

# The Surgeon General's Call to Action to Support Breastfeeding

2011



U.S. Department of Health and Human Services



# **The Surgeon General's Call to Action to Support Breastfeeding**

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
U.S. Public Health Service  
Office of the Surgeon General

### **Suggested Citation**

U.S. Department of Health and Human Services. *The Surgeon General's Call to Action to Support Breastfeeding*. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General; 2011.

This publication is available at <http://www.surgeongeneral.gov>.

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## ***Message from the Secretary, U.S. Department of Health and Human Services***

As one of the most universal and natural facets of motherhood, the ability to breastfeed is a great gift. Breastfeeding helps mothers and babies bond, and it is vitally important to mothers' and infants' health.

For much of the last century, America's mothers were given poor advice and were discouraged from breastfeeding, to the point that breastfeeding became an unusual choice in this country. However, in recent decades, as mothers, their families, and health professionals have realized the importance of breastfeeding, the desire of mothers to breastfeed has soared. More and more mothers are breastfeeding every year. In fact, three-quarters of all newborns in America now begin their lives breastfeeding, and breastfeeding has regained its rightful place in our nation as the norm—the way most mothers feed their newborns.

Each mother's decision about how she feeds her baby is a personal one. Because of the ramifications of her decision on her baby's health as well as her own, every mother in our nation deserves information, guidance, and support with this decision from her family and friends, the community where she lives, the health professionals on whom she relies, and her employer.

That is why this Surgeon General's *Call to Action* is so important.

This *Call to Action* describes specific steps people can take to participate in a society-wide approach to support mothers and babies who are breastfeeding. This approach will increase the public health impact of everyone's efforts, reduce inequities in the quality of health care that mothers and babies receive, and improve the support that families receive in employment and community settings.

I recall my own cherished memories of breastfeeding, and I am grateful for the help and support I received, especially when I went back to work as a young mother. I am also aware that many other mothers are not able to benefit from the support I had. As Secretary of the Department of Health and Human Services, I urge all Americans to be supportive of breastfeeding mothers and families in their communities and to extend their support so that these mothers get the health care, the help, and the encouragement they deserve.

*Kathleen Sebelius  
Secretary  
U.S. Department of Health and Human Services*



## ***Foreword from the Surgeon General, U.S. Department of Health and Human Services***

For nearly all infants, breastfeeding is the best source of infant nutrition and immunologic protection, and it provides remarkable health benefits to mothers as well. Babies who are breastfed are less likely to become overweight and obese. Many mothers in the United States want to breastfeed, and most try. And yet within only three months after giving birth, more than two-thirds of breastfeeding mothers have already begun using formula. By six months postpartum, more than half of mothers have given up on breastfeeding, and mothers who breastfeed one-year-olds or toddlers are a rarity in our society.

October 2010 marked the 10th anniversary of the release of the *HHS Blueprint for Action on Breastfeeding*, in which former Surgeon General David Satcher, M.D., Ph.D., reiterated the commitment of previous Surgeons General to support breastfeeding as a public health goal. This was the first comprehensive framework for national action on breastfeeding. It was created through collaboration among representatives from medical, business, women's health, and advocacy groups as well as academic communities. The *Blueprint* provided specific action steps for the health care system, researchers, employers, and communities to better protect, promote, and support breastfeeding.

I have issued this *Call to Action* because the time has come to set forth the important roles and responsibilities of clinicians, employers, communities, researchers, and government leaders and to urge us all to take on a commitment to enable mothers to meet their personal goals for breastfeeding. Mothers are acutely aware of and devoted to their responsibilities when it comes to feeding their children, but the responsibilities of others must be identified so that all mothers can obtain the information, help, and support they deserve when they breastfeed their infants. Identifying the support systems that are needed to help mothers meet their personal breastfeeding goals will allow them to stop feeling guilty and alone when problems with breastfeeding arise. All too often, mothers who wish to breastfeed encounter daunting challenges in moving through the health care system. Furthermore, there is often an incompatibility between employment and breastfeeding, but with help this is not impossible to overcome. Even so, because the barriers can seem insurmountable at times, many mothers stop breastfeeding. In addition, families are often unable to find the support they need in their communities to make breastfeeding work for them. From a societal perspective, many research questions related to breastfeeding remain unanswered, and for too long, breastfeeding has received insufficient national attention as a public health issue.

This *Call to Action* describes in detail how different people and organizations can contribute to the health of mothers and their children. Rarely are we given the chance to make such a profound and lasting difference in the lives of so many. I am confident that this *Call to Action* will spark countless imaginative, effective, and mutually supportive endeavors that improve support for breastfeeding mothers and children in our nation.

*Regina M. Benjamin, M.D., M.B.A.  
Vice Admiral, U.S. Public Health Service  
Surgeon General*



# The Importance of Breastfeeding

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## Health Effects

The health effects of breastfeeding are well recognized and apply to mothers and children in developed nations such as the United States as well as to those in developing countries. Breast milk is uniquely suited to the human infant's nutritional needs and is a live substance with unparalleled immunological and anti-inflammatory properties that protect against a host of illnesses and diseases for both mothers and children.<sup>1</sup>

In 2007, the Agency for Healthcare Research and Quality (AHRQ) published a summary of systematic reviews and meta-analyses on breastfeeding and maternal and infant health outcomes in developed countries.<sup>2</sup> The AHRQ report reaffirmed the health risks associated with formula\* feeding and early weaning from breastfeeding. With regard to short-term risks, formula feeding is associated with increases in common childhood infections, such as diarrhea<sup>3</sup> and ear infections.<sup>2</sup> The risk of acute ear infection, also called acute otitis media, is 100 percent higher among exclusively formula-fed infants than in those who are exclusively breastfed during the first six months (see Table 1).<sup>2</sup>

The risk associated with some relatively rare but serious infections and diseases, such as severe lower respiratory infections<sup>2,4</sup> and leukemia<sup>2,5</sup> are also higher for formula-fed infants. The risk of hospitalization for lower respiratory tract disease in the first year of life is more than 250 percent higher among babies who are formula fed than in those who are exclusively breastfed at least four months.<sup>4</sup> Furthermore, the risk of sudden infant death syndrome is 56 percent higher among infants who are never breastfed.<sup>2</sup> For vulnerable premature infants, formula feeding is associated with higher rates of necrotizing enterocolitis (NEC).<sup>2</sup> The AHRQ report also concludes that formula feeding is associated with higher risks for major chronic diseases and conditions, such as type 2 diabetes,<sup>6</sup> asthma,<sup>2</sup> and childhood obesity,<sup>7</sup> all three of which have increased among U.S. children over time.

As shown in Table 1, compared with mothers who breastfeed, those who do not breastfeed also experience increased risks for certain poor health outcomes. For example, several studies have found the risk of breast cancer to be higher for women who have never breastfed.<sup>2,8,9</sup> Similarly, the risk of ovarian cancer was found to be 27 percent higher for women who had never breastfed than for those who had breastfed for some period of time.<sup>2</sup> In general, exclusive breastfeeding and longer durations of breastfeeding are associated with better maternal health outcomes.

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\* The term "formula" is used here to include the broad class of human milk substitutes that infants receive, including commercial infant formula.

The AHRQ report cautioned that, although a history of breastfeeding is associated with a reduced risk of many diseases in infants and mothers, almost all the data in the AHRQ review were gathered from observational studies. Therefore, the associations described in the report do not necessarily represent causality. Another limitation of the systematic review was the wide variation in quality among the body of evidence across health outcomes.

As stated by the U.S. Preventive Services Task Force (USPSTF) evidence review,<sup>10</sup> human milk is the natural source of nutrition for all infants. The value of breastfeeding and human milk for infant nutrition and growth has been long recognized, and the health outcomes of nutrition and growth were not covered by the AHRQ review.

**Table 1. Excess Health Risks Associated with Not Breastfeeding**

Outcome	Excess Risk* (%)
<b><i>Among full-term infants</i></b>	
Acute ear infection (otitis media) <sup>2</sup>	100
Eczema (atopic dermatitis) <sup>11</sup>	47
Diarrhea and vomiting (gastrointestinal infection) <sup>3</sup>	178
Hospitalization for lower respiratory tract diseases in the first year <sup>4</sup>	257
Asthma, with family history <sup>2</sup>	67
Asthma, no family history <sup>2</sup>	35
Childhood obesity <sup>7</sup>	32
Type 2 diabetes mellitus <sup>6</sup>	64
Acute lymphocytic leukemia <sup>2</sup>	23
Acute myelogenous leukemia <sup>5</sup>	18
Sudden infant death syndrome <sup>2</sup>	56
<b><i>Among preterm infants</i></b>	
Necrotizing enterocolitis <sup>2</sup>	138
<b><i>Among mothers</i></b>	
Breast cancer <sup>8</sup>	4
Ovarian cancer <sup>2</sup>	27

\* The excess risk is approximated by using the odds ratios reported in the referenced studies. Further details are provided in Appendix 2.

## Psychosocial Effects

Although the typical woman may cite the health advantages for herself and her child as major reasons that she breastfeeds, another important factor is the desire to experience a sense of bonding or closeness with her newborn.<sup>12–14</sup> Indeed, some women indicate that the psychological benefit of breastfeeding, including bonding more closely with their babies, is the most important influence on their decision to breastfeed.<sup>12</sup> Even women who exclusively formula feed have reported feeling that breastfeeding is more likely than formula feeding to create a close bond between mother and child.<sup>13</sup>

In addition, although the literature is not conclusive on this matter, breastfeeding may help to lower the risk of postpartum depression, a serious condition that almost 13 percent of mothers experience. This disorder poses risks not only to the mother's health but also to the health of her child, particularly when she is unable to fully care for her infant.<sup>15</sup> Research findings in this area are mixed, but some studies have found that women who have breastfed and women with longer durations of breastfeeding have a lower risk of postpartum depression.<sup>16–18</sup> Whether postpartum depression affects breastfeeding or vice versa, however, is not well understood.<sup>19</sup>

## Economic Effects

In addition to the health advantages of breastfeeding for mothers and their children, there are economic benefits associated with breastfeeding that can be realized by families, employers, private and government insurers, and the nation as a whole. For example, a study conducted more than a decade ago estimated that families who followed optimal breastfeeding practices could save more than \$1,200–\$1,500 in expenditures for infant formula in the first year alone.<sup>20</sup> In addition, better infant health means fewer health insurance claims, less employee time off to care for sick children, and higher productivity, all of which concern employers.<sup>21</sup>

Increasing rates of breastfeeding can help reduce the prevalence of various illnesses and health conditions, which in turn results in lower health care costs. A study conducted in 2001 on the economic impact of breastfeeding for three illnesses—otitis media, gastroenteritis, and NEC—found that increasing the proportion of children who were breastfed in 2000 to the targets established in *Healthy People 2010*<sup>22</sup> would have saved an estimated \$3.6 billion annually. These savings were based on direct costs (e.g., costs for formula as well as physician, hospital, clinic, laboratory, and procedural fees) and indirect costs (e.g., wages parents lose while caring for an ill child), as well as the estimated cost of premature death.<sup>23</sup> A more recent study that used costs adjusted to 2007 dollars and evaluated costs associated with additional illnesses and diseases (sudden infant death syndrome, hospitalization for lower respiratory tract infection in infancy, atopic dermatitis, childhood leukemia, childhood obesity, childhood asthma, and type 1 diabetes mellitus) found that if 90 percent of U.S. families followed guidelines to breastfeed exclusively for six months, the United States would save \$13 billion annually from reduced direct medical and indirect costs and the cost of premature death. If 80 percent of U.S. families complied, \$10.5 billion per year would be saved.<sup>24</sup>

## Environmental Effects

Breastfeeding also confers global environmental benefits; human milk is a natural, renewable food that acts as a complete source of babies' nutrition for about the first six months of life.<sup>25</sup> Furthermore, there are no packages involved, as opposed to infant formulas and other substitutes for human milk that require packaging that ultimately may be deposited in landfills. For every one million formula-fed babies, 150 million containers of formula are consumed;<sup>26</sup> while some of those containers could be recycled, many end up in landfills. In addition, infant formulas must be transported from their place of manufacture to retail locations, such as grocery stores, so that they can be purchased by families. Although breastfeeding requires mothers to consume a small amount of additional calories, it generally requires no containers, no paper, no fuel to prepare, and no transportation to deliver, and it reduces the carbon footprint by saving precious global resources and energy.

## Endorsement of Breastfeeding as the Best Nutrition for Infants

Because breastfeeding confers many important health and other benefits, including psychosocial, economic, and environmental benefits, it is not surprising that breastfeeding has been recommended by several prominent organizations of health professionals, among them the American Academy of Pediatrics (AAP),<sup>25</sup> American Academy of Family Physicians,<sup>27</sup> American College of Obstetricians and Gynecologists,<sup>28</sup> American College of Nurse-Midwives,<sup>29</sup> American Dietetic Association,<sup>30</sup> and American Public Health Association,<sup>31</sup> all of which recommend that most infants in the United States be breastfed for at least 12 months. These organizations also recommend that for about the first six months, infants be exclusively breastfed, meaning they should not be given any foods or liquids other than breast milk, not even water.

Regarding nutrient composition, the American Dietetic Association stated, "Human milk is uniquely tailored to meet the nutrition needs of human infants. It has the appropriate balance of nutrients provided in easily digestible and bioavailable forms."<sup>30</sup>



The AAP stated, “Human milk is species-specific, and all substitute feeding preparations differ markedly from it, making human milk uniquely superior for infant feeding. Exclusive breastfeeding 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.”<sup>25</sup>

While breastfeeding is recommended for most infants, it is also recognized that a small number of women cannot or should not breastfeed. For example, AAP states that breastfeeding is contraindicated for mothers with HIV, human T-cell lymphotropic virus type 1 or type 2, active untreated tuberculosis, or herpes simplex lesions on the breast. Infants with galactosemia should not be breastfed. Additionally, the maternal use of certain drugs or treatments, including illicit drugs, antimetabolites, chemotherapeutic agents, and radioactive isotope therapies, is cause for not breastfeeding.<sup>25</sup>

## Federal Policy on Breastfeeding

Over the last 25 years, the Surgeons General of the United States have worked to protect, promote, and support breastfeeding. In 1984, Surgeon General C. Everett Koop convened the first Surgeon General’s Workshop on Breastfeeding, which drew together professional and lay experts to outline key actions needed to improve breastfeeding rates.<sup>32</sup> Participants developed recommendations in six distinct areas: 1) the world of work, 2) public education, 3) professional education, 4) health care system, 5) support services, and 6) research. Follow-up reports in 1985 and 1991 documented progress in implementing the original recommendations.<sup>33,34</sup>

In 1990, the United States signed onto the *Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding*, which was adopted by the World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF). This declaration called upon all governments to nationally coordinate breastfeeding activities, ensure optimal practices in support of breastfeeding through maternity services, take action on the *International Code of Marketing of Breast-milk Substitutes* (the Code),<sup>35</sup> and enact legislation to protect breastfeeding among working women.<sup>36</sup>

In 1999, Surgeon General David Satcher requested that a departmental policy on breastfeeding be developed, with particular emphasis on reducing racial and ethnic disparities in breastfeeding. The following year, the Secretary of the U.S. Department of Health and Human Services (HHS), under the leadership of the department’s Office on Women’s Health (OWH), released the *HHS Blueprint for Action on Breastfeeding*.<sup>37</sup> This document, which has received widespread attention in the years since its release, declared breastfeeding to be a key public health issue in the United States.

# Rates of Breastfeeding

Over the last few decades, rates of breastfeeding have improved, but in recent years, rates generally have climbed more slowly. Figure 1 presents data from 1970 through 2007 from two sources. Data before 1999 are from the Ross Mothers Survey.<sup>38–40</sup> Data for 1999 through 2007 are from the Centers for Disease Control and Prevention’s (CDC) annual National Immunization Survey (NIS), which includes a series of questions regarding breastfeeding practices.<sup>41</sup>

National objectives for *Healthy People 2010*, in addition to calling for 75 percent of mothers to initiate breastfeeding, called for 50 percent to continue breastfeeding for six months and 25 percent to continue breastfeeding for one year.<sup>22</sup> *Healthy People 2010* also included objectives for exclusive breastfeeding: targets were for 40 percent of women to breastfeed exclusively for three months and for 17 percent to do so for six months.<sup>22</sup>

The most recent NIS data shown in Figure 1 indicate that, while the rate of breastfeeding initiation has met the 2010 target, rates of duration and exclusivity still fall short of *Healthy People 2010* objectives.<sup>41</sup> Among children born in 2007, 75 percent of mothers initiated breastfeeding, 43 percent were breastfeeding at six months, and 22 percent were breastfeeding at 12 months (see Figure 1). Although human milk is the only nutrition most babies need for about the first six months, many women discontinue breastfeeding or add other foods or liquids to their baby’s diet well before the child reaches six months of age. Among breastfed infants born in 2007, an estimated 33 percent were exclusively breastfed through age three months, and only 13 percent were exclusively breastfed for six months.

Although much is known about rates of breastfeeding in the population, mothers’ breastfeeding practices have not been well understood until recently. The Infant Feeding Practices Study II,<sup>42</sup> conducted during 2005–2007 by the U.S. Food and Drug Administration (FDA) in collaboration with CDC, was designed to fill in some of the gaps. For this longitudinal study of women followed from late pregnancy through their infants’ first year of life, participants were selected from across

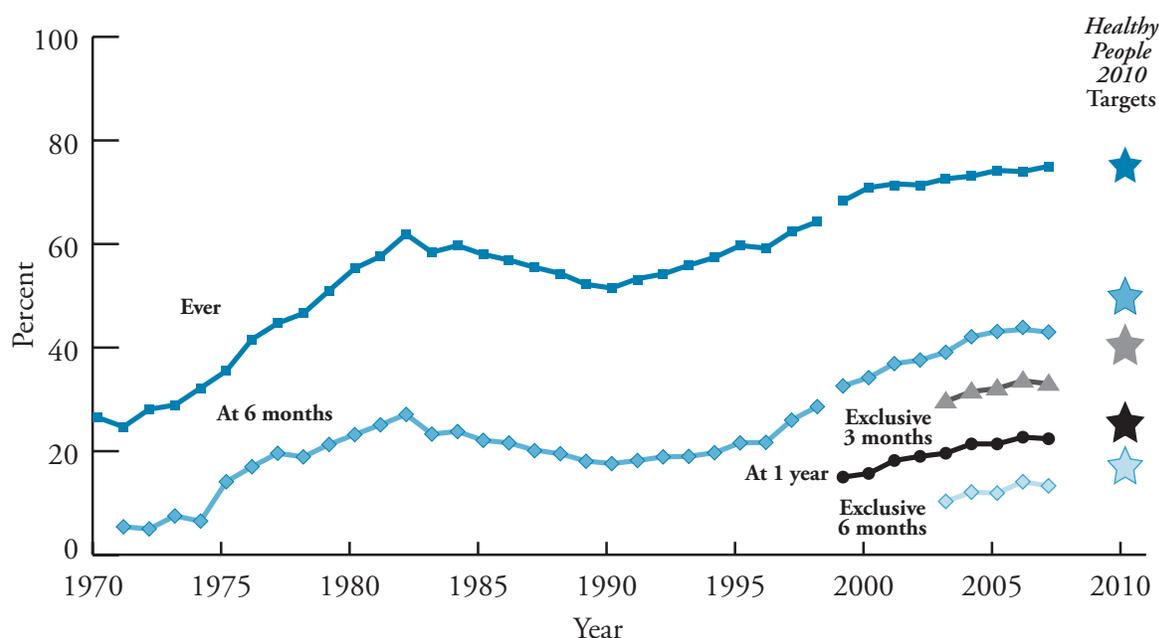


the United States. On average, members of the study group had higher levels of education, were older, were more likely to be white, were more likely to have a middle-level income, and were more likely to be employed than the overall U.S. female population.<sup>42</sup>

Some of the findings from this study were discouraging; for instance, almost half of breastfed newborns were supplemented with infant formula while they were still in the

hospital after birth.<sup>43</sup> Most healthy, full-term, breastfed newborns have no medical need to receive supplemental infant formula,<sup>44</sup> and supplementing with infant formula can be detrimental to breastfeeding.<sup>25</sup> In addition, more than 40 percent of infants in the Infant Feeding Practices Study II sample were consuming solid foods within the first four months after birth<sup>43</sup> despite recommendations by the AAP that no infant, whether breastfed or formula fed, should be given any solid foods until at least the age of four months.<sup>25</sup>

**Figure 1. National Trends in Breastfeeding Rates**



Note: Data from before 1999 are from a different source, as indicated by the line break.  
Sources: 1970–1998, Ross Mothers Survey;<sup>38,39,40</sup> 1999–2007, Centers for Disease Control and Prevention, National Immunization Survey.<sup>41</sup>

## Disparities in Breastfeeding Practices

Despite overall improvements in breastfeeding rates, unacceptable disparities in breastfeeding have persisted by race/ethnicity, socioeconomic characteristics, and geography (see Table 2). For example, breastfeeding rates for black infants are about 50 percent lower than those for white infants at birth, age six months, and age 12 months, even when controlling for the family’s income or educational level. On the other hand, the gap between white and black mothers in initiation of breastfeeding has diminished over time, from 35 percentage points in 1990 to 18 percentage points in 2007. Yet, the gap in rates of breastfeeding continuation at six months has remained around 15 percentage points throughout this period.<sup>45,46</sup>

**Table 2. Provisional Breastfeeding Rates Among Children Born in 2007\***

Sociodemographic Factor	Ever Breastfed (%)	Breastfeeding at 6 Months (%)	Breastfeeding at 12 Months (%)
<b>United States</b>	<b>75.0</b>	<b>43.0</b>	<b>22.4</b>
<b><i>Race/ethnicity</i></b>			
American Indian or Alaska Native	73.8	42.4	20.7
Asian or Pacific Islander	83.0	56.4	32.8
Hispanic or Latino	80.6	46.0	24.7
Non-Hispanic Black or African American	58.1	27.5	12.5
Non-Hispanic White	76.2	44.7	23.3
<b><i>Receiving WIC<sup>†</sup></i></b>			
Yes	67.5	33.7	17.5
No, but eligible	77.5	48.2	30.7
Ineligible	84.6	54.2	27.6
<b><i>Maternal education</i></b>			
Not a high school graduate	67.0	37.0	21.9
High school graduate	66.1	31.4	15.1
Some college	76.5	41.0	20.5
College graduate	88.3	59.9	31.1

\* Survey limited to children aged 19–35 months at the time of data collection. The lag between birth and collection of data allows for tracking of breastfeeding initiation as well as calculating the duration of breastfeeding.

<sup>†</sup> WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; U.S. Department of Agriculture.

Source: Centers for Disease Control and Prevention, National Immunization Survey.<sup>41</sup>

The reasons for the persistently lower rates of breastfeeding among African American women are not well understood, but employment may play a role.<sup>47</sup> African American women tend to return to work earlier after childbirth than white women, and they are more likely to work in environments that do not support breastfeeding.<sup>48</sup> Although research has shown that returning to work is associated with early discontinuation of breastfeeding,<sup>40</sup> a supportive work environment may make a difference in whether mothers are able to continue breastfeeding.<sup>49,50</sup>

With regard to socioeconomic characteristics, many studies have found income to be positively associated with breastfeeding.<sup>40,51</sup> For example, a study that included children participating in the U.S. Department of Agriculture’s (USDA) Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), which uses income to determine eligibility, found they were less likely to be breastfed than children in middle- and upper-income families.<sup>40</sup> Educational status is also associated with breastfeeding; women with less than a high school education are far less likely to breastfeed than women who have earned a college degree. Geographic disparities are also evident; women living in the southeastern United States are less likely to initiate and continue breastfeeding than women in other areas of the country (see Figure 2), and women living in rural areas are less likely to breastfeed than women in urban areas.<sup>51,52</sup> Understanding



# Barriers to Breastfeeding in the United States

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Even though a variety of evidence indicates that breastfeeding reduces many different health risks for mothers and children, numerous barriers to breastfeeding remain—and action is needed to overcome these barriers.

