receive bipartisan support.[85] Examples of these bills include:

- The Pregnancy Discrimination Act Amendments of 2000 (H.R. 1478, H.R. 3861/S 3023). These amendments clarify the Pregnancy Discrimination Act to protect breastfeeding under civil rights law, requiring that women cannot be fired or discriminated against in the workplace for expressing breast milk (or directly breastfeeding) during their own lunch time or break time.

- The Breastfeeding Promotion and Employers' Tax Incentive Act (H.R. 1163). This Act encourages employers to set up a safe, private, and sanitary environment for women to express (or pump) breast milk by providing a tax credit for employers who set up a lactation location, purchase or rent lactation-related equipment, hire a lactation consultant, or otherwise promote a lactation-friendly environment.

- The Breast Pump Safety Act (H.R. 3372). This Act requires the U.S. Food and Drug Administration to develop minimum quality standards for breast pumps to ensure that products on the market are safe and effective.

5. Health insurance should cover lactation needs.

Insurance companies should be encouraged to pay for breast pumps for all mothers and for lactation consultant support both in the hospital and at home in the early postpartum period.

APPENDIX

Table 1: 2004 Breastfeeding Initiation Rates by State (percent)

	U.S.	***70.3***
1.	Alaska	88.0
2.	Idaho	86.0
3.	Oregon	86.0
4.	Washington	85.9
5.	Utah	84.8
6.	California	82.2
7.	Arizona	80.9
8.	Colorado	80.5
9.	Hawaii	80.2
10.	Nevada	80.2
11.	Montana	79.8
12.	Minnesota	79.4
13.	New Mexico	77.7
14.	Wyoming	75.5
15.	Maryland	74.7
16.	Texas	74.5
17.	New Hampshire	74.4
18.	Massachusetts	74.0
19.	Florida	71.6
20.	New Jersey	71.5
21.	Vermont	71.3
22.	Connecticut	71.1
23.	Maine	70.9
24.	New York	70.0
25.	Wisconsin	69.3
26.	North Dakota	69.1
27.	Oklahoma	69.0
28.	Kansas	68.8
29.	South Dakota	68.6
30.	Iowa	68.4
31.	Michigan	67.7
32.	Virginia	67.7
33.	Missouri	65.6
34.	Washington, D.C.	65.2
35.	Indiana	64.7
36.	Nebraska	64.4
37.	Illinois	63.8
38.	Georgia	63.2
39.	Rhode Island	63.2
40.	Delaware	62.9
41.	Ohio	61.9
42.	North Carolina	60.8
43.	Tennessee	59.5
44.	Pennsylvania	59.2
45.	Arkansas	59.1
46.	Alabama	57.7
47.	South Carolina	55.8
48.	Kentucky	49.6
49.	Louisiana	48.8
50.	West Virginia	47.1
51.	Mississippi	46.1

Source: www.cdc.gov/breastfeeding.

Table 2: 2004 Six-Month Breastfeeding Rates by State (percent)

	U.S.	***36.2***	26.	South Dakota	34.7
1.	Oregon	53.0	27.	Washington D.C.	34.6
2.	Utah	52.4	28.	Nebraska	33.8
3.	Idaho	50.3	29.	Illinois	33.7
4.	Alaska	48.1	30.	Michigan	33.3
5.	Nevada	47.0	31.	Florida	33.2
6.	Montana	46.8	32.	Connecticut	33.1
7.	Washington	46.8	33.	Kansas	32.8
8.	New Hampshire	45.9	34.	Pennsylvania	32.7
9.	California	45.1	35.	Ohio	31.3
10.	Minnesota	44.3	36.	North Carolina	31.2
11.	Hawaii	43.8	37.	Oklahoma	31.2
12.	Wyoming	43.6	38.	Georgia	30.4
13.	Vermont	42.9	39.	Indiana	30.2
14.	New Mexico	42.2	40.	Missouri	29.9
15.	Colorado	41.5	41.	Iowa	29.8
16.	Arizona	40.8	42.	Delaware	29.6
17.	Maryland	40.8	43.	Tennessee	29.1
18.	Massachusetts	38.8	44.	Rhode Island	28.3
19.	Wisconsin	38.1	45.	South Carolina	27.2
20.	Texas	37.5	46.	Alabama	22.7
21.	New Jersey	37.4	47.	Kentucky	22.7
22.	New York	37.2	48.	Arkansas	21.4
23.	Maine	36.9	49.	Louisiana	18.9
24.	North Dakota	36.0	50.	West Virginia	18.3
25.	Virginia	36.0	51.	Mississippi	16.2

Source: www.cdc.gov/breastfeeding.