## Lack of Knowledge

Most women in the United States are aware that breastfeeding is the best source of nutrition for most infants, but they seem to lack knowledge about its specific benefits and are unable to cite the risks associated with not breastfeeding.<sup>61–63</sup> For example, a recent study of a national sample of women enrolled in WIC reported that only 36 percent of participants thought that breastfeeding would protect the baby against diarrhea.<sup>61</sup> Another national survey found that only a quarter of the U.S. public agreed that feeding a baby with infant formula instead of breast milk increases the chances the baby will get sick.<sup>62</sup> In addition, qualitative research with mothers has revealed that information about breastfeeding and infant formula is rarely provided by women’s obstetricians during their prenatal visits.<sup>64</sup> Moreover, many people, including health professionals, believe that because commercially prepared formula has been enhanced in recent years, infant formula is equivalent to breast milk in terms of its health benefits;<sup>62,63</sup> however, this belief is incorrect.

Mothers are also uncertain about what to expect with breastfeeding and how to actually carry it out.<sup>64,65</sup> Even though breastfeeding is often described as “natural,” it is also an art that has to be learned by both the mother and the newborn. Skills in how to hold and position a baby at the breast, how to achieve an effective latch, and other breastfeeding techniques may need to be taught. Not surprisingly, some women expect breastfeeding to be easy, but then find themselves faced with



challenges. The incongruity between expectations about breastfeeding and the reality of the mother’s early experiences with breastfeeding her infant has been identified as a key reason that many mothers stop breastfeeding within the first two weeks postpartum.<sup>66</sup> On the other hand, a misperception that many women experience difficulties with breastfeeding may cause excessive concern among mothers about its feasibility.<sup>67–70</sup>

The perceived inconvenience of breastfeeding is also an issue; in a national public opinion survey, 45 percent of U.S. adults indicated that they believed a breastfeeding mother has to give up too many habits of her lifestyle.<sup>71</sup> In addition, the commitment required by breastfeeding and difficulties in establishing breastfeeding are sometimes seen as threats to mothers' freedom and independence.<sup>72–76</sup>

Unfortunately, education about breastfeeding is not always readily available to mothers nor easily understood by them. Many women rely on books, leaflets, and other written materials as their only source of information on breastfeeding,<sup>64,65,77</sup> but using these sources to gain knowledge about breastfeeding can be ineffective, especially for low-income women, who may have more success relying on role models.<sup>78</sup> The goals for educating mothers include increasing their knowledge and skills relative to breastfeeding and positively influencing their attitudes about it.

## Social Norms

In the United States, bottle feeding is viewed by many as the “normal” way to feed infants. Moreover, studies of mothers who are immigrants that examine the effects of acculturation have found that rates of breastfeeding decrease with each generation in the United States and that mothers perceive bottle feeding as more acceptable here than in their home countries.<sup>79–86</sup> Widespread exposure to substitutes for human milk, typically fed to infants via bottles, is largely responsible for the development of this social norm. After reviewing data from market research and studies conducted during 1980–2005, the U.S. Government Accountability Office (GAO) reported that advertising of formula is widespread and increasing in the United States.<sup>87</sup> Furthermore, the strong inverse association between the marketing of human milk substitutes and breastfeeding rates was the basis of the WHO *International Code of Marketing of Breast-milk Substitutes* (the Code).<sup>35</sup> The Code has been reaffirmed in several subsequent World Health Assembly resolutions. However, its provisions are not legally binding in the United States.

Certain cultural beliefs and practices also contribute to what women consider to be normal feeding practices,<sup>76,88</sup> although some of these practices are not recommended today. The mistaken belief that, for babies, “big is healthy,” can lead to both formula feeding and inappropriate early introduction of solid foods.<sup>89,90</sup> The false idea that larger babies are healthier is common among many racial and ethnic groups, and mothers who are part of social networks that hold this belief may be encouraged to supplement breastfeeding with formula if the infant is perceived as thin.<sup>91</sup>

Low-income Hispanic women in Denver, Colorado, were found to favor a practice called “best of both” (i.e., providing both breast milk and infant formula). Despite guidance that breast milk is the only source of nutrition a child needs for about the first six months of life, some women mistakenly see the “best of both” as a way to ensure that their babies get both the healthy aspects of human milk and what they believe to be the “vitamins” present in infant formula.<sup>67</sup> Another practice associated with cultural beliefs is the use of cereal in a bottle because of the misperception that it will prolong infants' sleep.<sup>90</sup>

## Poor Family and Social Support

Women with friends who have breastfed successfully are more likely to choose to breastfeed. On the other hand, negative attitudes of family and friends can pose a barrier to breastfeeding. Some mothers say that they do not ask for help with breastfeeding from their family or friends because of the contradictory information they receive from these sources.<sup>74</sup>

In many families, fathers play a strong role in the decision of whether to breastfeed.<sup>92,93</sup> Fathers may be opposed to breastfeeding because of concerns about what their role would be in feeding, whether they would be able to bond with their infant if they were personally unable to feed the baby, and how the mother would be able to accomplish household responsibilities if she breastfed.<sup>64,72,94,95</sup> Studies of African American families in which education on breastfeeding was directed at the father found a 20 percent increase in breastfeeding rates, indicating that paternal influences on maternal feeding practices are critically important in early decision making about breastfeeding.<sup>92,96</sup>

Although they can constitute a barrier to breastfeeding, fathers can also be a positive influence. A randomized controlled trial of a two-hour prenatal intervention with fathers on how to be supportive of breastfeeding found a far higher rate of breastfeeding initiation among participants' partners (74 percent) than among partners of controls (14 percent).<sup>93</sup> In another trial, 25 percent of women whose partners participated in a program on how to prevent and address common problems with lactation (such as pain or fear of insufficient milk) were still breastfeeding at six months, compared with 15 percent of women whose partners were informed only about the benefits of breastfeeding.<sup>97</sup> Among women who experienced challenges with breastfeeding, the program effect was even stronger, with 24 percent of participants' partners breastfeeding at six months versus less than 5 percent of partners in the comparison group.<sup>97</sup>



## Embarrassment

A study that analyzed data from a national public opinion survey conducted in 2001 found that only 43 percent of U.S. adults believed that women should have the right to breastfeed in public places.<sup>98</sup> Restaurant and shopping center managers have reported that they would either discourage breastfeeding anywhere in their facilities or would suggest that breastfeeding mothers move to an area that was more secluded.<sup>73,99,100</sup> When they have breastfed in public places, many mothers have been asked to stop breastfeeding or to leave.<sup>99</sup> Such situations make women feel embarrassed and fearful of being stigmatized by people around them when they breastfeed.<sup>68,95,101,102</sup> Embarrassment remains a formidable barrier to breastfeeding in the United States and is closely related to disapproval of breastfeeding in public.<sup>76,102–104</sup> Embarrassment about breastfeeding is not limited to public settings, however. Women may find themselves excluded from social interactions when they are breastfeeding because others are reluctant to be in the same room while they breastfeed.<sup>65</sup> For many women, the feeling of embarrassment restricts their activities and is cited as a reason for choosing to feed supplementary formula or to give up breastfeeding altogether.<sup>104,105</sup>

In American culture, breasts have often been regarded primarily as sexual objects, while their nurturing function has been downplayed. Although focusing on the sexuality of female breasts is common in the mass media, visual images of breastfeeding are rare, and a mother may never have seen a woman breastfeeding.<sup>106–109</sup> As shown in both quantitative and qualitative studies, the perception of breasts as sexual objects may lead women to feel uncomfortable about breastfeeding in public.<sup>68,101</sup> As a result, women may feel the need to conceal breastfeeding, but they have difficulty finding comfortable and accessible breastfeeding facilities in public places.<sup>110,111</sup>

## Lactation Problems

Frequently cited problems with breastfeeding include sore nipples, engorged breasts, mastitis, leaking milk, pain, and failure to latch on by the infant.<sup>64,112</sup> Women who encounter these problems early on are less likely to continue to breastfeed unless they get professional assistance.<sup>64,90</sup> Research has found that mothers base their breastfeeding plans on previous experiences, and resolution of these problems may affect their future decisions about feeding.<sup>64,90</sup>

Concern about insufficient milk supply is another frequently cited reason for early weaning of the infant.<sup>90,113–116</sup> One national study on feeding practices found that about 50 percent of mothers cited insufficient milk supply as their reason for stopping breastfeeding.<sup>112</sup> Having a poor milk supply can result from infrequent feeding or poor breastfeeding techniques,<sup>115,117–119</sup> but lack of confidence in breastfeeding or not understanding the normal physiology of lactation can lead to the perception of an insufficient milk supply when in fact the quantity is enough to nurture the baby.<sup>120,121</sup>

Women report receiving conflicting advice from clinicians about how to solve problems with breastfeeding.<sup>94,122,123</sup> Successful initiation depends on experiences in the hospital as well as access to instruction on lactation from breastfeeding experts, particularly in the early postpartum period. Most problems, if identified and treated early, need not pose a threat to the continuation of successful breastfeeding.<sup>124–128</sup>

## Employment and Child Care

Employed mothers typically find that returning to work is a significant barrier to breastfeeding. Women often face inflexibility in their work hours and locations and a lack of privacy for breastfeeding or expressing milk, have no place to store expressed breast milk, are unable to find child care facilities at or near the workplace, face fears over job insecurity, and have limited maternity leave benefits.<sup>13,101,116,129–131</sup> In 2009, the Society for Human Resource Management reported that only 25 percent of companies surveyed had lactation programs or made special accommodations for breastfeeding.<sup>132</sup> Small businesses (fewer than 100 employees) are the least likely to have lactation programs, and whether the workplace is large or small, infants are generally not allowed to be there.<sup>132</sup> Many mothers encounter pressure from coworkers and supervisors not to take breaks to express breast milk, and existing breaks often do not allow sufficient time for expression.<sup>133</sup> When mothers who do not have a private office at work do not have a place to breastfeed or express breast milk, they may resort to using the restroom for these purposes, an approach that is unhygienic and associated with premature weaning.<sup>134–137</sup>

Lack of maternity leave can also be a significant barrier to breastfeeding. Studies show that women intending to return to work within a year after childbirth are less likely to initiate breastfeeding, and mothers who work full-time tend to breastfeed for shorter durations than do part-time or unemployed mothers.<sup>129,138</sup> Women with longer maternity leaves are more likely to combine breastfeeding and employment.<sup>139</sup> In a survey of 712 mothers, each week of maternity leave increased the duration of breastfeeding by almost one-half week.<sup>140</sup> Jobs that have less flexibility and require long separations of mother and baby further complicate breastfeeding.<sup>131</sup> Hourly wage



workers face different challenges than salaried workers, as the former typically have less control over their schedules, and their pay may be reduced if they take breaks to express breast milk.<sup>141</sup>

## Barriers Related to Health Services

Studies have identified major deficits relevant to breastfeeding in hospital policies and clinical practices, including a low priority given to support for breastfeeding and education about it, inappropriate routines and provision of care, fragmented care, and inadequate hospital facilities for women who are breastfeeding.<sup>142,143</sup> A recent report that summarizes maternity practices related to breastfeeding in 2,687 hospitals and birth centers in the United States indicated that these practices are often not evidence based and frequently interfere with breastfeeding.<sup>52</sup> For example, 24 percent of birth facilities in the survey reported giving supplemental feeding to more than half of healthy, full-term, breastfed newborns during the postpartum stay,<sup>52</sup> a practice shown to be unnecessary and detrimental to breastfeeding.<sup>144,145</sup> In addition, 70 percent of facilities that participated in the survey reported giving breastfeeding mothers gift packs containing samples of infant formula,<sup>52</sup> which can have a negative influence on both the initiation and duration of breastfeeding.<sup>146–149</sup>

Separating mothers from their babies during their hospital stay has a negative impact on the initiation and duration of breastfeeding,<sup>150,151</sup> yet DiGirolamo and colleagues<sup>152</sup> reported that only 57 percent of U.S. hospitals and birth centers allowed newborns to stay in the same room as their mothers. In addition, an inverse relationship exists between breastfeeding rates and invasive medical interventions during labor and delivery, such as cesarean section.<sup>153</sup> Cesarean delivery is associated with delayed skin-to-skin contact between mother and baby, increased supplemental feeding, and separation of mother and baby, all of which lead to suboptimal breastfeeding practices.<sup>153–157</sup> Nevertheless, cesarean births are not rare; preliminary data for 2007 indicate that almost one-third of women (32 percent) in the United States gave birth by cesarean section in that year, which is higher than the prevalence of 21 percent reported just 10 years prior in 1997.<sup>158,159</sup>

Obstetrician-gynecologists, pediatricians, and other providers of maternal and child care have a unique opportunity to promote and support breastfeeding. Although pregnant women and mothers consider the advice of clinicians to be very important with regard to their decisions about breastfeeding, clinicians often underestimate their own influence on breastfeeding.<sup>160,161</sup> Clinicians report feeling that they have insufficient knowledge about breastfeeding and that they have low levels of confidence and clinical competence in this area.<sup>143</sup> A recent survey of pediatricians showed that many believe the benefits of breastfeeding do not outweigh the challenges that may be associated with it, and they reported various reasons to recommend against breastfeeding.<sup>162</sup>

Physicians who are ambivalent about breastfeeding or who feel inadequately trained to assist patients with breastfeeding may be unable to properly counsel their patients on specifics about breastfeeding techniques, current health recommendations on breastfeeding, and strategies to combine breastfeeding and work.<sup>90,101,143,161,163–165</sup> Furthermore, a study of clinicians' knowledge and attitudes about breastfeeding found that some clinicians used their own breastfeeding experiences to replace evidence-based knowledge and recommendations they shared with their patients.<sup>160</sup>

# Breastfeeding from the Public Health Perspective

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## Mothers and Their Families

Mothers who are knowledgeable about the numerous health benefits of breastfeeding are more likely to breastfeed.<sup>61,166</sup> Research has shown that mothers tend to believe that breastfeeding is best for their babies, but they appear to know less about the specific reductions in health risks that occur through breastfeeding and the consumption of breast milk.<sup>61</sup> Without knowing this information, mothers cannot properly weigh the advantages and disadvantages of breastfeeding versus formula feeding, and thus they cannot make a truly informed decision about how they want to feed their babies.

Although having information about the health advantages of breastfeeding is important, knowing how to breastfeed is crucial. Mothers who do not know how to initiate and continue breastfeeding after a child is born may fear that it will always be painful or that they will be unable to produce enough milk to fully feed the baby. As a result, they may decide to formula feed the child. Expectant mothers who believe that breastfeeding is difficult or painful identify the fear of discomfort as a major negative influence on their desire to initiate breastfeeding,<sup>68,74</sup> and mothers often expect that breastfeeding will be difficult during the first couple of months.<sup>67,167</sup>

Prenatal classes can be used to help inform women about the health advantages of breastfeeding, both for babies and mothers, and instructors can explain to women the process and techniques they can use to breastfeed.<sup>168</sup> Furthermore, these classes can help prepare expectant mothers for what they should actually experience by providing them with accurate information on breastfeeding. However, pregnant women may not be aware of where classes on breastfeeding are offered, or even that they exist. Thus, clinicians have an important responsibility to



help their patients find a breastfeeding class in which they can participate before their babies are born. If clinicians do not readily provide information about such classes, mothers can ask their clinicians for assistance and advice about how they can find a class. In addition, women can turn to other mothers for information and help with breastfeeding. These women could include other breastfeeding mothers in their communities, whether they are family, friends, or mothers they have met through mother-to-mother support groups, as well as women who are knowledgeable and have previous experience with breastfeeding.

Women should be encouraged to discuss with others their desire and plans to breastfeed, whether such persons are clinicians, family and friends, employers, or child care providers. When a woman has decided she wants to breastfeed, discussing her plans with her clinician during prenatal care and again when she is in the hospital or birth center for childbirth will enable her clinician to give her the type of information and assistance she needs to be successful.<sup>124</sup> Her partner and the baby's grandmothers also play critical support roles when it comes to breastfeeding, both with regard to assisting in decision making about how the baby is fed and in providing support for breastfeeding after the baby is born.<sup>92,169</sup>

Many women mistakenly think they cannot breastfeed if they plan to return to work after childbirth, and thus they may not talk with their employers about their desire to breastfeed or how breastfeeding might be supported in the workplace.<sup>101</sup> If employers are unaware of what is required, mothers can explain that federal law now requires employers to provide breastfeeding employees with reasonable break time and a private, non-bathroom place to express breast milk during the workday, up until the child's first birthday.

In 2009, half of all mothers with children under the age of one year were employed,<sup>170</sup> and thus supportive child care is essential for breastfeeding mothers. Before the child is born, parents can visit child care facilities to determine whether the staff and facility can provide the type of child care that helps a mother to provide breast milk to her baby even if she is separated from the baby because of work. By telling these important people she wants to breastfeed and by discussing ways they can be supportive, an expectant mother is taking a proactive role in ensuring that she and her baby have an environment that gives breastfeeding the best possible start.

Despite the best planning, however, problems or challenges may arise, and when they do, mothers deserve help in solving them. Many sources of assistance are available, such as certified lactation consultants and other clinicians, WIC staff, and peer counselors.<sup>171-174</sup> Ideally, a mother will have access to trained experts who can help her with breastfeeding, and by asking her health care or WIC provider about obtaining help if she needs it, a mother is taking appropriate action to build a support system. Even after childbirth, a mother can ask for referrals to community-based or other types of support, including telephone support. The important thing for mothers to remember is that they should be able to receive help, but they may have to ask for it.

As noted previously, fathers can have a tremendous influence on breastfeeding. Some father-focused efforts are under way in the United States, including the USDA's Fathers Supporting Breastfeeding program, which uses a video, posters, and brochures designed to target African

American and other fathers to positively influence a woman's decision to breastfeed.<sup>175</sup> In addition, an innovative pilot study in a Texas WIC program used a father-to-father peer counseling approach to improve breastfeeding rates among participants' wives and partners. The program not only demonstrated improved breastfeeding rates but also showed improvements in fathers' knowledge about breastfeeding and their beliefs that they could provide support to their breastfeeding partners.<sup>176</sup> Elsewhere, an intervention intended for both fathers and the baby's grandmothers that discussed the benefits and mechanics of breastfeeding, as well as the need for emotional and practical support, was described as enjoyable, acceptable, and useful by participants.<sup>177</sup>

Grandmothers also have tremendous influence on a woman's decisions and practices relative to feeding her infant.<sup>177,178</sup> If a baby's grandmother previously breastfed, she can share her experience and knowledge and can support a mother through any challenges with breastfeeding.<sup>169</sup> Conversely, if a baby's grandmother did not breastfeed, she may try to discourage it or suggest formula feeding whenever a problem arises.<sup>179</sup> Mothers who breastfeed want their own mothers to be supportive of them and of their decision to breastfeed, regardless of how they fed their own children, and they want them to be knowledgeable about current information on breastfeeding.<sup>169</sup>



In conclusion, knowing about the health risks of not breastfeeding is important for mothers, but knowing how to breastfeed is critical as well. Prenatal classes on breastfeeding are valuable, and mothers should discuss with a variety of other people their interest in breastfeeding. Talking to their clinicians about their intention to breastfeed is important, as is asking about the provisions for breastfeeding or expressing milk where they work. Both the father of the child and the woman's mother may play important roles in the decision to breastfeed. Mothers deserve help with this important decision.

## Communities

A woman's ability to initiate and sustain breastfeeding is influenced by a host of factors, including the community in which she lives.<sup>54</sup> A woman's community has many components, such as public health and other community-based programs, coalitions and organizations, schools and child care centers, businesses

and industry, and the media. The extent to which each of these entities supports or discourages breastfeeding can be crucial to a mother's success in breastfeeding.

Although the USDA's WIC program has always encouraged breastfeeding, federal regulations enacted as part of the 2009 appropriations for the program contain robust provisions that expand the scope of WIC's activities to encourage and support its participants in breastfeeding.<sup>180</sup> Federal regulations specify the actions that state agencies must take to ensure 1) a sustainable infrastructure for breastfeeding activities; 2) the prioritization of breastfeeding mothers and children in the WIC certification process; 3) activities to support education in nutrition for breastfeeding mothers, including peer support; and 4) allowances for using program funds to carry out activities that improve support for breastfeeding among WIC participants. WIC has begun a nationwide training program for all local agencies called Using Loving Support to Grow and Glow in WIC: Breastfeeding Training for Local WIC Staff to ensure that all WIC staff can promote and support breastfeeding.<sup>181</sup>

Exclusive breastfeeding is rewarded in the WIC program in multiple ways, including offering a food package with a higher monetary value for breastfeeding participants than for participants who do not breastfeed or who do so only partially. In 2009, a variety of items, including larger amounts of fruits and vegetables, was added to the food package for women who breastfeed



to provide enhanced support for them. Additionally, the new food package provided higher quantities of complementary foods to be given to breastfed babies who are at least six months old. Before their babies are born, WIC clients receive education and counseling about breastfeeding and are followed up soon after the birth. Many breastfeeding mothers in WIC receive breast pumps and other items to support the continuation of breastfeeding. The USDA uses a social marketing approach to encourage and support breastfeeding that began with the campaign *Loving Support Makes Breastfeeding Work*,<sup>182</sup> as well as a research-based, culturally sensitive set of social marketing resources known as *Breastfeeding: A Magical Bond of Love*, which is specifically for Hispanic participants.<sup>183</sup>

Clinicians are another important source of education and support for breastfeeding. When a mother is discharged from a maternity facility after childbirth, she may need continued breastfeeding support, not only from her family but also from professionals affiliated with the maternity facility. Professional post-discharge breastfeeding support of mothers can take many forms, including planned follow-up visits at the maternity facility, telephone follow-ups initiated by the maternity facility, referrals to community-based support groups and organizations, and home visits. The Affordable Care Act passed in 2010 includes a provision to expand home visitation programs for pregnant women and children from birth through kindergarten entry.<sup>184</sup> This funding has the potential to greatly improve follow-up breastfeeding care for low-income families if breastfeeding is adequately incorporated into the programs.

Posting information on Web sites, providing online support, and having breastfeeding “warmlines” and hotlines that mothers can call whenever they need help or to ask specific breastfeeding-related questions are additional ways that mothers typically find help postpartum.<sup>10,185,186</sup> To be most effective, however, postpartum support needs to be a comprehensive strategy designed to help women overcome challenges in sustaining exclusive, continued breastfeeding.<sup>10,148,187,188</sup>

The provision of peer support is another method that has been shown to improve breastfeeding practices.<sup>173,174,189–191</sup> Peer support can be given in structured, organized programs, or it can be offered informally by one mother to another. Peer counselors are mothers who have personal experience with breastfeeding and are trained to provide counseling about and assistance with breastfeeding to other mothers with whom they share various characteristics, such as language, race/ethnicity, and socioeconomic status. They reinforce breastfeeding recommendations in a socially and culturally appropriate context. Peer counselors may be effective in part because they are seen as role models<sup>192</sup> and also because they often provide assistance through phone calls or home visits.<sup>173</sup>

Peer-counseling programs that provide breastfeeding support for low-income women who are enrolled in or eligible for WIC have been found to be effective at both agency and individual levels in improving breastfeeding rates.<sup>193</sup> For example, using peer counselors for prenatal WIC participants increased the agency’s enrollment of breastfeeding postpartum women.<sup>172</sup> Individually, a breastfeeding support program that included peer counseling increased breastfeeding initiation among WIC participants in Michigan by about 27 percentage points and the duration of

breastfeeding by more than three weeks.<sup>171</sup> Hispanic immigrant mothers in Houston who were eligible for WIC and who received breastfeeding support from peer counselors were nearly twice as likely as nonparticipants to be exclusively breastfeeding at four weeks postpartum, and they were significantly less likely to supplement breast milk feedings with water or tea.<sup>194</sup> Several investigations of peer counseling have identified the prenatal period as particularly important for establishing relationships between peer counselors and WIC participants. Results of these studies indicate that counseling during this period allows peer counselors to proactively address participants' questions and concerns about breastfeeding and enables both the counselor and the mother to prepare for support that will be provided in the early postpartum days.<sup>172</sup>

Peer support also can be given through volunteer community-based groups and organizations, such as La Leche League ([www.llli.org](http://www.llli.org)) and other nursing mothers' support groups. In addition, newer community organizations are emerging, such as the African-American Breastfeeding Alliance, the Black Mothers' Breastfeeding Association ([www.blackmothersbreastfeeding.org](http://www.blackmothersbreastfeeding.org)), and Mocha Moms ([www.mochamoms.org](http://www.mochamoms.org)). Beyond advocating for community support for breastfeeding, these organizations and groups provide peer support focused on women of color and provide culturally tailored breastfeeding support that may not be available or sought after from other support groups. These new groups and organizations, however, may have limited membership rolls and thus very small budgets. Financial assistance from foundations and government may be needed early on to firmly establish and support these organizations, which strive to meet the needs of communities that are typically underserved in terms of health and social services.

In a review of 34 trials that included more than 29,000 mother-infant pairs across 14 countries, professional and lay support together were found to increase the duration of any breastfeeding, as well as the duration of exclusive breastfeeding.<sup>189</sup> For women who received both forms of support, the risk of breastfeeding cessation was significantly lower at six weeks and at two months than it was among those who received the usual care. Exclusive breastfeeding was significantly extended when counselors were trained using a program sponsored by WHO and UNICEF.<sup>189</sup>

Marketing of infant formula within communities is another negative influence on breastfeeding. The WHO *International Code of Marketing of Breast-milk Substitutes* declares that substitutes for breast milk should not be marketed in ways that can interfere with breastfeeding.<sup>35</sup> Yet formula is marketed directly to the consumer through television commercials and print advertisements and indirectly through logo-bearing calendars, pens, and other materials in hospitals or doctors' offices. Formula also is marketed through the distribution of gift packs at discharge that contain samples of formula or coupons, often in bags with a manufacturer's name or logo.

Research indicates that the marketing of substitutes for breast milk has a negative effect on breastfeeding practices. For example, advertising infant formula in doctors' offices that women visit before their babies are born lowers the rate of breastfeeding among these women.<sup>195</sup> In the immediate postpartum period, such as in the hospital after childbirth, the marketing of infant formula can deter exclusive breastfeeding<sup>196</sup> and may have an even stronger effect among women who do not have well-defined goals for breastfeeding.<sup>197</sup> In addition, women who receive

commercial discharge packs that include formula are less likely to be breastfeeding exclusively at 10 weeks postpartum than are women who do not receive them.<sup>149</sup> A Cochrane review concluded that women who received discharge packs were less likely to be exclusively breastfeeding at any time postpartum than women who did not receive a discharge pack.<sup>198</sup>

Some of the marketing strategies used by infant formula companies may require review to ensure they are truthful and that they are not detrimental to breastfeeding. For example, in December 2009, a federal court upheld a \$13.5 million jury verdict against manufacturer Mead Johnson & Co. for false and misleading advertising; the court permanently barred Mead Johnson from claiming that its Enfamil LIPIL infant formula would give babies better visual and brain development than ingredients in store-brand formula.<sup>199</sup> In 2006, the GAO found that manufacturers of infant formula had violated the USDA Food and Nutrition Service rules by using the WIC logo and acronym in advertising formula.<sup>87</sup> Voluntary adherence by formula manufacturers to recommended guidelines on formula marketing may not be effective or consistent throughout the industry, and thus formal guidelines and monitoring may be necessary to ensure that policies and procedures are followed.

In recent years, advertising and social marketing have been used more frequently to promote and support breastfeeding. The USDA national breastfeeding promotion campaign mentioned earlier, *Loving Support Makes Breastfeeding Work*, was launched in 1997 to promote breastfeeding to WIC participants and their families by using social marketing techniques, including mass media and educational materials, and through staff training. The goals of the campaign are to encourage WIC participants to initiate and continue breastfeeding, to increase referrals to WIC for support for breastfeeding through community outreach, to increase the public's acceptance and support of breastfeeding, and to provide technical assistance to state and local WIC staff who are promoting and supporting breastfeeding.

This campaign emphasizes the concept that the support of family and friends, the health care system, and the community are all essential for a breastfeeding mother to be successful.<sup>182</sup> An evaluation in 1997 of the campaign's effects in Iowa demonstrated an increase in initiation of breastfeeding from 57.8 percent at baseline to 65.1 percent one



year after implementation of the campaign. The percentage of mothers continuing to breastfeed at six months postpartum also increased, from 20.4 percent at baseline to 32.2 percent one year after the campaign was implemented.<sup>200</sup> Campaign materials continue to be available.

In 2004, the HHS/OWH and the Advertising Council launched a national campaign encouraging first-time mothers to breastfeed exclusively for six months. The tagline of the two-year campaign was “Babies were born to be breastfed.”<sup>201</sup> The campaign focused on research showing that babies who are breastfed exclusively for six months are less likely to develop certain illnesses or to become obese than babies who are not breastfed, and it consistently emphasized the importance of exclusive breastfeeding for six months. Awareness of the breastfeeding campaign increased from 28 percent to 38 percent a year after it was started.<sup>201</sup> Additionally, the percentage of those sampled who agreed that babies should be exclusively breastfed for six months increased from 53 percent before the campaign to 62 percent one year after the campaign was implemented.<sup>201</sup>

As the 2004–2006 national breastfeeding awareness campaign demonstrated, people seek and find health information from a variety of sources. Evidence points to increasing reliance on the Internet for health information, particularly among those aged 18–49 years. In a report of findings from the 2008 Pew Internet and American Life Project Survey of more than 2,000 adults, when asked what sources they turned to for health or medical information, 86 percent reported asking a health professional, such as a physician, 68 percent asked a friend or family member, and 57 percent said they used the Internet.<sup>202</sup> Social networking sites, such as Facebook and MySpace, appear to be less likely sources for gathering or sharing actual health information; instead, they serve as tools to help users refine the health questions they ask their clinicians.<sup>202</sup> To date, most educational outreach on breastfeeding has been conducted interpersonally, on a face-to-face basis, sometimes with a videotape included as part of the instruction. As more people become regular users of various types of electronic communication such as social networking sites and mobile messaging, new strategies will be needed for conducting outreach and for communicating health information to families.

In summary, a woman’s ability to initiate and continue breastfeeding is influenced by a host of community-based factors. Family members, such as fathers and babies’ grandmothers, are important parts of a mother’s life. It may be important for community-based groups to include them in education and support programs for breastfeeding. Postpartum support from maternity facilities is an important part of helping mothers to continue breastfeeding after discharge. Community-based support groups, organizations, and programs, as well as the efforts of peer counselors, expand on the support that women obtain in the hospital and provide a continuity of care that can help extend the duration of breastfeeding.

In addition, public health efforts such as the 2004–2006 national breastfeeding awareness campaign may influence women to initiate and continue breastfeeding by helping to improve their knowledge and understanding of the reduced health risks and other positive outcomes associated with breastfeeding. The sources from which these messages are communicated, however, may need to evolve as more people use Web-based technologies to search for health and other types of information. In summary, a multifaceted approach to promoting and supporting breastfeeding is needed at the community level.

## Health Care

The U.S. Preventive Services Task Force (USPSTF) specifically recommends that promotion and support for breastfeeding be provided throughout the encounters women have with health professionals during prenatal and postpartum care, as well as during their infants' medical care.<sup>168</sup> In addition, education and counseling on breastfeeding are unanimously recognized by the AAP and the American College of Obstetricians and Gynecologists in their *Guidelines for Perinatal Care*<sup>203</sup> as a necessary part of prenatal and pediatric care. Similarly, the American Academy of Family Physicians<sup>27</sup> and the American College of Nurse-Midwives<sup>29</sup> call for the consistent provision of breastfeeding education and counseling services. Yet many clinicians are not adequately prepared to support mothers who wish to breastfeed.

The USPSTF<sup>168</sup> concluded that promotion and support of breastfeeding are likely to be most effective when integrated into systems of care that include training of clinicians and other health team members, policy development, and support from senior leadership. Moreover, the task force noted that many successful multicomponent programs that support pregnant women and mothers of young children include the provision of lay support or referral to community-based organizations. The task force also noted that breastfeeding interventions, like all other health care interventions designed to encourage healthy behaviors, should strive to empower individuals to make informed choices supported by the best available evidence. As with interventions to achieve a healthy weight or to quit smoking, the task force calls for breastfeeding interventions to be designed and implemented in ways that do not make women feel guilty when they make an informed choice not to breastfeed.

In the United States, the majority of pregnant women plan to breastfeed,<sup>166</sup> and yet there is a clear gap between the proportion of women who prenatally intend to breastfeed and those who actually do so by the time they are discharged after a brief hospital stay.<sup>166,204</sup> The experiences that mothers and infants have as patients during the maternity stay shape the infant's feeding behaviors;<sup>161</sup> however, the quality of prenatal, postpartum, and pediatric medical care in the United States has been inconsistent.<sup>152,205</sup> Mothers' experiences as they receive this care have an influence on their intention to breastfeed,<sup>206</sup> the biologic establishment of lactation,<sup>144</sup> and breastfeeding duration.<sup>207</sup>

Nearly all births in the United States occur in hospital settings,<sup>159</sup> but hospital practices and policies in maternity settings can undermine



maternal and infant health by creating barriers to supporting a mother's decision to breastfeed. National data from the ongoing CDC survey of Maternity Practices in Infant Nutrition and Care (mPINC), which assesses breastfeeding-related maternity practices in hospitals and birth centers across the United States, indicate that barriers to breastfeeding are widespread during labor, delivery, and postpartum care, as well as in hospital discharge planning.<sup>208</sup> Results of the 2007 mPINC survey showed that, on average, U.S. hospitals scored only 63 out of a possible 100 points on an overall measure of breastfeeding-related maternity care.<sup>208</sup> Furthermore, geographic disparities in care<sup>52</sup> correspond closely with the geographic patterns of state-level breastfeeding,<sup>41</sup> highlighting the southern United States as particularly in need of improvement in the quality of routine maternity care.

Examples of barriers to breastfeeding include placement of the stable, healthy, full-term newborn on an infant warmer immediately upon delivery rather than skin-to-skin with the mother,<sup>64</sup> provision of infant formula or water to breastfed newborns without medical indication,<sup>44</sup> removal of the newborn from the mother's room at night,<sup>209</sup> inadequate assurance of post-discharge follow-up for lactation support,<sup>10</sup> and provision of promotional samples of infant formula from manufacturers.<sup>149</sup> Many studies have shown that practices such as these are associated with a shorter duration of breastfeeding.<sup>152,210</sup>

A set of maternity care practices has been identified that, when implemented together,<sup>148,211,212</sup> results in better breastfeeding outcomes.<sup>152,213–216</sup> The Baby-Friendly Hospital Initiative<sup>217</sup> established by WHO and UNICEF in 1991 includes these maternity practices, which are known as the Ten Steps to Successful Breastfeeding. The Joint Commission, an organization that accredits and certifies health care organizations and programs in the United States, has identified the concept of bundles of care such as those in the Ten Steps to Successful Breastfeeding as a promising strategy to improve the care provided to patients.<sup>218</sup> In addition, researchers in California have found that disparities in in-hospital rates of exclusive breastfeeding are not found in hospitals that have implemented the policies and practices of the Baby-Friendly Hospital Initiative, while the opposite is true in hospitals that are in the same geographic region but are not designated as Baby-Friendly.<sup>204</sup>

Upon discharge from the hospital, mothers may have no means of identifying or obtaining the skilled support needed to address their concerns about lactation and breastfeeding; further, there may be barriers to reimbursement for needed lactation care and services.<sup>219</sup> In addition, limited communication between clinicians across health care settings<sup>220</sup> and between clinicians and mothers also may make mothers less likely to comply with recommended postpartum health care visits than they were during the prenatal period.<sup>205</sup>

Increased recognition of the responsibility that clinicians have to encourage and support breastfeeding<sup>25</sup> has led to the development of initiatives to improve continuity of care and support for breastfeeding. The AAP's Safe and Healthy Beginnings program provides a framework for continuity of care from the prenatal period through childbirth to the postpartum period and beyond, and it includes standards of care to prevent breastfeeding problems and hyperbilirubinemia.<sup>205,222</sup> In various communities, the health care system has successfully

coordinated with community networks to provide breastfeeding support to ensure that mothers have access to breastfeeding assistance after they return home. An important part of this assistance is having access to trained individuals who have established relationships with members of the health care community,<sup>223</sup> are flexible enough to meet mothers' needs outside of traditional work hours and locations,<sup>224</sup> and provide consistent information.<sup>225</sup>

### The Ten Steps to Successful Breastfeeding

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in 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, even if they are separated from their infants.
6. Give newborn infants no food or drink other than breastmilk, unless *medically* indicated.
7. Practice “rooming in”—allow mothers and infants to remain together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no pacifiers or artificial nipples to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

—Baby-Friendly USA<sup>221</sup>

For any kind of health service, adequate education and training are essential. Even so, a study of obstetricians' attitudes, practices, and recommendations<sup>206</sup> found that although 86 percent of clinicians reported having prenatal discussions about infant feeding, and 80 percent of them recommended breastfeeding, nearly 75 percent admitted they had either inadequate or no training in how to appropriately educate mothers about breastfeeding. The information on breastfeeding included in medical texts is often incomplete, inconsistent, and inaccurate.<sup>226</sup> In addition, although formative research has revealed that hospital management recognizes the public health importance of breastfeeding and agrees that it is the optimal nutrition for most infants, management is largely unaware of the specific characteristics of supportive breastfeeding care. Despite recognizing the demand for evidence-based health care, many hospital executives are unable to accurately identify which current routine maternity practices are evidence based.<sup>226</sup>

Notwithstanding the widespread recognition of the need for health care professionals to provide education and counseling on breastfeeding to their patients, both education and counseling are often inadequate or inappropriate. Interestingly, Taveras and colleagues<sup>161</sup> found that clinicians' perceptions of the counseling they provided on breastfeeding did not match their patients' perceptions of the counseling received. By linking clinicians' and patients' reports on the counseling, they found that among mothers whose prenatal clinicians stated they always or usually discussed breastfeeding with their patients, only 16 percent of mothers indicated that breastfeeding had been discussed during their prenatal visits. Further, among mothers whose pediatric clinicians reported routine counseling on breastfeeding, only 25 percent of mothers indicated receipt of such counseling.

International Board Certified Lactation Consultants (IBCLCs) are health care professionals who specialize in the clinical management of breastfeeding. The only health care professionals certified in lactation management, they carry certification by the International Board of Lactation Consultant Examiners (IBLCE). Like all other U.S. certification boards for health care professionals, the IBLCE operates under the direction of the U.S. National Commission for Certifying Agencies and maintains rigorous professional standards. IBCLC candidates must demonstrate sufficient academic preparation as well as experience in supervised, direct consultation on breastfeeding to be eligible to take the certification exam.<sup>227</sup>

Upon certification, IBCLCs work in inpatient, ambulatory, and community care settings. IBCLC certification helps ensure a consistent level of empirical knowledge, clinical experience, and professional expertise in the clinical management of complex lactation issues. Evidence indicates that, on discharge, rates of exclusive breastfeeding and of any breastfeeding are higher among women who have delivered their babies in hospitals with IBCLCs on staff than in those without these professionals.<sup>228,229</sup> Further, employment of IBCLCs in neonatal intensive care units increases the percentage of a particularly vulnerable infant population—those born at other facilities and transferred to neonatal intensive care units—who leave the hospital receiving human milk.<sup>230</sup>

Ample evidence of the need for support from IBCLCs has not yet translated, however, to comprehensive availability of their care. A major barrier to availability is the lack of third-party reimbursement. Not surprisingly, availability varies widely across the United States, with nearly 10 IBCLCs per 1,000 live births in Vermont and only 0.83 per 1,000 live births in Nevada.<sup>231</sup> Data from Mannel and Mannel<sup>232</sup> indicate a need for approximately 8.6 IBCLCs per 1,000 live births, an estimate that accounts for prenatal education on breastfeeding, inpatient support during the maternity stay, outpatient follow-up after discharge, telephone follow-up, and program development and administration. In most states, there currently are not enough IBCLCs to meet the needs of breastfeeding mother-infant pairs.<sup>231–233</sup>

In 2006, an estimated 12.8 percent of all U.S. births were preterm (less than 37 completed weeks of gestation), and 8.3 percent of infants had a low birth weight (less than 2,500 grams).<sup>234</sup> In many cases, mothers of these babies initially have difficulty producing enough milk to meet their infants' immunologic and nutritional needs.<sup>235,236</sup> However, use of infant formula introduces multiple health risks,<sup>2</sup> such as NEC, in addition to the inherent health risks of prematurity and low birth weight.<sup>234</sup> Formula feeding appears to be a risk factor for NEC, and the use of donor milk (milk donated by lactating women for infants other than their own) may have the potential to prevent some cases of NEC.<sup>237–241</sup> Approximately 12 percent of preterm infants weighing less than 1,500 grams will suffer from NEC infection.<sup>242</sup> Early mortality in surgical cases is nearly 50 percent, making it the most common cause of death among neonates requiring gastrointestinal surgery.<sup>243</sup> Hospitalization for all surgical NEC averages 62 days, at a cost of nearly \$300,000 per patient.<sup>244</sup> Researchers estimate that across the United States, NEC treatment costs account for 19 percent of all initial newborn health care costs.<sup>245</sup> Human milk is vital to the survival of vulnerable neonates and plays an important role in addressing the substantial burden imposed by NEC on affected families and in reducing health care costs associated with NEC.<sup>246</sup>

Donor milk banks collect, pasteurize, store, and distribute the human milk that has been donated. Currently, 12 donor milk banks operate across the United States and Canada; 11 are nonprofit<sup>247</sup> and 1 is commercial (Prolacta Bioscience, Inc., Monrovia, CA). Milk banking poses numerous challenges because of the necessity of ensuring that donor milk is both safe and nutritionally sound. Breast milk is a means of viral transmission, and thus it is essential that donors are screened for significant viral diseases, such as HIV, human T-cell leukemia virus, and hepatitis C. Pathogens can also be introduced during collection, transportation, or processing. Although heat treatment can destroy most infectious pathogens in milk, excessive heat will destroy some of the nutritional components of the milk as well.<sup>248</sup>

The Human Milk Banking Association of North America (HMBANA) has developed guidelines for its member milk banks to address some of these challenges and has set standards for health history screening; for serum screening; and for milk collection, processing, pasteurization, storage, and dispensing.<sup>249</sup> Although HMBANA requires that its members adhere to these guidelines as a condition of membership, they are not enforced by the FDA. Informal mechanisms for sharing of donor human milk through newspaper or Internet sites have also arisen, but these pose significant risks because of the inability to screen the donor and ensure that the milk has not been infected, diluted, or contaminated.

In 2008, the 11 nonprofit milk banks distributed 1.4 million ounces of milk to hospitals. However, to meet the needs of just the infants born weighing less than 1,500 grams, an estimated 9 million ounces would be required.<sup>250</sup> Barriers to having more donor milk available include lack of knowledge among clinicians, confusion on the part of payers, and ambivalence in public health policy about the role of banking donor milk.<sup>251</sup> In the United States, there is no federal infrastructure to regulate the screening, collection, storage, and distribution of donor milk. The lack of a proactive federal policy on donor milk has contributed to a lack of clarity in policies that affect its banking and in the regulatory responsibilities for state versus federal agencies.<sup>252</sup>

In summary, most women plan to breastfeed, but the policies and practices of the institution where they give birth may undermine their intentions. The Ten Steps to Successful Breastfeeding is a standard for hospital performance. Once discharged, mothers may find that the health care system is not supportive. The support of health care professionals is particularly important at this time; unfortunately, many health professionals have had inadequate education and training in breastfeeding. IBCLCs are an excellent source of assistance for breastfeeding mothers.



## Employment

The percentage of women in the U.S. workforce has increased dramatically over the last century, particularly in the last 50 years. In 2004, more than 70 percent of women of childbearing age (20–44 years) were in the civilian labor force.<sup>253</sup> An estimated 67 percent of mothers who had their first child in 2001–2003 worked during their pregnancy, mostly on a full-time basis.<sup>254</sup> In 2009, 50.1 percent of all mothers with children younger than 12 months were employed, and 69 percent of those employed worked full-time (35 or more hours per week).<sup>170</sup>

In 2001, child care arrangements for infants were such that 26 percent of nine-month-old infants were regularly cared for by relatives, 15 percent were cared for by a nonrelative in either their own or another family's home, and 9 percent were in center-based care.<sup>255</sup> By percentage, more black than white infants were in center-based care.<sup>255</sup> The Child Care and Development Fund helps low-income families obtain child care so they can work or attend training or education. Among infants served by this program, 49 percent were in center-based care.<sup>256</sup>

Among employed mothers, studies have found lower initiation rates<sup>257–259</sup> and shorter duration of breastfeeding.<sup>58,138,257,258,260–265</sup> Rates of breastfeeding initiation and duration are higher in women who have longer maternity leave,<sup>58,140,257,258,260–265</sup> work part-time rather than full-time,<sup>138,259,260,263,264,266</sup> and have breastfeeding support programs in the workplace.<sup>50,267,268</sup>

Because most lactating mothers who are employed express milk at work for a child care provider to bottle feed to the infant later,<sup>42</sup> these providers are essential in helping employed mothers continue to breastfeed after returning to work. However, a mother feeding her infant directly from the breast during the workday is the most effective strategy of combining employment and breastfeeding because it promotes the duration and intensity of breastfeeding<sup>49</sup> and strengthens the relationship between mother and infant in the critical first months of life. The skin-to-skin closeness that occurs during breastfeeding promotes bonding and attachment between mother and infant, increases the efficiency of breastfeeding, and enhances the neurological and psychosocial development of the infant.<sup>269,270</sup>

Currently, among 173 countries, the United States is one of only four without a national policy requiring paid maternity leave (the others are Swaziland, Liberia, and Papua New Guinea).<sup>271</sup> The Family and Medical Leave Act of 1993 generally provides for up to 12 weeks of unpaid, job-protected maternity leave, but unpaid leave is not feasible for many low-income families. The International Labor Organization (ILO) recommends a minimum of 18 weeks of paid maternity leave.<sup>272</sup> In the European Union (EU), 13 member countries meet this minimum, and the EU has proposed that all members adopt the minimum of 18 weeks with full pay, although it makes a provision for a ceiling on pay.<sup>273</sup> The European Commission, which presents proposals for European law, recommends that full earnings be paid but allows for an upper limit on the amount paid, while the ILO recommends that the full wage be paid.<sup>272</sup> Canada provides 50 weeks of partially paid maternity and parental leave.<sup>274</sup>



In 2009, approximately 14 percent of U.S. employers offered paid maternity leave beyond short-term disability benefits.<sup>132</sup> Although relatively few workers have this benefit, economic disparities exist even within this group. Higher income workers are more likely than low-income workers to have a paid maternity leave benefit; the U.S. Department of Labor estimates that of those with an average wage of more than \$15 per hour, 11 percent have paid leave, compared with just 5 percent of those making less than \$15 per hour. Additionally, some employment sectors are more likely to have paid maternity leave than others. Studies estimate that 14 percent of management, professional, and

similar workers have a paid family leave benefit, while only 5 percent of service, 9 percent of sales and office, and 4 percent of industrial workers have it.<sup>275</sup>

As of March 2010, five states had laws that ensure some level of paid maternity leave (California, Hawaii, New Jersey, New York, and Rhode Island).<sup>276</sup> More workers in these states are covered by laws ensuring paid maternity leave than are covered by the Family and Medical Leave Act; these laws could serve as a model for national programs that include lower-income workers. Two of these states cover all female workers, two cover all workers who participate in the state unemployment and disability insurance program, and one covers all women in the private sector. Two other states, Minnesota and New Mexico, have at-home infant care programs that fund low-income parents to stay home with their infants.<sup>277</sup> In the United States, those states that have some form of maternity leave usually cover only part of the wage and have an upper limit on the benefit.<sup>58,278</sup> Criteria for eligibility that are based on the number of employees, hours of work per week, or duration of employment effectively exclude large percentages of low-wage workers and women who are leaving welfare to work. Low-income families have fewer resources than middle-class families, and providing fully paid maternity leave might increase all employees' ability to take such leave, irrespective of income.