Table 3: 2004 Infant Mortality Rank by State

	Deaths per 1,000 live births	
	U.S.	***7.0***
1.	Vermont	4.3
2.	New Hampshire	4.4
3.	Maine	4.6
4.	Massachusetts	4.9
5.	California	5.0
5.	Minnesota	5.0
7.	Utah	5.3
7.	Washington	5.3
9.	Iowa	5.4
10.	Connecticut	5.6
10.	New Jersey	5.6
12.	Alaska	5.9
12.	New Mexico	5.9
12.	Oregon	5.9
12.	Rhode Island	5.9
16.	Colorado	6.0
17.	Nevada	6.1
18.	Texas	6.2
19.	Nebraska	6.3
19.	New York	6.3
21.	Arizona	6.4
21.	Kentucky	6.4
23.	Wisconsin	6.6
24.	Idaho	6.7
25.	Hawaii	6.9
25.	North Dakota	6..9
27.	Kansas	7.0
27.	Montana	7.0
29.	South Dakota	7.1
30.	Pennsylvania	7.2
31.	Illinois	7.4
31.	Virginia	7.4
33.	Florida	7.4
34.	Indiana	7.5
34.	Oklahoma	7.7
34.	Wyoming	7.7
37.	Ohio	7.8
38.	Missouri	7.9
39.	North Carolina	8.0
39.	West Virginia	8.0
41.	Maryland	8.2
42.	Michigan	8.4
43.	Alabama	8.6
43.	Georgia	8.6
45.	Delaware	8.7
46.	Arkansas	8.8
46.	South Carolina	8.8
48.	Tennessee	9.2
49.	Louisiana	9.7
50.	Mississippi	10.2

Note: 2004 ranks based on 2002-2003 data.

Source: National Center for Health Statistics, Washington, D.C.

*Table 4: Infant Mortality Rates for 2002 for Countries of >250,000 with Infant Mortality Rates Equal to or Less Than the U.S. in 2002/2001**

Hong Kong	2.3
Singapore	3.0
Japan	3.0
Finland	3.0
Sweden	3.3
Norway	3.5
Czech Republic	3.9
Spain	4.1
France	4.1
Austria	4.1
Germany	4.2
Belgium	4.4
Denmark	4.4
Italy	4.5
Switzerland	4.5
Portugal	5.0
Australia	5.0
Korea	5.1
Netherlands	5.1
Greece	5.1
Ireland	5.1
UK	5.2
Israel	5.4
Canada	5.4
New Zealand	5.6
Cuba	6.5
United States	***7.0 (27[b])***

** IMR: per 1,000 live births*
Source: D. L. Hoyert, T. J. Mathews, F. Menacker, D. M. Strobino, and B. Guyer, "Annual Summary of Vital Statistics: 2004" Pediatrics 117, no. 1 (2006): 168-83.

Table 5: 2004 Annual Summary of Vital Statistics

2004	*Certificates*
Number of Births	4,115,590
Birth Rate	14.0 births per 1,000 population
Birth rate for teen mothers	41.2 births per 1,000 women ages 15-19
Proportion of all births to unmarried women	35.7%
Births by cesarean delivery	29.1%
Use of timely prenatal care	84.0%
Percent preterm births (<37 weeks gestational age)	12.5%
Percent low birthweight births (<2,500 grams)	8.1%

Note: The data for this report were obtained from birth certificates, fetal death reports, and death certificates from U.S. residents.
Source: D. L. Hoyert, T. J. Mathews, F. Menacker, D. M. Strobino, and B. Guyer, "Annual Summary of Vital Statistics: 2004" Pediatrics 117, no. 1 (2006): 168-83.

Table 6: Contraindications to Breastfeeding

1. Baby with galactosemia
2. Mother HIV positive (USA)
3. Mother taking illegal (street) drugs
4. Mother on certain medications
5. Mother with active, untreated tuberculosis
6. Mother positive for Human T-Cell Lymphotrophic Virus Type I or II
7. Mother with herpes simplex lesion on breast (ok other breast)

Source: American Academy of Pediatrics, Section on Breastfeeding, "Breastfeeding and the Use of Human Milk," Pediatrics 115, no. 3 (2005): 496-506.

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