Various models and guidelines exist for implementing support for lactation and direct breastfeeding in the workplace. One example is the comprehensive resource kit, *The Business Case for Breastfeeding: Steps for Creating a Breastfeeding Friendly Worksite: Bottom Line Benefits*, which was developed by the Health Resources and Services Administration (HRSA).<sup>279</sup> The kit includes booklets for business and human resource managers, an employee's guide to breastfeeding and working, reproducible resources, and a CD-ROM.<sup>279</sup> Program components outlined in the kit include flexible breaks and work schedules, a sanitary and private place to express milk, education for pregnant and lactating women, and support from supervisors and coworkers.

In 2010, the Affordable Care Act included a provision requiring employers to provide workplace accommodations that enable employees who are breastfeeding to express their milk. Specifically, Section 4207 of the Affordable Care Act amends the Fair Labor Standards Act of 1938 by requiring employers to provide reasonable, though unpaid, break time for a mother to express milk and a place, other than a restroom, that is private and clean where she can express her milk.<sup>184</sup>

Given that 26 percent of mothers employed full-time in 2003 were breastfeeding when their infant was aged six months,<sup>264</sup> it is clear that a substantial percentage of U.S. mothers manage to combine breastfeeding and paid work. However, U.S. mothers overall have less support for continuing to breastfeed after returning to work than is recommended by the ILO. The ILO recommends that provision be made for a place to breastfeed under hygienic conditions at or near the workplace and that the frequency and length of nursing breaks be adapted to particular needs.<sup>272</sup> Legislation in EU countries generally meets the ILO standards.<sup>280</sup> In 2009, 15 U.S. states required that employers support breastfeeding employees when they return to work.<sup>231</sup> An employee benefits survey conducted in 2009 in the United States indicated that 25 percent of employers have on-site lactation rooms, with smaller businesses least likely to have these rooms.<sup>132</sup>

In 2008, 31 percent of employed mothers with infants worked part-time (34 or fewer hours per week),<sup>254</sup> suggesting that many mothers are using part-time employment to help them balance work and family needs. The 2005–2007 Infant Feeding Practices Study II found that among mothers who worked and breastfed, 32 percent kept the infant at work and breastfed during the workday, 8 percent went to the infant to breastfeed, and 3 percent had the baby brought to them at the work site in order to breastfeed.<sup>49</sup>

Breastfeeding mothers with out-of-home arrangements for child care need the cooperation and support of the child care provider in order to continue breastfeeding. These mothers represent a very large number of women, as approximately half of infants of working mothers are in out-of-home child care.<sup>255</sup> The current national guidelines on out-of-home child care from the National Resource Center for Health and Safety in Child Care and Early Education,<sup>281</sup> which are supported by HRSA, are under revision and will be released in a third edition in 2011. Meanwhile, selected standards from the new third edition have been published online and provide information about how child care providers should support breastfeeding mothers and families.<sup>282</sup> The new guidelines recommend that those who provide child care should encourage, make arrangements for, and support breastfeeding families, such as by providing a space for a mother to breastfeed or express milk for her child. Additionally, the new guidelines include information about preparing, storing, and handling expressed human milk, as well as the importance of feeding all children on cue rather than on a schedule.<sup>282</sup>

However, the 2002 guidelines still have not been implemented in all states,<sup>283</sup> and in some states, child care homes that serve small numbers of children are not covered by the guidelines. Furthermore, some states, such as Colorado and Wisconsin, have developed their own guidelines and training materials for child care providers with respect to breastfed infants.<sup>284–286</sup> A recent

study in Colorado found that providers of child care scored low on a test of proper procedures for storing and feeding breast milk but that they were interested in receiving information or training about infant feeding.<sup>287</sup>

In conclusion, employment is now the norm for U.S. women of childbearing age. Employed women currently are less likely to initiate breastfeeding, and they tend to breastfeed for a shorter length of time than women who are not employed. Most employed mothers who are lactating must express milk at work for their children and should be provided with accommodations to do so. However, directly breastfeeding a child during the workday offers additional opportunities for mother-child bonding and helps to sustain the exclusivity and duration of breastfeeding.<sup>42</sup> Mothers should have a hygienic area in or near their workplace to breastfeed, and their breaks for nursing should be adapted to their particular needs. Further, child care providers need to support mothers who wish to breastfeed.

## Research and Surveillance

Although there is a body of research on breastfeeding and some national monitoring is in place to track trends, significant knowledge gaps are evident.<sup>2,288–291</sup> These gaps must be filled to ensure that accurate, evidence-based information is available to parents, health clinicians, public health programs, and policy makers. New studies can provide insight into questions, such as how to 1) reduce disparities in breastfeeding rates that are associated with race/ethnicity, income, and preterm birth; 2) identify the comprehensive cost savings for parents, insurers, and the government that result from breastfeeding; and 3) develop best practices for management and support of lactation and breastfeeding. Expanded surveillance of breastfeeding would provide a more timely and representative understanding of patterns of breastfeeding in this country and of areas that could be prioritized to improve support for breastfeeding.

Paradoxically, rates of breastfeeding are not optimal among those most likely to benefit from it. For example, breastfeeding rates are particularly low among low-income women,<sup>41</sup> and yet the health benefits that accrue from breastfeeding are especially important for women with low incomes and their families, as they already suffer a higher burden of illness and are the least able to pay for health services or afford time away from work because of illness. Because of their increased susceptibility to life-threatening illnesses, human milk also is particularly beneficial to preterm infants. In 2006, 12.8 percent of live births were preterm.<sup>234</sup> Mothers who give birth preterm often face challenges with breastfeeding, and rates of breastfeeding are lower among preterm infants compared with full-term infants.<sup>292</sup> New research is needed to identify barriers to and supports for breastfeeding among populations with low rates of breastfeeding. Evidence-based findings could lead to the implementation of improved strategies that could result in higher breastfeeding rates and have a major impact on public health.

In addition to improving knowledge about ways to increase breastfeeding rates, research on the economic benefits accrued from high rates of continued breastfeeding and, conversely, the costs of low rates of breastfeeding is needed to understand the financial impact of breastfeeding. Although

previous research found significant cost savings associated with breastfeeding,<sup>20,23,24</sup> current and comprehensive economic studies that more precisely estimate the complete cost-benefit ratio of breastfeeding and related activities are critical to inform policy making.

Despite overwhelming evidence of the reduced health risks associated with breastfeeding and consuming breast milk, there are still gaps in our knowledge regarding management and support for lactation and breastfeeding under both typical and special circumstances. Identification of evidence-based best practices would provide essential insights for programs that promote breastfeeding and enhance the acceptance of these programs by clinicians and the public at large.

Challenges exist in conducting studies on breastfeeding. For instance, researchers often have to rely on retrospective information provided by a mother when asking her to recall details about her previous breastfeeding experiences and practices. In addition, the absence of uniform definitions for such terms as “breastfeeding” and “exclusive breastfeeding” has rendered generalization across studies difficult.<sup>2</sup> Both increasing the validity of measures and standardizing the terminology are necessary to improve the accuracy and interpretation of research findings. Another concern is that there may not be enough researchers in the field; enhancing the opportunities for collaboration among researchers and providing new training opportunities for emerging scientists would help ensure the availability of scientific talent to usher in a new era of breastfeeding research.

Increasing the number of scientists properly trained to study breastfeeding could allow both current and new researchers to design and carry out scientifically sound and rigorous studies on breastfeeding topics.<sup>2</sup> Because of ethical considerations, research on the health outcomes of different modes of infant feeding is limited to observational studies, the results of which can only provide inferences on the association between feeding type and outcomes (unlike experimental or randomized controlled trials, which permit assessment of cause and effect). Thus, researchers need to develop innovative study designs that will improve our understanding of the relationships between breastfeeding and various outcomes. For example, women could be randomly assigned to receive an intervention that increases the proportion who exclusively breastfeed their children for six months and continue breastfeeding at least one year.

Health outcomes in those children could be tracked and compared with health outcomes of children who received less breast milk.

At present, several national systems provide data on national breastfeeding rates, but few systems exist to collect data at state and local levels. The NIS<sup>293</sup> provides annual state-



level breastfeeding rates, but its sample is too small to permit interpretation of year-to-year changes for most states. The Pregnancy Risk Assessment Monitoring System allows for the calculation of breastfeeding initiation rates and duration up to 2–4 months, but currently only 31 states participate in this system.<sup>294</sup> Local breastfeeding statistics are generally unavailable except for data from the Pediatric Nutrition Surveillance System, but these data are primarily from WIC participants, and not all states participate.<sup>295</sup> Some information is available through birth certificate data, but only 28 states currently capture initiation of breastfeeding on the birth certificate.<sup>296</sup>

In addition to monitoring breastfeeding rates, it is important to track changes in the policies that affect breastfeeding and how it is supported. The CDC Breastfeeding Report Card<sup>231</sup> reports annually on a handful of breastfeeding-related indicators but is limited in scope. To date, little is known about the extent to which businesses are making accommodations for breastfeeding mothers, whether the United States has an adequate supply of skilled certified lactation consultants for women having difficulties with breastfeeding, or how broadly peer counseling programs are being operated in this country.

Another way that trends in breastfeeding and related indicators are monitored is through the Healthy People initiative.<sup>297</sup>

Healthy People, which provides a framework for health promotion and disease prevention for the nation, is designed to identify the most significant threats to public health and establish national goals to help reduce these threats. The breastfeeding objectives in *Healthy People 2010* were retained in *Healthy People 2020*, but with higher targets. New objectives related to maternity practices, reduction in the early supplementation of breastfed newborns with formula, and worksite lactation support have been added (see Table 3).

In summary, additional research and surveillance are needed on many aspects of breastfeeding in the United States. For example, more research is needed on the barriers to breastfeeding among populations with low rates of breastfeeding. Economic research is also needed on how breastfeeding affects mothers and employers, as is research on best practices for management and support of lactation and breastfeeding. Building capacity for research on breastfeeding should be a priority. Although national surveillance on breastfeeding has improved considerably in the last decade, surveillance at state and local levels is limited.



**Table 3. *Healthy People 2020 Objectives for Breastfeeding***

Objective	Baseline (%)	Target (%)
Increase the proportion of infants who are breastfed (MICH 21)		
Ever	74.0*	81.9
At 6 months	43.5*	60.6
At 1 year	22.7*	34.1
Exclusively through 3 months	33.6*	46.2
Exclusively through 6 months	14.1*	25.5
Increase the proportion of employers that have worksite lactation support programs (MICH 22)	25 <sup>†</sup>	38
Reduce the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life (MICH 23)	24.2*	14.2
Increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies (MICH 24)	2.9 <sup>‡</sup>	8.1

MICH = Maternal, Infant, and Child Health.

\* Source: Centers for Disease Control and Prevention, National Immunization Survey, 2006 data.<sup>41</sup>

<sup>†</sup> Source: Society for Human Resource Management Survey, 2009.<sup>132</sup>

<sup>‡</sup> Source: Centers for Disease Control and Prevention, Breastfeeding Report Card—United States, 2009.<sup>231</sup>

## Public Health Infrastructure

An effective national public health program requires the basic coordination and monitoring of services. Activities to promote and support breastfeeding originate from a wide variety of entities, including federal, state, and local governments; nonprofit organizations; and professional associations. Within the federal government, numerous agencies have developed programs on breastfeeding, and others have programs that affect breastfeeding indirectly. The USDA operates the WIC program, which serves more than half the infants born in the United States. In HHS, several breastfeeding initiatives exist within the Maternal and Child Health Bureau, the National Institutes of Health, CDC, FDA, AHRQ, OWH, and the Indian Health Service. In addition, the U.S. Department of Defense sets standards for accommodating breastfeeding among military personnel.

Although the work of each of these agencies is valuable, no formal structure for coordination of federal breastfeeding initiatives exists to reduce overlap or to identify gaps in current programs. Creation of a federal interagency work group on breastfeeding could help overcome these challenges and improve coordination and collaboration across agencies to improve support for breastfeeding.

The United States Breastfeeding Committee (USBC) ([www.usbreastfeeding.org](http://www.usbreastfeeding.org)) provides a forum for nongovernmental organizations and liaisons from the federal government to collaborate on joint initiatives in support of breastfeeding. The committee was formed in 1995 with the support

of then Assistant Surgeon General Audrey Nora, M.D., M.P.H. The mission of the USBC is to protect, promote, and support breastfeeding in the United States and, thus far, it has taken several steps toward accomplishing this mission. To start, the USBC unveiled *Breastfeeding in the United States: A National Agenda*,<sup>298</sup> which served as the first step in a strategic plan for improving breastfeeding in the United States. Much like this *Call to Action*, the USBC's national agenda recognizes the importance of breastfeeding and sets forth a societal approach to help improve breastfeeding practices.

In addition to writing position statements on breastfeeding, the USBC has been instrumental in bringing important partners together to move forward the breastfeeding agenda. For instance, it held the First National Conference of State Breastfeeding Coalitions in 2006; these important meetings have continued every two years to enable states to network and share successful strategies to improve support for breastfeeding.

All 50 states have now formed breastfeeding coalitions, and there are many local, tribal, and territorial coalitions as well. These coalitions catalyze local and state efforts to promote and support breastfeeding. Although the USBC supports state coalitions with technical assistance, Web-based communications support, and a biannual conference, most of these coalitions are small and unfunded. Additionally, most state health departments have no staff responsible for breastfeeding activities, except within the WIC program. This lack of a state infrastructure makes it difficult to carry out any new breastfeeding programs at the state level.

In summary, many organizations and agencies, both inside and outside the government, are currently working to increase rates of breastfeeding and to support mothers and their infants in a variety of ways. The USBC is a focal point for efforts in this area, and all 50 states have their own breastfeeding coalitions.

## A Call to Action

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Given the importance of breastfeeding for the health and well-being of mothers and children, it is critical that we take action across the country to support breastfeeding. Women who choose to breastfeed face numerous barriers. Only through the support of family members, communities, clinicians, health care systems, and employers will we be able to make breastfeeding become the easy choice, the default choice. This section describes the recommended actions and their associated implementation strategies in detail. A summary of this information is provided in table form in Appendix 1.



## Mothers and Their Families

### Action 1. Give mothers the support they need to breastfeed their babies.

In the United States, women often lack information on breastfeeding, and women who decide to breastfeed their children are frequently not given support. The result is that many mothers see breastfeeding as a goal they cannot achieve for themselves and their babies. Furthermore, many mothers are not aware of the excess risks to babies' and mothers' health associated with not breastfeeding. To achieve their goals for breastfeeding, mothers should seek the information, support, and care they deserve.

#### Implementation Strategies

**Help pregnant women to learn about the importance of breastfeeding for their babies and themselves.** Doctors and midwives are expected to give women accurate and complete information on infant feeding as part of routine prenatal care, but if it is not provided, mothers have the right to ask for it. Mothers can obtain this information from their clinicians to ensure they have the knowledge they need to make the decision about infant feeding that is best for them.

**Teach mothers to breastfeed.** Like many other activities, breastfeeding requires preparation and effort at first. Pregnant women who learn about how to breastfeed are more likely to be successful than those who do not. Women can obtain helpful information about how to breastfeed from classes, books, online resources, and the U.S. Department of Agriculture's Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), as well as from other mothers who have breastfeeding experience.

**Encourage mothers to talk to their maternity care providers about plans to breastfeed.** Every mother and baby deserves maternity care that supports breastfeeding, and to obtain that care, a mother must let her doctor or other health care clinician know she wants to breastfeed. Mothers can discuss with their clinicians the types of care they expect during and after their maternity stay to ensure that care is compatible with breastfeeding.

**Support mothers to have time and flexibility to breastfeed.** To ensure the best and most supportive environment for breastfeeding, mothers can engage in conversations with family, friends, employers, child care providers, and others to ask for and create a plan that will accommodate their ability to continue breastfeeding at home and after returning to work or school. Having help around the house for the first few weeks at home after childbirth will allow a mother and her baby to concentrate on learning how to breastfeed.

**Encourage mothers to ask for help with breastfeeding when needed.** Some early challenges with breastfeeding are normal, while others may be signs of breastfeeding problems. If a mother experiences severe pain or other problems with breastfeeding, asking for help will assist her in achieving her breastfeeding goal. Mothers can ask for help from their doctors or

midwives, lactation consultants, and other mothers with breastfeeding experience. With help from these people, mothers can resolve most breastfeeding problems and go on to enjoy their breastfeeding experiences.

## Action 2. Develop programs to educate fathers and grandmothers about breastfeeding.

A woman's decision to breastfeed is strongly influenced by the beliefs and attitudes of her family and friends. Unfortunately, family and friends may discourage a mother from breastfeeding if it is not accepted within their culture. Often, when a mother is thinking about how to feed her baby, she values the advice of her partner the most, followed by the advice of her mother, family, and friends. In fact, she often values their advice more than the advice of health care professionals.

Partners are particularly important because their approval means so much to a mother, and her partner is often a mother's primary source of support. Although fathers want the best for their family, they may become jealous or resentful or get the feeling that they will not be able to bond with their child if their partner chooses to breastfeed. The baby's grandmothers are also very influential because mothers who have recently given birth rely on them for support and advice. To make breastfeeding successful, mothers need the support and encouragement of all of these people.

### Implementation Strategies

**Launch or establish campaigns for breastfeeding education that target a mother's primary support network, including fathers and grandmothers.** Local campaigns can use print, billboard, radio, and television public service announcements that feature members of a specific population for more effective reach.

**Offer classes on breastfeeding that are convenient for family members to attend.** Educational materials and classes that are directed toward fathers and grandmothers need to be developed to attract and involve this extended support network. To encourage the participation of family and friends, consideration should be given to involving churches, civic organizations, health clubs, community centers, and schools because these venues may be more accessible than health care institutions. Offering classes during a variety of hours and days also may improve participation.



## Communities

### Action 3. Strengthen programs that provide mother-to-mother support and peer counseling.

A mother-to-mother volunteer organization called La Leche League introduced the idea of giving support to breastfeeding women from their peers in the community—in most cases, women who are not health care professionals. Counseling by a woman’s peers has helped to increase the number of women who choose to breastfeed and the length of time they continue with breastfeeding. Success with such counseling has been achieved among economically disadvantaged women and those with diverse cultural backgrounds. Support by a woman’s peers can be provided through telephone calls; visits in the hospital, home, or clinic; group classes; or informal support groups.

#### Implementation Strategies

**Create and maintain a sustainable infrastructure for mother-to-mother support groups and for peer counseling programs in hospitals and community health care settings.**

Hospitals and birth centers have a unique opportunity to ensure that mothers are connected to support systems in the community after they are discharged. With virtually all babies in the United States born in such facilities, this strategy has the potential of broad reach. Hospitals and birth centers can provide these services themselves or collaborate with community health groups to increase mothers’ access to peer support groups or peer counselors.

**Establish peer counseling as a core service available to all women in WIC.** With rates of breastfeeding being consistently lowest among low-income women, the provision of additional support for breastfeeding mothers is especially important in the WIC program. WIC’s existing peer counseling program has proven to be effective, but currently it is not offered in all local WIC agencies.



## Action 4. Use community-based organizations to promote and support breastfeeding.

Organizations that are based in communities and do their work there are aware of the specific barriers that women in their communities face and can identify workable solutions for these women. In most cases, these organizations understand the culture and customs of the residents in the community, as well as their needs and opportunities. Questions and concerns about breastfeeding may be handled by organizations whose primary mission is to promote and support breastfeeding or by other organizations involved in family health.

### Implementation Strategies

**Support and fund small nonprofit organizations that promote breastfeeding in communities of color.** Addressing the socioeconomic, racial, and ethnic inequities in breastfeeding requires focusing on those communities with low rates of breastfeeding. Resources for local organizations that support breastfeeding are extremely limited, making the provision of mother-to-mother support, community advocacy, and outreach efforts difficult. Educational messages, training, tools, and other resources need to reflect local culture, ethnicity, language, and literacy levels.

**Integrate education and support for breastfeeding into public health programs that serve new families.** A variety of people and programs are now operating in communities to meet the needs of new families, including home visitors, community-based doulas (women who help mothers during and after childbirth), advocates for prevention of domestic violence, public health nurses, and early childhood and Healthy Start programs. Assistance with breastfeeding is a natural extension of the other functions these programs provide and contributes to the common goals of improving the health and well-being of families.

**Ensure around-the-clock access to resources that provide assistance with breastfeeding.** Difficulties with breastfeeding can occur at any time of the day or night and on weekends. If mothers are unable to get help when they need it, they can become discouraged and give up on breastfeeding. The use of telephone triage, “warmlines,” hotlines, online networks, and pretested referral patterns in each community can provide the human contacts needed to help mothers work through their breastfeeding problems.

## Action 5. Create a national campaign to promote breastfeeding.

Social marketing is a promising way of ensuring that new generations understand the value of breastfeeding and can make well-informed decisions about infant feeding. Social marketing, unlike traditional marketing, engages members of the community with each other (often through forums or blogs on the Internet). The national educational campaign and the strategies used must be culturally sensitive and appropriate. Developing such a campaign calls for long-term strategies and requires careful planning and a thorough understanding of social marketing.

### Implementation Strategies

**Develop and implement a national public health campaign on breastfeeding that relies heavily on social marketing.** A task force with wide representation should frame the problem, define the audience, determine effective messages, and choose the behaviors to be changed and promoted. To have broad reach, the campaign needs to be well funded and sustained over a prolonged period.

**Use a variety of media venues to reach young women and their families.** While television and print media remain viable avenues for disseminating public health messages, the increasing use of electronic communication channels opens many new possibilities for promoting breastfeeding. Use of these new social media will require that promoters adapt quickly to changing technology and develop new kinds of messages appropriate to these venues.



## Action 6. Ensure that the marketing of infant formula is conducted in a way that minimizes its negative impacts on exclusive breastfeeding.

The *International Code of Marketing of Breast-milk Substitutes* (the Code) establishes rules for the protection of mothers from the influences of false and misleading advertising, including unethical marketing practices of substitutes for breast milk. The Code, developed in concert with manufacturers of infant formula, spells out both appropriate and inappropriate marketing practices. Although its provisions are not legally binding in the United States, various means of encouraging voluntary adherence should be developed.

### Implementation Strategies

**Hold marketers of infant formula accountable for complying with the *International Code of Marketing of Breast-milk Substitutes*.** In particular, the Code precludes advertising directly to consumers and does not allow for distribution of free samples to the public. Until 1990, manufacturers of formula refrained from directly advertising to consumers. Manufacturers could voluntarily return to this practice, and hold themselves accountable through their joint participation in the International Formula Council. Public health entities could help by making information on violations of the Code publicly available.

**Take steps to ensure that claims about formula are truthful and not misleading.** With the proliferation of new kinds of infant formula, a variety of claims are being made about their contents and health benefits. The validity of these claims should be reviewed. Furthermore, research is needed on how consumers perceive the claims being made, whether they think messages are believable, and how these claims affect consumers' behavior. The findings should be used to identify the marketing practices likely to have a negative impact on exclusive breastfeeding.

**Ensure that health care clinicians do not serve as advertisers for infant formula.** The distribution of materials such as free samples, pamphlets, notepads, growth charts, or gifts that bear logos from companies marketing infant formula implicitly endorses formula feeding. Displays of posters, products, or decorations from these companies in a health care professional's office or in a hospital or clinic leave the impression that clinicians favor formula feeding over breastfeeding. Given the health consequences of not breastfeeding, clinicians should not implicitly promote infant formula by providing venues for its advertisement.

## Health Care

### Action 7. Ensure that maternity care practices throughout the United States are fully supportive of breastfeeding.

In the United States, nearly all infants (99 percent) are born in hospital settings, and guidelines based on available evidence have been established to ensure the delivery of appropriate maternity care in these settings. Unfortunately, the evidence-based guidelines for quality maternity care are applied inconsistently. In fact, maternity care practices often reflect clinicians' personal experiences with breastfeeding and may be based on misinformation that interferes with successful breastfeeding. Maternity care of high quality will be delivered to all patients only if standards are consistently applied to every mother and infant.

#### Implementation Strategies

**Accelerate implementation of the Baby-Friendly Hospital Initiative.** In order to help hospitals work together, learn from each other, and share successful strategies to achieve Baby-Friendly designation, public health agencies need to expand their capacity to provide assessment of and technical assistance with Baby-Friendly practices. These strategies include examining the different ways of designating an institution as Baby-Friendly that are used internationally. Creating incentives for participation in the initiative may be helpful.

**Establish transparent, accountable public reporting of maternity care practices in the United States.** The Joint Commission can add the responses of maternity facilities on their Perinatal Care Core Measure set to the Joint Commission Quality Reports and related data reports that the commission provides to facilities to help them improve practices.



**Establish a new advanced certification program for perinatal patient care.** Such a program would recognize facilities for making exceptional efforts to foster better quality of care, improve breastfeeding support, and achieve better health outcomes in maternal and newborn care. Criteria for certification would include following the practices for maternal and newborn care in the Ten Steps to Successful Breastfeeding established by the World Health Organization and the United Nations Children’s Fund. The Joint Commission has existing certification programs, such as its Disease-Specific Care Certification Programs, which could serve as models for perinatal care.

**Establish systems to control the distribution of infant formula in hospitals and ambulatory care facilities.** Control systems for medications are generally used to ensure appropriate preparation, dosing, and administration; to track lot numbers; to monitor expiration dates; and to control inventories. The same procedures could be applied to infant formula use in hospitals and ambulatory care settings to support the safety of infants and to improve quality of care. Failure to monitor infant formula through these procedures leads to overuse of formula and excessive supplementation without medical indications.

## **Action 8. Develop systems to guarantee continuity of skilled support for lactation between hospitals and health care settings in the community.**

Upon discharge from their stay in the hospital, many mothers are unable to find and receive skilled breastfeeding support. Mothers often are left on their own to identify resources to help with questions and problems they may have with breastfeeding. Furthermore, hospitals, clinicians in the community, and community organizations typically lack systems to help connect mothers to skilled persons who can offer support for breastfeeding. Ideally, there would be a system to ensure that breastfeeding mothers and their infants would receive skilled support with lactation from informed and available health care teams. Hospitals, primary care clinicians, and community organizations share responsibility for creating such systems.

### **Implementation Strategies**

**Create comprehensive statewide networks for home- or clinic-based follow-up care to be provided to every newborn in the state.** Follow-up support for breastfeeding needs to be integrated into home visitation and postpartum care programs. Staff training in breastfeeding management would be fundamental to this care.

**Establish partnerships for integrated and continuous follow-up care after discharge from the hospital.** Communities often provide a variety of resources to help breastfeeding mothers, including peer support networks, breastfeeding clinics, lactation consultants, and support groups. Health care systems can ensure that their patients are informed about such resources and can facilitate connections to these resources. They can also help to strengthen or create these programs.

**Establish and implement policies and programs to ensure that participants in WIC have services in place before discharge from the hospital.** Community partners and key stakeholders, such as hospitals, lactation consultants, and other clinicians, can work with WIC to establish continuity of care for WIC participants who breastfeed their infants. In addition, WIC state agencies can collaborate with state hospital associations to identify key barriers to the provision of WIC services within the hospital setting. WIC state agencies and hospitals can partner to establish policies to ensure that WIC participants receive in-hospital education and support for breastfeeding, including identification of a WIC peer counselor and scheduling of follow-up support for breastfeeding by WIC staff in the community.

## **Action 9. Provide education and training in breastfeeding for all health professionals who care for women and children.**

Clinicians are consistently identified by patients as preferred sources of information and guidance on breastfeeding. Therefore, clinicians need to demonstrate competency in supporting lactation and breastfeeding. Inadequate education and training of clinicians has been identified as a major barrier to breastfeeding, and education on breastfeeding is not a core element of most medical school or residency programs or of programs in nursing education. Unfortunately, there are few opportunities for future physicians and nurses to obtain education and training on breastfeeding, and the information on breastfeeding in medical texts is often incomplete, inconsistent, and inaccurate. In addition, breastfeeding mothers and their children have health care needs that are unrelated to lactation, but clinicians should understand the impact their services may have on breastfeeding.



## Implementation Strategies

**Improve the breastfeeding content in undergraduate and graduate education and training for health professionals.** Because preprofessional education and training provide the foundation that supports later clinical practice, quality breastfeeding content is necessary to prepare those who will eventually care for breastfeeding women or their infants. However, even health care professionals whose services are not directly related to breastfeeding often encounter breastfeeding mothers and their children. Therefore, all health care professionals need to ensure that the care they provide is compatible with breastfeeding.

**Establish and incorporate minimum requirements for competency in lactation care into health professional credentialing, licensing, and certification processes.** Competency in lactation care among multiple health professional disciplines and specialties is required to ensure optimal breastfeeding management and support. These disciplines and specialties include but are not limited to physicians, nurses, physician assistants, midwives, lactation consultants, dietitians, social workers, physical therapists, and pharmacists. In addition to developing standards, certifying boards and other professional organizations can ensure competency in lactation care through training, continuing education, exams, and quality improvement programs.

**Increase opportunities for continuing education on the management of lactation to ensure the maintenance of minimum competencies and skills.** Education on breastfeeding can be integrated into related topic areas in continuing education. Flexible, practice-based learning approaches may be especially effective.

### Action 10. Include basic support for breastfeeding as a standard of care for midwives, obstetricians, family physicians, nurse practitioners, and pediatricians.

Midwives, obstetricians, family physicians, nurse practitioners, and pediatricians provide care that supports their patients' interests and health needs, including breastfeeding. Their full support of breastfeeding may be limited by the use of practices that unintentionally and unnecessarily interfere with breastfeeding. These practices directly affect mothers' and babies' abilities to start and continue breastfeeding.

## Implementation Strategies

**Define standards for clinical practice that will ensure continuity of care for pregnant women and mother-baby pairs in the first four weeks of life.** The standard of care should include actions that are important for the promotion and support of breastfeeding, including providing prenatal counseling on feeding decisions, setting accountability standards for postpartum follow-up care, monitoring neonatal weight gain, and establishing referral mechanisms for skilled lactation care. Models should be established to integrate assistance with breastfeeding into routine practice settings.

**Conduct analyses and disseminate their findings on the comparative effectiveness of different models for integrating skilled lactation support into settings where midwives, obstetricians, family physicians, nurse practitioners, and pediatricians practice.** Skilled lactation support may be provided by trained physicians, by lactation consultants affiliated with a physician practice, through stand-alone clinics, or by referrals. Models of care differ in the degree to which care is provided for all breastfeeding mothers to prevent difficulties and the extent to which care is provided for women already having problems. Identification of best practices and optimal care models is needed.

## Action 11. Ensure access to services provided by International Board Certified Lactation Consultants.

International Board Certified Lactation Consultants (IBCLCs) are the only health care professionals certified in lactation care. They have specific clinical expertise and training in the clinical management of complex problems with lactation. Better access to the care provided by IBCLCs can be achieved by accepting them as core members of the health care team and creating opportunities to prepare and train more IBCLCs from racial and ethnic minority groups that are currently not well represented in this profession.

### Implementation Strategies

**Include support for lactation as an essential medical service for pregnant women, breastfeeding mothers, and children.** Third party payers typically define a standard package of health benefits for women and children. Including standard coverage for IBCLCs as “covered providers” when they perform services within the scope of their certification would ensure that mothers and children have access to these services through insurance maternity benefits. Federally funded health benefit programs, such as Medicaid, the Children’s Health Insurance Programs, Tricare, and the Federal Employee Health Benefit program, could serve as models for such a standard benefit package.

**Provide reimbursement for IBCLCs independent of their having other professional certification or licensure.** The taxonomy for health care clinicians defines qualifications of clinicians to be reimbursed. One option for reimbursement would be to place certified lactation consultants within the category of “nursing service related providers,” and specifying the nature of care they provide would allow for reimbursement of IBCLCs without requiring that they are also registered nurses. Alternatively, developing state licensure of lactation consultants could help to achieve the same purpose.

**Work to increase the number of racial and ethnic minority IBCLCs to better mirror the U.S. population.** Racial and ethnic minority communities tend to be underserved by lactation consultants. More students from these communities could be trained in human lactation to increase careers in lactation consultation. Area Health Education Centers could be encouraged to establish community-based training sites in lactation services.

## Action 12. Identify and address obstacles to greater availability of safe banked donor milk for fragile infants.

Growing evidence supports the role of donated human milk in assisting infants with special needs, such as infants in newborn intensive care units who are unable to receive their own mothers' milk, to achieve the best possible health outcome. In these situations, use of banked donor milk may protect the infant from the risks that might result from not breastfeeding. Unfortunately, demand for donor milk outpaces supply because of logistical challenges related to transportation of donated milk, the lack of clarity in oversight, and the high cost of providing banked human milk. A national strategy is needed to efficiently and effectively address the issues involved in providing banked donor milk to vulnerable infant populations.

### Implementation Strategies

**Conduct a systematic review of the current evidence on the safety and efficacy of donor human milk.** A systematic review will provide a common understanding of the health outcomes resulting from the use of this milk by analyzing the results of all of the available published research. Additionally, a systematic review will help identify any areas where the evidence is not conclusive and where more research is needed.

**Establish evidence-based clinical guidelines for the use of banked donor milk.** Necessary components of the guidelines include discussion of the use of donor human milk for a variety of infants, such as those who have a low or very low birth weight, are premature, or have particular medical needs; issues related to collection of and payment for donor milk; and the complex biomedical ethics of prioritizing the distribution of banked donor milk.

**Convene a study on federal regulation and support of donor milk banks.**

Such a study could examine possible models for regulating and funding milk banks. In addition, it should consider policy options to address concerns about biomedical ethics related to compensation for donating milk and the for-profit sale of banked donor milk. It also could examine models for payment, including WIC or health insurance program benefits that cover the use of banked donor milk. It is important also to consider how human milk banks might be a resource in planning responses to national emergencies.



## Employment

### Action 13. Work toward establishing paid maternity leave for all employed mothers.

Most women of childbearing age in the United States are in the labor force. Numerous studies have demonstrated that providing paid maternity leave for employed mothers increases the success of breastfeeding. The International Labor Organization, an arm of the United Nations, recommends a paid maternity leave of 18 weeks and also recommends that employers not be solely responsible for funding maternity leave, as this could create a disincentive to hire women. The International Labor Organization's recommendations might be reasonable goals for the United States. In this country, the Family and Medical Leave Act of 1993 provides for 12 weeks of unpaid leave that can be used for maternity leave. However, unpaid leave is usually not an option for lower-income mothers, who are disproportionately women of color. Therefore, paid leave is necessary to reduce the differential effect of employment on breastfeeding among disadvantaged racial, ethnic, and economic groups, which in turn would allow disadvantaged populations to benefit from the health effects of breastfeeding.

#### Implementation Strategies

**Add maternity leave to the categories of paid leave for federal civil servants.** This change is an important step toward filling gaps and expanding access to paid maternity leave. A benefit of paid maternity leave for federal government workers would be useful to mothers employed by the federal government and encourage other work sectors to implement similar programs. Several private-sector employers have successfully provided paid leave. The federal government should assess existing model programs to develop a program for its employees.

**Develop and implement programs in states to establish a funding mechanism for paid maternity leave.** Currently, several states have passed or are considering legislation to establish paid family or maternity leave. The funding mechanisms used or proposed include the State Temporary Disability Insurance program and state-administered insurance systems for family leave that are financed by employer or employee payroll deductions. States are encouraged to be creative in developing ways to fund paid maternity leave.

## Action 14. Ensure that employers establish and maintain comprehensive, high-quality lactation support programs for their employees.

In the United States, a majority of mothers have returned to the workplace by the time their infants are six months old. Continuation of breastfeeding after returning to work is facilitated if the employer offers a lactation support program. The evidence demonstrates that supportive policies and programs at the workplace enable women to continue providing human milk for their infants for significant periods after they return to work. High-quality lactation programs go beyond just providing time and space for breast milk expression, but also provide employees with breastfeeding education, access to lactation consultation, and equipment such as high-grade, electric breast pumps. Currently, only a quarter of U.S. employers provide breastfeeding employees with a place to express breast milk at the workplace.

### Implementation Strategies

**Develop resources to help employers comply with federal law that requires employers to provide the time and a place for nursing mothers to express breast milk.** As part of the Affordable Care Act enacted in 2010, the Fair Labor Standards Act was amended to require employers to provide reasonable break time and a private place for nursing mothers to express milk while at work. Programs are needed to educate employers about the new law, supply examples of how it can be implemented in a variety of work settings, and provide assistance to businesses that find compliance difficult.

**Design and disseminate materials to educate employers about the benefits of providing more comprehensive, high-quality support for breastfeeding employees.** The Health Resources and Services Administration resource kit, *The Business Case for Breastfeeding: Steps for Creating a Breastfeeding Friendly Worksite*, is one model of how to promote employer support for breastfeeding employees. Developing Web sites, videos, conference exhibits, and peer-to-peer marketing strategies could all be useful for expanding the use of lactation programs and implementing effective programs across a variety of work settings. New materials that focus on the unique concerns of non-office work environments and workplaces with few employees should be developed.

**Develop and share innovative solutions to the obstacles to breastfeeding that women face when returning to work in non-office settings.** While there are numerous examples of creating lactation rooms in office buildings and large stores, many work environments are more challenging for breastfeeding women returning to work. For example, farm workers may find it difficult to access a private place shielded from public view. Service workers who are on the road may not have a regular workplace where they can express milk. Challenges also exist in allowing break time for breast milk expression in businesses where there are few employees to cover during breaks. Many employers have already worked with workplace lactation consultants to develop innovative solutions, such as special trailers, makeshift temporary spaces, or “floater” employees, to enable nursing mothers to take breaks.

**Promote comprehensive, high-quality lactation support programs as part of a basic employee benefits package.** There are cost savings from better retention of experienced workers, higher employee morale, greater loyalty and productivity of employees, reduction in absenteeism and sick leave taken by parents of young children, and lower costs for health care and health insurance. While the percentage of employers having lactation support programs has increased over the past decade, many women still find it difficult to combine breastfeeding with work.

## **Action 15. Expand the use of programs in the workplace that allow lactating mothers to have direct access to their babies.**

Although working mothers can express and store their milk for other persons to feed to their infants, this option should be only one approach in a multipronged strategy to achieve the goal of increasing support in the workplace. Directly breastfeeding the infant during the workday is the most effective strategy of combining employment and breastfeeding because it increases both the duration and intensity of breastfeeding. Possible strategies for working mothers include having the mother keep the baby with her while she works, allowing the mother to go to the baby to breastfeed during the workday, telecommuting, offering flexible work schedules, maintaining part-time work schedules, and using on-site or nearby child care centers.



## Implementation Strategies

**Create incentive or recognition programs for businesses that establish, subsidize, and support child care centers at or near the business site.** If mothers are able to go to their babies during the work day, they would be able to breastfeed and not need to express and store their milk. Program incentives provided for expressing and storing milk should also be provided for strategies that enable direct breastfeeding.

**Identify and promote innovative programs that allow mothers to directly breastfeed their babies after they return to work.** These innovative solutions can then be widely disseminated to businesses and other employers. *The Business Case for Breastfeeding* resource kit was adapted recently to apply specifically to the conditions in Fortune 500 companies. Organizations can use case studies of programs already functioning successfully in such large businesses or agencies as models for implementing programs.

### Action 16. Ensure that all child care providers accommodate the needs of breastfeeding mothers and infants.

Because most employed mothers return to work in their babies' first year of life, providers of child care have a critical role to play in supporting employed mothers who breastfeed. Child care centers are regulated by the individual states, and although there are national standards on support of breastfeeding mothers and caring for breastfed infants, few states have regulations mandating that these standards be enforced at the state level.

## Implementation Strategy

**Promote adoption of the breastfeeding standards in *Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care*.**

Some states have developed their own child care guidelines based on these standards,<sup>281</sup> and these guidelines can serve as models for other states. States should facilitate training for these providers on how to support breastfeeding mothers and how to feed breast milk to infants. Facilitation might include developing instructional materials, providing incentives for training, or requiring training in breastfeeding-related topics for all providers who care for infants. Because the national guidelines recommend such training, models are already available. The federal government might encourage adoption of the national guidelines through educational programs for state health departments or other state agencies that license or oversee child care.

## Research and Surveillance

### Action 17. Increase funding of high-quality research on breastfeeding.

In particular, new research is needed on

- **Methods to increase rates of breastfeeding among populations with current low rates.** At present, the evidence available for selecting the most cost-effective interventions to promote and support breastfeeding is quite limited. Randomized designs and evaluations of existing programs designed to advance breastfeeding could add to this evidence.
- **The economic impact of breastfeeding in the United States.** Increasingly, public health investments must be justified by analyses that demonstrate economic value for society as a whole, for health care institutions, or for purchasers of care. Although some studies have documented the potential for significant cost savings through breastfeeding, more precise information is needed on who will benefit from these savings.



- **Ways to better manage lactation and breastfeeding.** Health professionals must deal with a variety of special situations (such as physiological problems, infectious diseases, or medical interventions) that may make breastfeeding challenging or that may need to be managed differently if a woman is breastfeeding. The evidence base for making clinical decisions in these situations is often lacking and thus needs to be expanded.

## Implementation Strategy

**Designate additional research funding for studies on how to increase breastfeeding rates, the economics of breastfeeding, and management of lactation.** This objective can be accomplished by issuing program announcements, requests for research applications, and contract proposals.

## Action 18. Strengthen existing capacity and develop future capacity for conducting research on breastfeeding.

Researchers who study breastfeeding need more opportunities to collaborate with other investigators, such as behavioral scientists, medical researchers, economists, and lawyers. In addition, enhanced training opportunities are needed to ensure that a skilled cadre of future scientists is ready to undertake research on breastfeeding.

## Implementation Strategies

**Develop a national consortium on breastfeeding research.** Such a consortium would help overcome the limitations that researchers now face in designing studies, increase the generalizability of research on breastfeeding, help prioritize key research areas, enable expanded and advanced research to be performed, and foster the timely translation of research into practice. Such a consortium would bring together researchers to

- Standardize definitions of specific terms and measures used to classify the variables used in research on breastfeeding.
- Promote the use of these definitions.
- Identify ethical study designs that would expand the knowledge that has been generated thus far from observational studies.
- Develop and update national agendas for surveillance and research on topics related to breastfeeding and infant nutrition.
- Spearhead funding strategies to help accomplish the agenda developed by the consortium.
- Facilitate communication among researchers.
- Promote the dissemination of research findings and monitor the translation of research into best practices.

**Enhance the training of scientists in basic and applied research on lactation, breastfeeding, and women's and children's health.** These enhancements may include the development of specific curricula in medical schools, in educational programs for other health professionals, and in health science programs to ensure that a skilled cadre of scientists is available and appropriately trained to undertake this research.

## **Action 19. Develop a national monitoring system to improve the tracking of breastfeeding rates as well as the policies and environmental factors that affect breastfeeding.**

Although the Centers for Disease Control and Prevention (CDC) tracks breastfeeding rates annually through the National Immunization Survey and other systems, representative local data are generally unavailable and are not as timely as needed. Furthermore, few systems exist to track changes in breastfeeding behavior and attitudes.

### **Implementation Strategies**

**Enhance the CDC Breastfeeding Report Card by including a broader array of process indicators and showing trends over time.** Currently, the Breastfeeding Report Card tracks breastfeeding rates, as well as indicators of state-level factors that affect breastfeeding rates, such as the strength of breastfeeding coalitions, state infrastructure, legislation, maternity practices, and professional support. However, a more comprehensive set of indicators would make the tool more useful over time.

**Collect data in all states on the initiation of breastfeeding and in-hospital supplementation with formula through the U.S. Standard Certificate of Live Birth.** Since 2003, the U.S. Standard Certificate of Live Birth developed by CDC has included a question on whether the infant was ever breastfed. To date, only 28 states have adopted this question. New Jersey has expanded the question to ask about in-hospital feeding of infant formula, which allows for the calculation of exclusive breastfeeding rates, as well as rates of supplementation.

**Develop systems to collect key information on policy and environmental supports for breastfeeding.** The CDC Survey on Maternity Practices in Infant Nutrition and Care (mPINC) is one model of tracking how institutions are supporting breastfeeding. Similar models are needed to track other supports for breastfeeding, such as workplace accommodations for breastfeeding, the accessibility of certified lactation consultants, the availability and use of peer counselors in breastfeeding, and the level of knowledge among clinicians about breastfeeding. Such systems can provide ongoing feedback about strengths and weaknesses in the overall environment so that successes can be noted and needed improvements can be identified.

## Public Health Infrastructure

### Action 20. Improve national leadership on the promotion and support of breastfeeding.

Low rates of breastfeeding are a public health problem of national significance. Although many organizations and public health agencies have contributed to improvements in breastfeeding over time, coordinated leadership of these efforts is still lacking. Increased efforts are needed to develop and implement an action plan on breastfeeding.

#### Implementation Strategies

**Create a federal interagency work group on breastfeeding.** The federal government needs to play a central role in coordinating efforts to promote, protect, and support breastfeeding. No single federal agency can take full responsibility for breastfeeding because activities occur in many different agencies, including those devoted to health, agriculture, labor, defense, and education. All of these agencies have roles and responsibilities related to the promotion and support of breastfeeding. The U.S. Department of Health and Human Services could lead an interagency work group to bring together relevant staff to plan, carry out, and monitor initiatives in breastfeeding.

**Increase the capacity of the United States Breastfeeding Committee and affiliated state coalitions to support breastfeeding.** This committee brings together professional, civic, and academic organizations that have a shared vision of better support for breastfeeding, but it requires increased funding and staff to carry out its strategic plan. The United States Breastfeeding Committee is affiliated with state breastfeeding coalitions in all 50 states that carry out activities at state and local levels. The capacity of state breastfeeding coalitions should be enhanced to enable them to be an effective force in promoting and supporting breastfeeding.





# References

1. Lawrence RA, Lawrence RM. Breastfeeding: a guide for the medical profession. 7th ed. Philadelphia: Saunders; 2010.
2. Ip S, Chung M, Raman G, Chew P, Magula N, DeVine D, et al. Breastfeeding and maternal and infant health outcomes in developed countries: evidence report/technology assessment no. 153. Rockville, MD: Agency for Healthcare Research and Quality; 2007. AHRQ Publication No. 07-E007.
3. Chien PF, Howie PW. Breast milk and the risk of opportunistic infection in infancy in industrialized and non-industrialized settings. *Adv Nutr Res* 2001;10:69–104.
4. Bachrach VR, Schwarz E, Bachrach LR. Breastfeeding and the risk of hospitalization for respiratory disease in infancy: a meta-analysis. *Arch Pediatr Adolesc Med* 2003;157:237–243.
5. Kwan ML, Buffer PA, Abrams B, Kiley VA. Breastfeeding and the risk of childhood leukemia: a meta-analysis. *Public Health Rep* 2004;119:521–535.
6. Owen CG, Martin RM, Whincup PH, Smith GD, Cook DG. Does breastfeeding influence risk of type 2 diabetes in later life? A quantitative analysis of published evidence. *Am J Clin Nutr* 2006;84:1043–1054.
7. Arenz S, Ruckerl R, Koletzko B, von Kries R. Breastfeeding and childhood obesity—a systematic review. *Int J Obes Relat Metab Disord* 2004;28:1247–1256.
8. Collaborative Group on Hormonal Factors in Breast Cancer. Breast cancer and breastfeeding: collaborative reanalysis of individual data from 47 epidemiological studies in 30 countries, including 50302 women with breast cancer and 96973 women without the disease. *Lancet* 2002;360:187–195.
9. Bernier MO, Plu-Bureau G, Bossard N, Ayzac L, Thalabard JC. Breastfeeding and risk of breast cancer: a meta-analysis of published studies. *Hum Reprod Update* 2000;6:374–386.
10. Chung M, Raman G, Trikalinos T, Lau J, Ip S. Interventions in primary care to promote breastfeeding: an evidence review for the U.S. Preventive Services Task Force. *Ann Intern Med* 2008;149:565–582.
11. Gdalevich M, Mimouni D, David M, Mimouni M. Breastfeeding and the onset of atopic dermatitis in childhood: a systematic review and meta-analysis of prospective studies. *J Am Acad Dermatol* 2001;45:520–527.
12. Bai YK, Middlestadt SE, Joanne Peng CY, Fly AD. Psychosocial factors underlying the mother's decision to continue exclusive breastfeeding for 6 months: an elicitation study. *J Hum Nutr Diet* 2009;22:134–140.
13. Guttman N, Zimmerman DR. Low-income mothers' views on breastfeeding. *Soc Sci Med* 2000;50:1457–1473.
14. Neifert M, Gray J, Gary N, Camp B. Factors influencing breastfeeding among adolescents. *J Adolesc Health Care* 1988;9:470–473.
15. O'Hara MW, Swain AM. Rates and risk of postpartum depression—a meta-analysis. *Int Rev Psychiatry* 1996;8:37–54.
16. Mancini F, Carlson C, Albers L. Use of the Postpartum Depression Screening Scale in a collaborative obstetric practice. *J Midwifery Women's Health* 2007;52:429–434.
17. Green K, Broome H, Mirabella J. Postnatal depression among mothers in the United Arab Emirates: socio-cultural and physical factors. *Psychol Health Med* 2006;11:425–431.
18. Jardri R, Pelta J, Maron M, Thomas P, Delion P, Codaccioni X, et al. Predictive validation study of the Edinburgh Postnatal Depression Scale in the first week after delivery and risk analysis for postnatal depression. *J Affect Disord* 2006;93:169–176.
19. Dennis CL, McQueen K. The relationship between infant-feeding outcomes and postpartum depression: a qualitative systematic review. *Pediatrics* 2009;123:e736–e751.
20. Ball TM, Wright AL. Health care costs of formula feeding in the first year of life. *Pediatrics* 1999;103:870–876.
21. United States Breastfeeding Committee. Economic benefits of breastfeeding [issue paper]. Raleigh, NC: United States Breastfeeding Committee; 2002.
22. U.S. Department of Health and Human Services. Healthy people 2010. 2nd ed. Washington, DC: U.S. Government Printing Office. November 2000.
23. Weimer J. The economic benefits of breastfeeding: a review and analysis. ERS Food Assistance and Nutrition Research Report No. 13. Washington, DC: U.S. Department of Agriculture, Economic Research Service; 2001.
24. Bartick M, Reinhold A. The burden of suboptimal breastfeeding in the United States: a pediatric cost analysis. *Pediatrics* 2010;125:e1048–e1056.
25. Gartner LM, Morton J, Lawrence RA, Naylor AJ, O'Hare D, Schanler RJ, Eidelman AI; American Academy of Pediatrics Section on Breastfeeding. Breastfeeding and the use of human milk. *Pediatrics* 2005;115:496–506.
26. La Leche League International. The womanly art of breastfeeding. USA: Penguin Books; 1995.
27. American Academy of Family Physicians. Breastfeeding (policy statement). 2007. Available at: <http://www.aafp.org/online/en/home/policy/policies/b/breastfeedingpolicy.html>. Accessed July 2, 2010.
28. American College of Obstetricians and Gynecologists, Committee on Health Care for Underserved Women, and Committee on Obstetric Practice. ACOG committee opinion #361: breastfeeding: maternal and infant aspects. *Obstet Gynecol* 2007;109(2Pt1):479–480.
29. American College of Nurse-Midwives, Division of Women's Health Policy and Leadership. Position statement: breastfeeding. 2004. Available at: [http://www.midwife.org/siteFiles/position/Breastfeeding\\_05.pdf](http://www.midwife.org/siteFiles/position/Breastfeeding_05.pdf). Accessed July 2, 2010.
30. James DC, Lesson R, American Dietetic Association. Position of the American Dietetic Association: promoting and supporting breastfeeding. *J Am Diet Assoc* 2009;109:1926–1942.
31. American Public Health Association. A call to action on breastfeeding: a fundamental public health issue. 2007. Policy No. 200714. Available at: <http://www.apha.org/advocacy/policy/policysearch/default.htm?id=1360>. Accessed July 2, 2010.

32. U.S. Department of Health and Human Services. Report of the Surgeon General's workshop on breastfeeding & human lactation. Washington, DC: U.S. Department of Health and Human Services; 1984. Publication No. HRS-D-MC 84-2.
33. U.S. Department of Health and Human Services. Followup report: the Surgeon General's workshop on breastfeeding and human lactation. Washington, DC: U.S. Department of Health and Human Services; 1985. Publication No. HRS-D-MC 85-2.
34. Spisak S, Gross SS. Second followup to the Surgeon General's workshop on breastfeeding and human lactation. Washington, DC: National Center for Education in Maternal and Child Health; 1991.
35. World Health Organization. International code of marketing of breast-milk substitutes. 1981. Available at: [http://www.who.int/nutrition/publications/code\\_english.pdf](http://www.who.int/nutrition/publications/code_english.pdf). Accessed July 27, 2010.
36. United Nations Children's Fund, World Health Organization. Innocenti declaration on the protection, promotion and support of breastfeeding. Florence, Italy: UNICEF/WHO; 1990.
37. U.S. Department of Health and Human Services. HHS blueprint for action on breastfeeding. Washington, DC: U.S. Department of Health and Human Services, Office on Women's Health; 2000.
38. Martinez GA, Nalezienski JP. The recent trend in breastfeeding. *Pediatrics* 1979;64:686–692.
39. Ryan AS. The resurgence of breastfeeding in the United States. *Pediatrics* 1997;99(4):e12.
40. Ryan AS, Wenjun Z, Acosta A. Breastfeeding continues to increase into the new millennium. *Pediatrics* 2002; 110:1103–1109.
41. Centers for Disease Control and Prevention. Breastfeeding among U.S. children born 1999–2007, CDC National Immunization Survey. Available at: [http://www.cdc.gov/breastfeeding/data/NIS\\_data/index.htm](http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm). Accessed August 2, 2010.
42. Fein SB, Labiner-Wolfe J, Shealy KR, Li R, Chen J, Grummer-Strawn LM. Infant Feeding Practices Study II: study methods. *Pediatrics* 2008;122(Suppl 2):S28–S35.
43. Grummer-Strawn LM, Scanlon KS, Fein SB. Infant feeding and feeding transitions during the first year of life. *Pediatrics* 2008;122(Suppl 2):S36–S42.
44. Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #3: hospital guidelines for the use of supplementary feedings in the healthy term breastfed neonate, revised 2009. *Breastfeed Med* 2009;4:175–182.
45. Centers for Disease Control and Prevention. Racial and ethnic differences in breastfeeding initiation and duration, by state—National Immunization Survey, United States, 2004–2008. *MMWR Morb Mortal Wkly Rep* 2010;59:327–334.
46. Grummer-Strawn LM, Shealy K. Progress in protecting, promoting, and supporting breastfeeding: 1984–2009. *Breastfeeding Med* 2009;4:S31–S39.
47. Oyeku SO. A closer look at racial/ethnic disparities in breastfeeding. Commentary on “Breastfeeding advice given to African American and white women by physicians and WIC counselors.” *Public Health Rep* 2003;118:377–378.
48. Satcher DS. DHHS blueprint for action on breastfeeding. *Public Health Rep* 2001;116:72–73.
49. Fein SB, Mandal B, Roe BE. Success of strategies for combining employment and breastfeeding. *Pediatrics* 2008;122(Suppl 2):S56–S62.
50. Ortiz J, McGilligan K, Kelly P. Duration of breast milk expression among working mothers enrolled in an employer-sponsored lactation program. *Pediatr Nurs* 2004;30:111–119.
51. Centers for Disease Control and Prevention. Breastfeeding trends and updated national health objectives for exclusive breastfeeding—United States, birth years 2000–2004. *MMWR Morb Mortal Wkly Rep* 2007;56:760–763.
52. Centers for Disease Control and Prevention. Breastfeeding-related maternity practices at hospitals and birth centers—United States, 2007. *MMWR Morb Mortal Wkly Rep* 2008;57:621–625.
53. Brown JD, Peuchaud SR. Media and breastfeeding: friend or foe? *Int Breastfeed J* 2008;3:15.
54. Bentley ME, Dee DL, Jensen JL. Breastfeeding among low income, African-American women: power, beliefs and decision making. *J Nutr* 2003;133(Suppl):305S–309S.
55. Hausman B. Mother's milk: breastfeeding controversies in American culture. New York: Routledge; 2003.
56. Beal AC, Kuhlthau K, Perrin JM. Breastfeeding advice given to African American and white women by physicians and WIC counselors. *Public Health Rep* 2003;118:368–376.
57. Thulier D. Breastfeeding in America: a history of influencing factors. *J Hum Lact* 2009;25:85–94.
58. Guendelman S, Kosa JL, Pearl M, Graham S, Goodman J, Kharrazi M. Juggling work and breastfeeding: effects of maternity leave and occupational characteristics. *Pediatrics* 2009;123:e38–e46.
59. Mills SP. Workplace lactation programs: a critical element for breastfeeding mothers' success. *AAOHN J* 2009;57:227–231.
60. Kogan MD, Singh GK, Dee DL, Belanoff C, Grummer-Strawn LM. Multivariate analysis of state variation in breastfeeding rates in the United States. *Am J Public Health* 2008;98:1872–1880.
61. McCann MF, Baydar N, Williams RL. Breastfeeding attitudes and reported problems in a national sample of WIC participants. *J Hum Lact* 2007;23:314–324.
62. Li R, Rock VJ, Grummer-Strawn L. Changes in public attitudes toward breastfeeding in the United States, 1999–2003. *J Am Diet Assoc* 2007;107:122–127.
63. Gibson ME. Getting back to basics: the curious history of breastfeeding in the United States. *Am J Nursing* 2005; 105:72c–73c.
64. Moore ER, Anderson GC, Bergman N. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Syst Rev* 2007(3):CD003519.
65. McFadden A, Toole G. Exploring women's views of breastfeeding: a focus group study within an area with high levels of socio-economic deprivation. *Matern Child Nutr* 2006;2(3)156–168.

66. Mozingo JN, Davis MW, Droppleman PG, Meredith A. "It wasn't working." Women's experiences with short-term breastfeeding. *MCN Am J Matern Child Nurs* 2000;25:120–126.
67. Bunik M, Clark L, Zimmer LM, Jimenez LM, O'Connor ME, Crane LA, et al. Early infant feeding decisions in low-income Latinas. *Breastfeed Med* 2006;1:225–235.
68. Gill SL, Reifsnider E, Mann AR, Villarreal P, Tinkle MB. Assessing infant breastfeeding beliefs among low-income Mexican Americans. *J Perinat Educ* 2004;13:39–50.
69. Gill SL. Breastfeeding by Hispanic women. *J Obstet Gynecol Neonatal Nurs* 2009;38:244–252.
70. Rivera AF, Dávila Torres RR, Parrilla Rodríguez AM, de Longo IM, Gorrín Peralta JJ. Exploratory study: knowledge about the benefits of breastfeeding and barriers for initiation in mothers of children with spina bifida. *Matern Child Health J* 2008;12(6):734–738.
71. Li R, Fridinger F, Grummer-Strawn L. Public perceptions on breastfeeding constraints. *J Hum Lact* 2002;18:227–235.
72. Dodgson JE, Duckett L, Garwick A, Graham BL. An ecological perspective of breastfeeding in an indigenous community. *J Nurs Scholarsh* 2002;34:235–241.
73. McIntyre E, Hiller JE, Turnbull D. Community attitudes to infant feeding. *Breastfeed Rev* 2001;9(3):27–33.
74. Libbus K, Bush TA, Hockman NM. Breastfeeding beliefs of low-income primigravidae. *Int J Nurs Stud* 1997;34:144–150.
75. Zimmerman DR, Guttman N. "Breast is best": knowledge among low-income mothers is not enough. *J Hum Lact* 2001;17:14–19.
76. Stewart-Knox B, Gardiner K, Wright M. What is the problem with breast-feeding? A qualitative analysis of infant feeding perceptions. *J Hum Nutr Diet* 2003;16:265–273.
77. Dykes F, Moran VH, Burt S, Edwards J. Adolescent mothers and breastfeeding: experiences and support needs—an exploratory study. *J Hum Lact* 2003;19:391–401.
78. Sikorski J, Renfrew MJ, Pindoria S, Wade A. Support for breastfeeding mothers: a systematic review. *Paediatr Perinat Epidemiol* 2003;17(4):407–417.
79. Sussner KM, Lindsay AC, Peterson KE. The influence of acculturation on breast-feeding initiation and duration in low-income women in the US. *J Biosoc Sci* 2008;40:673–696.
80. Gorman JR, Madlensky L, Jackson DJ, Ganiats TG, Boies E. Early postpartum breastfeeding and acculturation among Hispanic women. *Birth* 2007;34:308–315.
81. Harley K, Stamm NL, Eskenazi B. The effect of time in the U.S. on the duration of breastfeeding in women of Mexican descent. *Matern Child Health J* 2007;11:119–125.
82. Celi AC, Rich-Edwards JW, Richardson MK, Kleinman KP, Gillman MW. Immigration, race/ethnicity, and social and economic factors as predictors of breastfeeding initiation. *Arch Pediatr Adolesc Med* 2005;159:255–260.
83. Gibson MV, Diaz VA, Mainous AG III, Geesey ME. Prevalence of breastfeeding and acculturation in Hispanics: results from NHANES 1999–2000 study. *Birth* 2005;32:93–98.
84. Anderson AK, Damio G, Himmelgreen DA, Peng YK, Segura-Pérez S, Pérez-Escamilla R. Social capital, acculturation, and breastfeeding initiation among Puerto Rican women in the United States. *J Hum Lact* 2004;20:39–45.
85. Rassin DK, Markides KS, Baranowski T, Richardson CJ, Mikrut WD, Bee DE. Acculturation and the initiation of breastfeeding. *J Clin Epidemiol* 1994;47:739–746.
86. Romero-Gwynn E. Breast-feeding pattern among Indochinese immigrants in northern California. *Am J Dis Child* 1989;143:804–808.
87. U.S. Government Accountability Office. Report to Congressional addressees: breastfeeding: some strategies used to market infant formula may discourage breastfeeding; state contracts should better protect against misuse of WIC name. Washington, DC: U.S. Government Accountability Office; 2006. Available at: <http://www.gao.gov/new.items/d06282.pdf>. Accessed July 26, 2010.
88. Wilmoth TA, Elder JP. An assessment of research on breastfeeding promotion strategies in developing countries. *Soc Sci Med* 1995;41:579–594.
89. Schlickau JM, Wilson ME. Breastfeeding as health-promoting behaviour for Hispanic women: literature review. *J Adv Nurs* 2005;52:200–210.
90. Heinig MJ, Follett JR, Ishii KD, Kavanagh-Prochaska K, Cohen R, Panchula J. Barriers to compliance with infant-feeding recommendations among low-income women. *J Hum Lact* 2006;22:27–38.
91. Higgins B. Puerto Rican cultural beliefs: influence on infant feeding practices in western New York. *J Transcult Nurs* 2000;11:19–30.
92. Arora S, McJunkin C, Wehrer J, Kuhn P. Major factors influencing breastfeeding rates: mother's perception of father's attitude and milk supply. *Pediatrics* 2000;106:E67.
93. Wolfberg AJ, Michels KB, Shields W, O'Campo P, Bronner Y, Bienstock J. Dads as breastfeeding advocates: results from a randomized controlled trial of an educational intervention. *Am J Obstet Gynecol* 2004;191:708–712.
94. Dennis CL. Breastfeeding initiation and duration: a 1990–2000 literature review. *J Obstet Gynecol Neonatal Nurs* 2002;31:12–32.
95. Scott JA, Binns CW. Factors associated with the initiation and duration of breastfeeding: a review of the literature. *Breastfeeding Rev* 1999;7:5–16.
96. Bar-Yam NB, Darby L. Fathers and breastfeeding: a review of the literature. *J Hum Lact* 1997;13:45–50.
97. Pisacane A, Continisio GI, Aldinucci M, D'Amora S, Continisio P. A controlled trial of the father's role in breastfeeding promotion. *Pediatrics* 2005;116:e494–e498.
98. Li R, Hsia J, Fridinger F, Hussain A, Benton-Davis S, Grummer-Strawn L. Public beliefs about breastfeeding policies in various settings. *J Am Diet Assoc* 2004;104:1162–1168.

99. Vance MR. Breastfeeding legislation in the United States: a general overview and implications for helping mothers. *Leaven* 2005;41:51–54. Available at <http://www.lli.org/llleaderweb/LV/LVJunJul05p51.html>. Accessed March 10, 2010.
100. McIntyre E, Turnbull D, Hiller JE. Breastfeeding in public places. *J Hum Lact* 1999;15:131–135.
101. Khoury AJ, Moazzem SW, Jarjoura CM, Carothers C, Hinton A. Breast-feeding initiation in low-income women: role of attitudes, support, and perceived control. *Womens Health Issues* 2005;15:64–72.
102. Raisler J. Against the odds: Breastfeeding experiences of low income mothers. *J Midwifery Womens Health* 2000;45:253–263.
103. Hannon PR, Willis SK, Bishop-Townsend V, Martinez IM, Scrimshaw SC. African-American and Latina adolescent mothers' infant feeding decisions and breastfeeding practices: a qualitative study. *J Adolesc Health* 2000;26:399–407.
104. Brownell K, Hutton L, Hartman J, Dabrow S. Barriers to breastfeeding among African American adolescent mothers. *Clin Pediatr. (Phila)* 2002;41:669–673.
105. Mitra AK, Khoury AJ, Hinton AW, Carothers C. Predictors of breastfeeding intention among low-income women. *Matern Child Health J* 2004;8:65–70.
106. Daniels MJ, Parrot RL. Prenatal care from the woman's perspective: a thematic analysis of the newspaper media. In: Parrot RL, Condit CM, editors. *Evaluating women's health messages: a resource book*. Thousand Oaks, CA: Sage; 1996. pp. 222–233.
107. Shannon T, O'Donnell MJ, Skinner K. Breastfeeding in the 21st century: overcoming barriers to help women and infants. *Nurs Womens Health* 2007;11:568–575.
108. Frerichs L, Andsager JL, Campo S, Aquilino M, Stewart Dyer C. Framing breastfeeding and formula feeding messages in popular U.S. magazines. *Women Health* 2006;44:95–118.
109. Swanson V, Power K, Kaur B, Carter H, Shepherd K. The impact of knowledge and social influences on adolescents' breast-feeding beliefs and intentions. *Public Health Nutr* 2006;9:297–305.
110. Blair-Stevens T, Cork S. "Who wants to eat in a toilet?" A social marketing approach to breast-feeding in public places and at work. *J Fam Health Care* 2008;18:167–170.
111. McIntyre E, Turnbull D, Hiller JE. Suitability of breastfeeding facilities outside the home: an audit of baby change rooms in shopping centres. *Breastfeed Rev* 1999;7:17–20.
112. Li R, Fein SB, Chen J, Grummer-Strawn LM. Why mothers stop breastfeeding: mothers' self-reported reasons for stopping during the first year. *Pediatrics* 2008 Oct;122 (Suppl 2):S69–S76.
113. Gaiva MAM, Medeiros LS. Insufficient lactation: a proposal for action by nurses. *Ciencia* 2006;5:255–262.
114. Stuff JE, Nichols BL. Nutrient intake and growth performance of older infants fed human milk. *J Pediatr* 1989;115:959–968.
115. Dewey KG, Heinig J, Nommsen LA, Lonnerdal B. Adequacy of energy intake among breast-fed infants in the DARLING study: relationships to growth velocity, morbidity, and activity levels. *J Pediatr* 1991;119:538–547.
116. Arlotti JP, Cottrell BH, Lee SH, Curtin JJ. Breastfeeding among low-income women with and without peer support. *J Community Health Nurs* 1998;15:163–178.
117. Amir LH. Breastfeeding—managing “supply” difficulties. *Aust Fam Physician* 2006;35:686–689.
118. Butte NF, Garza C, Smith EO, Nichols BL. Human milk intake and growth in exclusively breast-fed infants. *J Pediatr* 1984;104:187–195.
119. Neville MC, Keller R, Seacat J, Lutes V, Neifert M, Casey C, et al. Studies in human lactation: milk volumes in lactating women during the onset of lactation and full lactation. *Am J Clin Nutr* 1988;48:1375–1386.
120. Powers NG. Slow weight gain and low milk supply in the breastfeeding dyad. *Clin Perinatol* 1999;26:399–430.
121. Dykes F, Williams C. Falling by the wayside: a phenomenological exploration of perceived breast-milk inadequacy in lactating women. *Midwifery* 1999;15: 232–246.
122. Hailes JF, Wellard SJ. Support for breastfeeding in the first postpartum month: perceptions of breastfeeding women. *Breastfeed Rev* 2000;8:5–9.
123. Hong TM, Callister LC, Schwartz R. First time mothers' views of breastfeeding support from nurses. *MCN Am J Matern Child Nurs* 2003;28:10–15.
124. Taveras EM, Capra AM, Braveman PA, Jensvold NG, Escobar GJ, Lieu TA. Clinician support and psychosocial risk factors associated with breastfeeding discontinuation. *Pediatrics* 2003;112:108–115.
125. Pletta KH, Eglash A, Choby K. Benefits of breastfeeding: a review for physicians. *WMJ* 2000;99:55–58.
126. Isabella PH, Isabella RA. Correlates of successful breastfeeding: a study of social and personal factors. *J Hum Lact* 1994;10:257–264.
127. Williams EL, Pan E. Breastfeeding initiation among a low income multiethnic population in northern California: an exploratory study. *J Hum Lact* 1994;10:245–251.
128. Lawson K, Tulloch MI. Breastfeeding duration: prenatal intentions and postnatal practices. *J Adv Nurs* 1995;22: 841–849.
129. Johnston ML, Esposito N. Barriers and facilitators for breastfeeding among working women in the United States. *J Obstet Gynecol Neonatal Nurs* 2007;36:9–20.
130. Hawkins SS, Griffiths LJ, Dezateux C, Law C; Millennium Cohort Study Child Health Group. Maternal employment and breast-feeding initiation: findings from the Millennium Cohort Study. *Paediatr Perinat Epidemiol* 2007;21:242–247.
131. Kimbro RT. On-the-job moms: work and breastfeeding initiation and duration for a sample of low-income women. *Matern Child Health J* 2006;10:19–26.
132. Society for Human Resource Management. 2009 Employee benefits: examining employee benefits in a fiscally challenging economy. Available at: [www.shrm.org/Research/SurveyFindings/Articles/Documents/09-0295\\_Employee\\_Benefits\\_Survey\\_Report\\_spread\\_fnl.pdf](http://www.shrm.org/Research/SurveyFindings/Articles/Documents/09-0295_Employee_Benefits_Survey_Report_spread_fnl.pdf). Accessed July 21, 2010.
133. Rojjanasrirat W. Working women's breastfeeding experiences. *MCN Am J Matern Child Nurs* 2004; 29:222–227.

134. Miller NH, Miller DJ, Chism M. Breastfeeding practices among resident physicians. *Pediatrics* 1996;98:434–437.
135. Stevens KV, Janke J. Breastfeeding experiences of active duty military women. *Mil Med* 2003;168:380–384.
136. Thompson PE, Bell P. Breast-feeding in the workplace: how to succeed. *Issues Comp Pediatr Nurs* 1997;20:1–9.
137. Witters-Green R. Increasing breastfeeding rates in working mothers. *Families System Health* 2003;21:415–434.
138. Fein SB, Roe B. The effect of work status on initiation and duration of breast-feeding. *Am J Public Health* 1998;88:1042–1046.
139. Arthur CR, Saenz RB, Replogle WH. The employment-related breastfeeding decisions of physician mothers. *J Miss State Med Assoc* 2003;44:383–387.
140. Roe B, Whittington LA, Fein SB, Teisl MF. Is there competition between breastfeeding and maternal employment? *Demography* 1999;36:157–171.
141. Brown CA, Poag S, Kasprzycki C. Exploring large employers' and small employers' knowledge, attitudes, and practices on breastfeeding support in the workplace. *J Hum Lact* 2001;17:39–46.
142. Scott JA, Landers MC, Hughes RM, Binns CW. Psychosocial factors associated with the abandonment of breastfeeding prior to hospital discharge. *J Hum Lact* 2001;17:24–30.
143. Renfrew MJ, McFadden A, Dykes F, Wallace LM, Abbott S, Burt S, et al. Addressing the learning deficit in breastfeeding: strategies for change. *Matern Child Nutr* 2006;2:239–244.
144. Dewey KG, Nommsen-Rivers LA, Heinig MJ, Cohen RJ. Risk factors for suboptimal infant breastfeeding behavior, delayed onset of lactation, and excess neonatal weight loss. *Pediatrics* 2003;112:607–619.
145. Swenne I, Ewald U, Gustafsson J, Sandberg E, Ostenson CG. Inter-relationship between serum concentrations of glucose, glucagon and insulin during the first two days of life in healthy newborns. *Acta Paediatr* 1994;83:915–919.
146. Bergevin Y, Dougherty C, Kramer MS. Do infant formula samples shorten the duration of breast-feeding? *Lancet* 1983;1:1148–1151.
147. DiGirolamo AM, Grummer-Strawn LM, Fein S. Maternity care practices: implications for breastfeeding. *Birth* 2001;28:94–100.
148. Murray EK, Ricketts S, Dellaport J. Hospital practices that increase breastfeeding duration: results from a population-based study. *Birth* 2007;34:202–211.
149. Rosenberg KD, Eastham CA, Kasehagen LJ, Sandoval AP. Marketing infant formula through hospitals: the impact of commercial hospital discharge packs on breastfeeding. *Am J Public Health* 2008;98:290–295.
150. Dabrowski GA. Skin-to-skin contact: giving birth back to mothers and babies. *Nurs Womens Health* 2007;11:64–71.
151. Riordan J, Gill-Hopple K, Angeron J. Indicators of effective breastfeeding and estimates of breast milk intake. *J Hum Lact* 2005;21:406–412.
152. DiGirolamo AM, Grummer-Strawn LM, Fein SB. Effect of maternity-care practices on breastfeeding. *Pediatrics* 2008 Oct;122(Suppl 2):S43–S49.
153. Rowe-Murray HJ, Fisher JR. Baby-friendly hospital practices: cesarean section is a persistent barrier to early initiation of breastfeeding. *Birth* 2002;29:124–131.
154. Pérez-Escamilla R, Maulén-Radovan I, Dewey KG. The association between cesarean delivery and breast-feeding outcomes among Mexican women. *Am J Public Health* 1996;86:832–836.
155. Rajan L. The impact of obstetric procedures and analgesia/ anaesthesia during labour and delivery on breast feeding. *Midwifery* 1994;10:87–103.
156. Leung GM, Lam TH, Ho LM. Breast-feeding and its relation to smoking and mode of delivery. *Obstet Gynecol* 2002; 99:785–794.
157. Pechlivani F, Vassilakou T, Sarafidou J, Zachou T, Anastasiou CA, Sidossis LS. Prevalence and determinants of exclusive breastfeeding during hospital stay in the area of Athens, Greece. *Acta Paediatr* 2005;94:928–934.
158. Menacker F, Hamilton BE. Recent trends in cesarean delivery in the United States. NCHS data brief, no. 35. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2010.
159. Hamilton BE, Martin JA, Ventura SJ. Births: preliminary data for 2007. *National Vital Statistics Reports* 2009;57(12):1–23. Available at: [http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57\\_12.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_12.pdf). Accessed July 8, 2010.
160. Szucs KA, Miracle DJ, Rosenman MB. Breastfeeding knowledge, attitudes, and practices among providers in a medical home. *Breastfeed Med* 2009;4:31–42.
161. Taveras EM, Li R, Grummer-Strawn L, Richardson M, Marshall R, Régo VH, et al. Opinions and practices of clinicians associated with continuation of exclusive breastfeeding. *Pediatrics* 2004;113:e283–e290.
162. Feldman-Winter LB, Schanler RJ, O'Connor KG, Lawrence RA. Pediatricians and the promotion and support of breastfeeding. *Arch Pediatr Adolesc Med* 2008;162:1142–1149.
163. Wallace LM, Kosmala-Anderson J. A training needs survey of doctors' breastfeeding support skills in England. *Matern Child Nutr* 2006;2:217–231.
164. Freed GL, Clark SJ, Sorenson J, Lohr JA, Cefalo R, Curtis P. National assessment of physicians' breast-feeding knowledge, attitudes, training, and experience. *JAMA* 1995;273:472–476.
165. Schanler RJ, O'Connor KG, Lawrence RA. Pediatricians' practices and attitudes regarding breastfeeding promotion. *Pediatrics* 1999;103:E35.
166. DiGirolamo A, Thompson N, Martorell R, Fein S, Grummer-Strawn L. Intention or experience? Predictors of continued breastfeeding. *Health Educ Behav* 2005; 32:208–226.
167. Anderson AS, Guthrie CA, Alder EM, Forsyth S, Howie PW, Williams FL. Rattling the plate—reasons and rationales for early weaning. *Health Educ Res* 2001;16:471–479.
168. U.S. Preventive Services Task Force. Primary care interventions to promote breastfeeding: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med* 2008;149:560–564.

32. U.S. Department of Health and Human Services. Report of the Surgeon General's workshop on breastfeeding & human lactation. Washington, DC: U.S. Department of Health and Human Services; 1984. Publication No. HRS-D-MC 84-2.
33. U.S. Department of Health and Human Services. Followup report: the Surgeon General's workshop on breastfeeding and human lactation. Washington, DC: U.S. Department of Health and Human Services; 1985. Publication No. HRS-D-MC 85-2.
34. Spisak S, Gross SS. Second followup to the Surgeon General's workshop on breastfeeding and human lactation. Washington, DC: National Center for Education in Maternal and Child Health; 1991.
35. World Health Organization. International code of marketing of breast-milk substitutes. 1981. Available at: [http://www.who.int/nutrition/publications/code\\_english.pdf](http://www.who.int/nutrition/publications/code_english.pdf). Accessed July 27, 2010.
36. United Nations Children's Fund, World Health Organization. Innocenti declaration on the protection, promotion and support of breastfeeding. Florence, Italy: UNICEF/WHO; 1990.
37. U.S. Department of Health and Human Services. HHS blueprint for action on breastfeeding. Washington, DC: U.S. Department of Health and Human Services, Office on Women's Health; 2000.
38. Martinez GA, Nalezienski JP. The recent trend in breastfeeding. *Pediatrics* 1979;64:686–692.
39. Ryan AS. The resurgence of breastfeeding in the United States. *Pediatrics* 1997;99(4):e12.
40. Ryan AS, Wenjun Z, Acosta A. Breastfeeding continues to increase into the new millennium. *Pediatrics* 2002; 110:1103–1109.
41. Centers for Disease Control and Prevention. Breastfeeding among U.S. children born 1999–2007, CDC National Immunization Survey. Available at: [http://www.cdc.gov/breastfeeding/data/NIS\\_data/index.htm](http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm). Accessed August 2, 2010.
42. Fein SB, Labiner-Wolfe J, Shealy KR, Li R, Chen J, Grummer-Strawn LM. Infant Feeding Practices Study II: study methods. *Pediatrics* 2008;122(Suppl 2):S28–S35.
43. Grummer-Strawn LM, Scanlon KS, Fein SB. Infant feeding and feeding transitions during the first year of life. *Pediatrics* 2008;122(Suppl 2):S36–S42.
44. Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #3: hospital guidelines for the use of supplementary feedings in the healthy term breastfed neonate, revised 2009. *Breastfeed Med* 2009;4:175–182.
45. Centers for Disease Control and Prevention. Racial and ethnic differences in breastfeeding initiation and duration, by state—National Immunization Survey, United States, 2004–2008. *MMWR Morb Mortal Wkly Rep* 2010;59:327–334.
46. Grummer-Strawn LM, Shealy K. Progress in protecting, promoting, and supporting breastfeeding: 1984–2009. *Breastfeeding Med* 2009;4:S31–S39.
47. Oyeku SO. A closer look at racial/ethnic disparities in breastfeeding. Commentary on “Breastfeeding advice given to African American and white women by physicians and WIC counselors.” *Public Health Rep* 2003;118:377–378.
48. Satcher DS. DHHS blueprint for action on breastfeeding. *Public Health Rep* 2001;116:72–73.
49. Fein SB, Mandal B, Roe BE. Success of strategies for combining employment and breastfeeding. *Pediatrics* 2008;122(Suppl 2):S56–S62.
50. Ortiz J, McGilligan K, Kelly P. Duration of breast milk expression among working mothers enrolled in an employer-sponsored lactation program. *Pediatr Nurs* 2004;30:111–119.
51. Centers for Disease Control and Prevention. Breastfeeding trends and updated national health objectives for exclusive breastfeeding—United States, birth years 2000–2004. *MMWR Morb Mortal Wkly Rep* 2007;56:760–763.
52. Centers for Disease Control and Prevention. Breastfeeding-related maternity practices at hospitals and birth centers—United States, 2007. *MMWR Morb Mortal Wkly Rep* 2008;57:621–625.
53. Brown JD, Peuchaud SR. Media and breastfeeding: friend or foe? *Int Breastfeed J* 2008;3:15.
54. Bentley ME, Dee DL, Jensen JL. Breastfeeding among low income, African-American women: power, beliefs and decision making. *J Nutr* 2003;133(Suppl):305S–309S.
55. Hausman B. Mother's milk: breastfeeding controversies in American culture. New York: Routledge; 2003.
56. Beal AC, Kuhlthau K, Perrin JM. Breastfeeding advice given to African American and white women by physicians and WIC counselors. *Public Health Rep* 2003;118:368–376.
57. Thulier D. Breastfeeding in America: a history of influencing factors. *J Hum Lact* 2009;25:85–94.
58. Guendelman S, Kosa JL, Pearl M, Graham S, Goodman J, Kharrazi M. Juggling work and breastfeeding: effects of maternity leave and occupational characteristics. *Pediatrics* 2009;123:e38–e46.
59. Mills SP. Workplace lactation programs: a critical element for breastfeeding mothers' success. *AAOHN J* 2009;57:227–231.
60. Kogan MD, Singh GK, Dee DL, Belanoff C, Grummer-Strawn LM. Multivariate analysis of state variation in breastfeeding rates in the United States. *Am J Public Health* 2008;98:1872–1880.
61. McCann MF, Baydar N, Williams RL. Breastfeeding attitudes and reported problems in a national sample of WIC participants. *J Hum Lact* 2007;23:314–324.
62. Li R, Rock VJ, Grummer-Strawn L. Changes in public attitudes toward breastfeeding in the United States, 1999–2003. *J Am Diet Assoc* 2007;107:122–127.
63. Gibson ME. Getting back to basics: the curious history of breastfeeding in the United States. *Am J Nursing* 2005; 105:72c–73c.
64. Moore ER, Anderson GC, Bergman N. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Syst Rev* 2007(3):CD003519.
65. McFadden A, Toole G. Exploring women's views of breastfeeding: a focus group study within an area with high levels of socio-economic deprivation. *Matern Child Nutr* 2006;2(3)156–168.

66. Mozingo JN, Davis MW, Droppleman PG, Meredith A. "It wasn't working." Women's experiences with short-term breastfeeding. *MCN Am J Matern Child Nurs* 2000;25:120–126.
67. Bunik M, Clark L, Zimmer LM, Jimenez LM, O'Connor ME, Crane LA, et al. Early infant feeding decisions in low-income Latinas. *Breastfeed Med* 2006;1:225–235.
68. Gill SL, Reifsnider E, Mann AR, Villarreal P, Tinkle MB. Assessing infant breastfeeding beliefs among low-income Mexican Americans. *J Perinat Educ* 2004;13:39–50.
69. Gill SL. Breastfeeding by Hispanic women. *J Obstet Gynecol Neonatal Nurs* 2009;38:244–252.
70. Rivera AF, Dávila Torres RR, Parrilla Rodríguez AM, de Longo IM, Gorrín Peralta JJ. Exploratory study: knowledge about the benefits of breastfeeding and barriers for initiation in mothers of children with spina bifida. *Matern Child Health J* 2008;12(6):734–738.
71. Li R, Fridinger F, Grummer-Strawn L. Public perceptions on breastfeeding constraints. *J Hum Lact* 2002;18:227–235.
72. Dodgson JE, Duckett L, Garwick A, Graham BL. An ecological perspective of breastfeeding in an indigenous community. *J Nurs Scholarsh* 2002;34:235–241.
73. McIntyre E, Hiller JE, Turnbull D. Community attitudes to infant feeding. *Breastfeed Rev* 2001;9(3):27–33.
74. Libbus K, Bush TA, Hockman NM. Breastfeeding beliefs of low-income primigravidae. *Int J Nurs Stud* 1997;34:144–150.
75. Zimmerman DR, Guttman N. "Breast is best": knowledge among low-income mothers is not enough. *J Hum Lact* 2001;17:14–19.
76. Stewart-Knox B, Gardiner K, Wright M. What is the problem with breast-feeding? A qualitative analysis of infant feeding perceptions. *J Hum Nutr Diet* 2003;16:265–273.
77. Dykes F, Moran VH, Burt S, Edwards J. Adolescent mothers and breastfeeding: experiences and support needs—an exploratory study. *J Hum Lact* 2003;19:391–401.
78. Sikorski J, Renfrew MJ, Pindoria S, Wade A. Support for breastfeeding mothers: a systematic review. *Paediatr Perinat Epidemiol* 2003;17(4):407–417.
79. Sussner KM, Lindsay AC, Peterson KE. The influence of acculturation on breast-feeding initiation and duration in low-income women in the US. *J Biosoc Sci* 2008;40:673–696.
80. Gorman JR, Madlensky L, Jackson DJ, Ganiats TG, Boies E. Early postpartum breastfeeding and acculturation among Hispanic women. *Birth* 2007;34:308–315.
81. Harley K, Stamm NL, Eskenazi B. The effect of time in the U.S. on the duration of breastfeeding in women of Mexican descent. *Matern Child Health J* 2007;11:119–125.
82. Celi AC, Rich-Edwards JW, Richardson MK, Kleinman KP, Gillman MW. Immigration, race/ethnicity, and social and economic factors as predictors of breastfeeding initiation. *Arch Pediatr Adolesc Med* 2005;159:255–260.
83. Gibson MV, Diaz VA, Mainous AG III, Geesey ME. Prevalence of breastfeeding and acculturation in Hispanics: results from NHANES 1999–2000 study. *Birth* 2005;32:93–98.
84. Anderson AK, Damio G, Himmelgreen DA, Peng YK, Segura-Pérez S, Pérez-Escamilla R. Social capital, acculturation, and breastfeeding initiation among Puerto Rican women in the United States. *J Hum Lact* 2004;20:39–45.
85. Rassin DK, Markides KS, Baranowski T, Richardson CJ, Mikrut WD, Bee DE. Acculturation and the initiation of breastfeeding. *J Clin Epidemiol* 1994;47:739–746.
86. Romero-Gwynn E. Breast-feeding pattern among Indochinese immigrants in northern California. *Am J Dis Child* 1989;143:804–808.
87. U.S. Government Accountability Office. Report to Congressional addressees: breastfeeding: some strategies used to market infant formula may discourage breastfeeding; state contracts should better protect against misuse of WIC name. Washington, DC: U.S. Government Accountability Office; 2006. Available at: <http://www.gao.gov/new.items/d06282.pdf>. Accessed July 26, 2010.
88. Wilmoth TA, Elder JP. An assessment of research on breastfeeding promotion strategies in developing countries. *Soc Sci Med* 1995;41:579–594.
89. Schlickau JM, Wilson ME. Breastfeeding as health-promoting behaviour for Hispanic women: literature review. *J Adv Nurs* 2005;52:200–210.
90. Heinig MJ, Follett JR, Ishii KD, Kavanagh-Prochaska K, Cohen R, Panchula J. Barriers to compliance with infant-feeding recommendations among low-income women. *J Hum Lact* 2006;22:27–38.
91. Higgins B. Puerto Rican cultural beliefs: influence on infant feeding practices in western New York. *J Transcult Nurs* 2000;11:19–30.
92. Arora S, McJunkin C, Wehrer J, Kuhn P. Major factors influencing breastfeeding rates: mother's perception of father's attitude and milk supply. *Pediatrics* 2000;106:E67.
93. Wolfberg AJ, Michels KB, Shields W, O'Campo P, Bronner Y, Bienstock J. Dads as breastfeeding advocates: results from a randomized controlled trial of an educational intervention. *Am J Obstet Gynecol* 2004;191:708–712.
94. Dennis CL. Breastfeeding initiation and duration: a 1990–2000 literature review. *J Obstet Gynecol Neonatal Nurs* 2002;31:12–32.
95. Scott JA, Binns CW. Factors associated with the initiation and duration of breastfeeding: a review of the literature. *Breastfeeding Rev* 1999;7:5–16.
96. Bar-Yam NB, Darby L. Fathers and breastfeeding: a review of the literature. *J Hum Lact* 1997;13:45–50.
97. Pisacane A, Continisio GI, Aldinucci M, D'Amora S, Continisio P. A controlled trial of the father's role in breastfeeding promotion. *Pediatrics* 2005;116:e494–e498.
98. Li R, Hsia J, Fridinger F, Hussain A, Benton-Davis S, Grummer-Strawn L. Public beliefs about breastfeeding policies in various settings. *J Am Diet Assoc* 2004;104:1162–1168.

99. Vance MR. Breastfeeding legislation in the United States: a general overview and implications for helping mothers. *Leaven* 2005;41:51–54. Available at <http://www.lli.org/llleaderweb/LV/LVJunJul05p51.html>. Accessed March 10, 2010.
100. McIntyre E, Turnbull D, Hiller JE. Breastfeeding in public places. *J Hum Lact* 1999;15:131–135.
101. Khoury AJ, Moazzem SW, Jarjoura CM, Carothers C, Hinton A. Breast-feeding initiation in low-income women: role of attitudes, support, and perceived control. *Womens Health Issues* 2005;15:64–72.
102. Raisler J. Against the odds: Breastfeeding experiences of low income mothers. *J Midwifery Womens Health* 2000;45:253–263.
103. Hannon PR, Willis SK, Bishop-Townsend V, Martinez IM, Scrimshaw SC. African-American and Latina adolescent mothers' infant feeding decisions and breastfeeding practices: a qualitative study. *J Adolesc Health* 2000;26:399–407.
104. Brownell K, Hutton L, Hartman J, Dabrow S. Barriers to breastfeeding among African American adolescent mothers. *Clin Pediatr. (Phila)* 2002;41:669–673.
105. Mitra AK, Khoury AJ, Hinton AW, Carothers C. Predictors of breastfeeding intention among low-income women. *Matern Child Health J* 2004;8:65–70.
106. Daniels MJ, Parrot RL. Prenatal care from the woman's perspective: a thematic analysis of the newspaper media. In: Parrot RL, Condit CM, editors. *Evaluating women's health messages: a resource book*. Thousand Oaks, CA: Sage; 1996. pp. 222–233.
107. Shannon T, O'Donnell MJ, Skinner K. Breastfeeding in the 21st century: overcoming barriers to help women and infants. *Nurs Womens Health* 2007;11:568–575.
108. Frerichs L, Andsager JL, Campo S, Aquilino M, Stewart Dyer C. Framing breastfeeding and formula feeding messages in popular U.S. magazines. *Women Health* 2006;44:95–118.
109. Swanson V, Power K, Kaur B, Carter H, Shepherd K. The impact of knowledge and social influences on adolescents' breast-feeding beliefs and intentions. *Public Health Nutr* 2006;9:297–305.
110. Blair-Stevens T, Cork S. "Who wants to eat in a toilet?" A social marketing approach to breast-feeding in public places and at work. *J Fam Health Care* 2008;18:167–170.
111. McIntyre E, Turnbull D, Hiller JE. Suitability of breastfeeding facilities outside the home: an audit of baby change rooms in shopping centres. *Breastfeed Rev* 1999;7:17–20.
112. Li R, Fein SB, Chen J, Grummer-Strawn LM. Why mothers stop breastfeeding: mothers' self-reported reasons for stopping during the first year. *Pediatrics* 2008 Oct;122 (Suppl 2):S69–S76.
113. Gaiva MAM, Medeiros LS. Insufficient lactation: a proposal for action by nurses. *Ciencia* 2006;5:255–262.
114. Stuff JE, Nichols BL. Nutrient intake and growth performance of older infants fed human milk. *J Pediatr* 1989;115:959–968.
115. Dewey KG, Heinig J, Nommsen LA, Lonnerdal B. Adequacy of energy intake among breast-fed infants in the DARLING study: relationships to growth velocity, morbidity, and activity levels. *J Pediatr* 1991;119:538–547.
116. Arlotti JP, Cottrell BH, Lee SH, Curtin JJ. Breastfeeding among low-income women with and without peer support. *J Community Health Nurs* 1998;15:163–178.
117. Amir LH. Breastfeeding—managing “supply” difficulties. *Aust Fam Physician* 2006;35:686–689.
118. Butte NF, Garza C, Smith EO, Nichols BL. Human milk intake and growth in exclusively breast-fed infants. *J Pediatr* 1984;104:187–195.
119. Neville MC, Keller R, Seacat J, Lutes V, Neifert M, Casey C, et al. Studies in human lactation: milk volumes in lactating women during the onset of lactation and full lactation. *Am J Clin Nutr* 1988;48:1375–1386.
120. Powers NG. Slow weight gain and low milk supply in the breastfeeding dyad. *Clin Perinatol* 1999;26:399–430.
121. Dykes F, Williams C. Falling by the wayside: a phenomenological exploration of perceived breast-milk inadequacy in lactating women. *Midwifery* 1999;15: 232–246.
122. Hailes JF, Wellard SJ. Support for breastfeeding in the first postpartum month: perceptions of breastfeeding women. *Breastfeed Rev* 2000;8:5–9.
123. Hong TM, Callister LC, Schwartz R. First time mothers' views of breastfeeding support from nurses. *MCN Am J Matern Child Nurs* 2003;28:10–15.
124. Taveras EM, Capra AM, Braveman PA, Jensvold NG, Escobar GJ, Lieu TA. Clinician support and psychosocial risk factors associated with breastfeeding discontinuation. *Pediatrics* 2003;112:108–115.
125. Pletta KH, Eglash A, Choby K. Benefits of breastfeeding: a review for physicians. *WMJ* 2000;99:55–58.
126. Isabella PH, Isabella RA. Correlates of successful breastfeeding: a study of social and personal factors. *J Hum Lact* 1994;10:257–264.
127. Williams EL, Pan E. Breastfeeding initiation among a low income multiethnic population in northern California: an exploratory study. *J Hum Lact* 1994;10:245–251.
128. Lawson K, Tulloch MI. Breastfeeding duration: prenatal intentions and postnatal practices. *J Adv Nurs* 1995;22: 841–849.
129. Johnston ML, Esposito N. Barriers and facilitators for breastfeeding among working women in the United States. *J Obstet Gynecol Neonatal Nurs* 2007;36:9–20.
130. Hawkins SS, Griffiths LJ, Dezateux C, Law C; Millennium Cohort Study Child Health Group. Maternal employment and breast-feeding initiation: findings from the Millennium Cohort Study. *Paediatr Perinat Epidemiol* 2007;21:242–247.
131. Kimbro RT. On-the-job moms: work and breastfeeding initiation and duration for a sample of low-income women. *Matern Child Health J* 2006;10:19–26.
132. Society for Human Resource Management. 2009 Employee benefits: examining employee benefits in a fiscally challenging economy. Available at: [www.shrm.org/Research/SurveyFindings/Articles/Documents/09-0295\\_Employee\\_Benefits\\_Survey\\_Report\\_spread\\_fnl.pdf](http://www.shrm.org/Research/SurveyFindings/Articles/Documents/09-0295_Employee_Benefits_Survey_Report_spread_fnl.pdf). Accessed July 21, 2010.
133. Rojjanasrirat W. Working women's breastfeeding experiences. *MCN Am J Matern Child Nurs* 2004; 29:222–227.

134. Miller NH, Miller DJ, Chism M. Breastfeeding practices among resident physicians. *Pediatrics* 1996;98:434–437.
135. Stevens KV, Janke J. Breastfeeding experiences of active duty military women. *Mil Med* 2003;168:380–384.
136. Thompson PE, Bell P. Breast-feeding in the workplace: how to succeed. *Issues Comp Pediatr Nurs* 1997;20:1–9.
137. Witters-Green R. Increasing breastfeeding rates in working mothers. *Families System Health* 2003;21:415–434.
138. Fein SB, Roe B. The effect of work status on initiation and duration of breast-feeding. *Am J Public Health* 1998;88:1042–1046.
139. Arthur CR, Saenz RB, Replogle WH. The employment-related breastfeeding decisions of physician mothers. *J Miss State Med Assoc* 2003;44:383–387.
140. Roe B, Whittington LA, Fein SB, Teisl MF. Is there competition between breastfeeding and maternal employment? *Demography* 1999;36:157–171.
141. Brown CA, Poag S, Kasprzycki C. Exploring large employers' and small employers' knowledge, attitudes, and practices on breastfeeding support in the workplace. *J Hum Lact* 2001;17:39–46.
142. Scott JA, Landers MC, Hughes RM, Binns CW. Psychosocial factors associated with the abandonment of breastfeeding prior to hospital discharge. *J Hum Lact* 2001;17:24–30.
143. Renfrew MJ, McFadden A, Dykes F, Wallace LM, Abbott S, Burt S, et al. Addressing the learning deficit in breastfeeding: strategies for change. *Matern Child Nutr* 2006;2:239–244.
144. Dewey KG, Nommsen-Rivers LA, Heinig MJ, Cohen RJ. Risk factors for suboptimal infant breastfeeding behavior, delayed onset of lactation, and excess neonatal weight loss. *Pediatrics* 2003;112:607–619.
145. Swenne I, Ewald U, Gustafsson J, Sandberg E, Ostenson CG. Inter-relationship between serum concentrations of glucose, glucagon and insulin during the first two days of life in healthy newborns. *Acta Paediatr* 1994;83:915–919.
146. Bergevin Y, Dougherty C, Kramer MS. Do infant formula samples shorten the duration of breast-feeding? *Lancet* 1983;1:1148–1151.
147. DiGirolamo AM, Grummer-Strawn LM, Fein S. Maternity care practices: implications for breastfeeding. *Birth* 2001;28:94–100.
148. Murray EK, Ricketts S, Dellaport J. Hospital practices that increase breastfeeding duration: results from a population-based study. *Birth* 2007;34:202–211.
149. Rosenberg KD, Eastham CA, Kasehagen LJ, Sandoval AP. Marketing infant formula through hospitals: the impact of commercial hospital discharge packs on breastfeeding. *Am J Public Health* 2008;98:290–295.
150. Dabrowski GA. Skin-to-skin contact: giving birth back to mothers and babies. *Nurs Womens Health* 2007;11:64–71.
151. Riordan J, Gill-Hopple K, Angeron J. Indicators of effective breastfeeding and estimates of breast milk intake. *J Hum Lact* 2005;21:406–412.
152. DiGirolamo AM, Grummer-Strawn LM, Fein SB. Effect of maternity-care practices on breastfeeding. *Pediatrics* 2008 Oct;122(Suppl 2):S43–S49.
153. Rowe-Murray HJ, Fisher JR. Baby-friendly hospital practices: cesarean section is a persistent barrier to early initiation of breastfeeding. *Birth* 2002;29:124–131.
154. Pérez-Escamilla R, Maulén-Radovan I, Dewey KG. The association between cesarean delivery and breast-feeding outcomes among Mexican women. *Am J Public Health* 1996;86:832–836.
155. Rajan L. The impact of obstetric procedures and analgesia/ anaesthesia during labour and delivery on breast feeding. *Midwifery* 1994;10:87–103.
156. Leung GM, Lam TH, Ho LM. Breast-feeding and its relation to smoking and mode of delivery. *Obstet Gynecol* 2002; 99:785–794.
157. Pechlivani F, Vassilakou T, Sarafidou J, Zachou T, Anastasiou CA, Sidossis LS. Prevalence and determinants of exclusive breastfeeding during hospital stay in the area of Athens, Greece. *Acta Paediatr* 2005;94:928–934.
158. Menacker F, Hamilton BE. Recent trends in cesarean delivery in the United States. NCHS data brief, no. 35. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2010.
159. Hamilton BE, Martin JA, Ventura SJ. Births: preliminary data for 2007. *National Vital Statistics Reports* 2009;57(12):1–23. Available at: [http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57\\_12.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_12.pdf). Accessed July 8, 2010.
160. Szucs KA, Miracle DJ, Rosenman MB. Breastfeeding knowledge, attitudes, and practices among providers in a medical home. *Breastfeed Med* 2009;4:31–42.
161. Taveras EM, Li R, Grummer-Strawn L, Richardson M, Marshall R, Régo VH, et al. Opinions and practices of clinicians associated with continuation of exclusive breastfeeding. *Pediatrics* 2004;113:e283–e290.
162. Feldman-Winter LB, Schanler RJ, O'Connor KG, Lawrence RA. Pediatricians and the promotion and support of breastfeeding. *Arch Pediatr Adolesc Med* 2008;162:1142–1149.
163. Wallace LM, Kosmala-Anderson J. A training needs survey of doctors' breastfeeding support skills in England. *Matern Child Nutr* 2006;2:217–231.
164. Freed GL, Clark SJ, Sorenson J, Lohr JA, Cefalo R, Curtis P. National assessment of physicians' breast-feeding knowledge, attitudes, training, and experience. *JAMA* 1995;273:472–476.
165. Schanler RJ, O'Connor KG, Lawrence RA. Pediatricians' practices and attitudes regarding breastfeeding promotion. *Pediatrics* 1999;103:E35.
166. DiGirolamo A, Thompson N, Martorell R, Fein S, Grummer-Strawn L. Intention or experience? Predictors of continued breastfeeding. *Health Educ Behav* 2005; 32:208–226.
167. Anderson AS, Guthrie CA, Alder EM, Forsyth S, Howie PW, Williams FL. Rattling the plate—reasons and rationales for early weaning. *Health Educ Res* 2001;16:471–479.
168. U.S. Preventive Services Task Force. Primary care interventions to promote breastfeeding: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med* 2008;149:560–564.

169. Grassley J, Eschiti V. Grandmother breastfeeding support: what do mothers need and want? *Birth* 2008;35:329–335.
170. U.S. Department of Labor, Bureau of Labor Statistics. Table 6. Employment status of mothers with own children under 3 years old by single year of age of youngest child and marital status, 2008–09 annual averages; 2010. Available at: <http://www.bls.gov/news.release/famee.t06.htm>. Accessed July 20, 2010.
171. Olson BH, Haider SJ, Vangjel L, Bolton TA, Gold JG. A quasi-experimental evaluation of a breastfeeding support program for low income women in Michigan. *Matern Child Health J* 2010;14:86–93.
172. Yun S, Liu Q, Mertzlufft K, Kruse C, White M, Fuller P, et al. Evaluation of the Missouri WIC (Special Supplemental Nutrition Program for Women, Infants, and Children) breast-feeding peer counselling programme. *Public Health Nutr* 2010;13:229–237.
173. Anderson AK, Damio G, Young S, Chapman DJ, Pérez-Escamilla R. A randomized trial assessing the efficacy of peer counseling on exclusive breastfeeding in a predominantly Latina low-income community. *Arch Pediatr Adolesc Med* 2005;159:836–841.
174. Chapman DJ, Damio G, Young S, Pérez-Escamilla R. Effectiveness of breastfeeding peer counseling in a low-income, predominantly Latina population: a randomized controlled trial. *Arch Pediatr Adolesc Med* 2004;158:897–902.
175. U.S. Department of Agriculture, Food and Nutrition Service. Fathers supporting breastfeeding. Available at: <http://www.fns.usda.gov/wic/fathers/supportingbreastfeeding.htm>. Accessed July 9, 2010.
176. Stremler J, Lovera D. Insight from a breastfeeding peer support pilot program for husbands and fathers of Texas WIC participants. *J Hum Lact* 2004;20:417–422.
177. Ingram J, Johnson D. A feasibility study of an intervention to enhance family support for breast feeding in a deprived area in Bristol, UK. *Midwifery* 2004;20:367–379.
178. Bentley ME, Caulfield LE, Gross SM, Bronner Y, Jensen J, Kessler LA, et al. Sources of influence on intention to breastfeed among African-American women at entry to WIC. *J Hum Lact* 1999;15:27–34.
179. Grassley JS, Nelms TP. The breast-feeding conversation: a philosophic exploration of support. *ANS Adv Nurs Sci* 2008;31:E55–E66.
180. U.S. Department of Agriculture, Food and Nutrition Service. Benefits and services: breastfeeding promotion and support in WIC. Available at: <http://www.fns.usda.gov/wic/Breastfeeding/breastfeedingmainpage.htm>. Accessed July 9, 2010.
181. Every Mother, Inc. Using Loving Support to grow and glow in WIC: breastfeeding training for local WIC staff; 2007. Available at: [http://everymother.org/training\\_programs.php](http://everymother.org/training_programs.php). Accessed July 9, 2010.
182. U.S. Department of Agriculture, Food and Nutrition Service. Loving Support makes breastfeeding work. Available at: [http://www.nal.usda.gov/wicworks/Learning\\_Center/loving\\_support.html](http://www.nal.usda.gov/wicworks/Learning_Center/loving_support.html). Accessed July 9, 2010.
183. U.S. Department of Agriculture. Breastfeeding: a magical bond of love. Available at: [http://www.nal.usda.gov/wicworks/Learning\\_Center/support\\_bond.html](http://www.nal.usda.gov/wicworks/Learning_Center/support_bond.html). Accessed July 9, 2010.
184. Patient Protection and Affordable Care Act of 2010, H.R. 3590, 111th Cong., 2nd Sess. (2010). Available at: <http://democrats.senate.gov/reform/patient-protection-affordable-care-act-as-passed.pdf>. Accessed July 20, 2010.
185. Chamberlain LB, Merewood A, Malone KL, Cimo S, Philipp BL. Calls to an inner-city hospital breastfeeding telephone support line. *J Hum Lact* 2005;21:53–88.
186. Parrilla-Rodríguez AM, Dávila Torres R, Gorrín-Peralta JJ. Profile of calls to a breastfeeding clinic information and help telephone line. *P R Health Sci J* 2001;20:377–381.
187. Cramton R, Zain-Ul-Abideen M, Whalen B. Optimizing successful breastfeeding in the newborn. *Curr Opin Pediatr* 2009;21:386–396.
188. Dennis CL, Kingston D. A systematic review of telephone support for women during pregnancy and the early postpartum period. *J Obstet Gynecol Neonatal Nurs* 2008;37:301–314.
189. Britton C, McCormick FM, Renfrew MJ, Wade A, King SE. Support for breastfeeding mothers. *Cochrane Database Syst Rev* 2007(1):CD001141.
190. Morrow AL, Guerrero ML, Shults J, Calva JJ, Lutter C, Bravo J, et al. Efficacy of home-based peer counselling to promote exclusive breastfeeding: a randomised controlled trial. *Lancet* 1999;353:1226–1231.
191. Chapman DJ, Morel K, Anderson AK, Damio G, Pérez-Escamilla R. Breastfeeding peer counseling: from efficacy through scale-up. *J Hum Lact* 2010;26:314–326.
192. Bronner Y, Barber T, Miele L. Breastfeeding peer counseling: rationale for the National WIC Survey. *J Hum Lact* 2001;17:135–139.
193. U.S. Department of Agriculture, Food and Nutrition Service. Using Loving Support to implement best practices in peer counseling. Available at: [http://www.nal.usda.gov/wicworks/Learning\\_Center/support\\_peer.html](http://www.nal.usda.gov/wicworks/Learning_Center/support_peer.html). July 9, 2010.
194. Hopkinson J, Gallagher MK. Assignment to a hospital-based breastfeeding clinic and exclusive breastfeeding among immigrant Hispanic mothers: a randomized, controlled trial. *J Hum Lact* 2009;25:287–296.
195. Howard C, Howard F, Lawrence R, Andresen E, DeBlicke E, Weitzman M. Office prenatal formula advertising and its effect on breast-feeding patterns. *Obstet Gynecol* 2000;95:296–303.
196. Dungy CI, Christensen-Szalanski J, Losch M, Russell D. Effect of discharge samples on duration of breast-feeding. *Pediatrics* 1992;90:233–237.
197. Howard CR, Howard FM, Weitzman M, Lawrence R. Antenatal formula advertising: another potential threat to breast-feeding. *Pediatrics* 1994;94:102–104.
198. Donnelly A, Snowden HM, Renfrew MJ, Woolridge MW. Commercial hospital discharge packs for breastfeeding women. *Cochrane Database Syst Rev* 2000(2):CD002075.
199. BusinessWire. Mead Johnson, maker of Enfamil, loses multi-million dollar false advertising case against store-brand infant formulas. Press release; December 2, 2009. Available at: [http://www.businesswire.com/portal/site/home/permalink/?ndmViewId=news\\_view&newsId=20091202006020&newsLang=en](http://www.businesswire.com/portal/site/home/permalink/?ndmViewId=news_view&newsId=20091202006020&newsLang=en). Accessed July 9, 2010.

200. Social Marketing Institute. Success stories: national WIC breastfeeding promotion project. Available at: <http://www.social-marketing.org/success/cs-nationalwic.html>. Accessed July 9, 2010.
201. U.S. Department of Health and Human Services, Office on Women's Health. National breastfeeding awareness campaign results: babies were born to be breastfed [presentation], 2009. Available at: [http://www.womenshealth.gov/breastfeeding/government-programs/national-breastfeeding-campaign/results/campaign\\_results.ppt](http://www.womenshealth.gov/breastfeeding/government-programs/national-breastfeeding-campaign/results/campaign_results.ppt). August 4, 2010.
202. Fox S, Jones S. The social life of health information: Americans' pursuit of health takes place within a widening network of both online and offline services. Available at: [http://www.pewinternet.org/-/media/Files/Reports/2009/PIP\\_Health\\_2009.pdf](http://www.pewinternet.org/-/media/Files/Reports/2009/PIP_Health_2009.pdf). Accessed July 27, 2010.
203. American Academy of Pediatrics, American College of Obstetricians and Gynecologists. Guidelines for perinatal care. 6th ed. Chicago: American Academy of Pediatrics; 2007.
204. California WIC Association, UC Davis Human Lactation Center. Depends on where you are born: California hospitals must close the gap in exclusive breastfeeding rates. 2008. Available at: <http://www.calwic.org/storage/documents/pk%212008/bfhospital2008.pdf>. Accessed December 27, 2010.
205. Stark AR, Lannon CM. Systems changes to prevent severe hyperbilirubinemia and promote breastfeeding: pilot approaches. *J Perinatol* 2009;29(Suppl 1):S53–S57.
206. Howard CR, Schaffer SJ, Lawrence RA. Attitudes, practices, and recommendations by obstetricians about infant feeding. *Birth* 1997;24:240–246.
207. DiGirolamo AM, Grummer-Strawn LM, Fein SB. Do perceived attitudes of physicians and hospital staff affect breastfeeding decisions? *Birth* 2003;30:94–100.
208. Centers for Disease Control and Prevention. National Survey of Maternity Practices in Infant Nutrition and Care. Available at: <http://www.cdc.gov/breastfeeding/data/mpinc/index.htm>. Accessed July 8, 2010.
209. Bystrova K, Matthesen AS, Vorontsov I, Widström AM, Ransjö-Arvidson AB, Uvnäs-Moberg K. Maternal axillar and breast temperature after giving birth: effects of delivery ward practices and relation to infant temperature. *Birth* 2007;34:291–300.
210. Fairbank L, O'Meara S, Renfrew MJ, Woolridge M, Sowden AJ, Lister-Sharp D. A systematic review to evaluate the effectiveness of interventions to promote the initiation of breastfeeding. *Health Technol Assess* 2000;4(25):1–171.
211. Pérez-Escamilla R, Segura-Millán S, Pollitt E, Dewey KG. Effect of the maternity ward system on the lactation success of low-income urban Mexican women. *Early Hum Dev* 1992;31:25–40.
212. Kersting M, Dulon M. Assessment of breast-feeding promotion in hospitals and follow-up survey of mother-infant pairs in Germany: the SuSe Study. *Public Health Nutr* 2002;5:547–552.
213. Blomquist HK, Jonsbo F, Serenius F, Persson LA. Supplementary feeding in the maternity ward shortens the duration of breast feeding. *Acta Paediatr* 1994;83:1122–1126.
214. Coutinho SB, de Lira PI, de Carvalho Lima M, Ashworth A. Comparison of the effect of two systems for the promotion of exclusive breastfeeding. *Lancet* 2005;366:1094–1100.
215. Illingworth RS, Stone DG, Jowett GH, Scott JF. Self-demand feeding in a maternity unit. *Lancet* 1952;1:683–687.
216. Vittoz JP, Labarere J, Castell M, Durand M, Pons JC. Effect of a training program for maternity ward professionals on duration of breastfeeding. *Birth* 2004;31:302–307.
217. World Health Organization, United Nation's Children's Fund. The Baby-Friendly Hospital Initiative—monitoring and reassessment: tools to sustain progress. Geneva: World Health Organization; 1999.
218. Joint Commission on Accreditation of Healthcare Organizations. Raising the bar with bundles: treating patients with an all-or-nothing standard. *Joint Commission perspectives on patient safety* 2006;6(4):5–6.
219. Salem-Schatz S, Peterson LE, Palmer RH, Clanton SM, Ezhuthachan S, Luttrell RC, et al. Barriers to first-week follow-up of newborns: findings from parent and clinician focus groups. *Jt Comm J Qual Saf* 2004;30:593–601.
220. Cherouny PH, Federico FA, Haraden C, Gullo SL, Resar R. Idealized design of perinatal care. IHI Innovation Series white paper. Cambridge, MA: Institute for Healthcare Improvement; 2005. Available at: <http://www.ihi.org/IHI/Results/WhitePapers/IdealizedDesignofPerinatalCareWhitePaper.htm>. Accessed July 19, 2010.
221. Baby-Friendly USA. The ten steps to successful breastfeeding. Available at: <http://www.babyfriendlyusa.org/eng/10steps.html>. Accessed July 15, 2010.
222. American Academy of Pediatrics. Safe and healthy beginnings: a resource toolkit for hospitals and physicians' offices. Elk Grove Village, IL: American Academy of Pediatrics. 2008. Available at: <http://practice.aap.org/content.aspx?aid=2577>. Accessed July 19, 2010.
223. Merewood A, Philipp BL. Peer counselors for breastfeeding mothers in the hospital setting: trials, training, tributes, and tribulations. *J Hum Lact* 2003;19:72–76.
224. Mickens AD, Modeste N, Montgomery S, Taylor M. Peer support and breastfeeding intentions among black WIC participants. *J Hum Lact* 2009;25:157–162.
225. Brown A, Raynor P, Lee M. Young mothers who choose to breast feed: the importance of being part of a supportive breast-feeding community. *Midwifery* 2009 Nov 4 [Epub ahead of print].
226. Philipp BL, Merewood A, Gerendas EJ, Bauchner H. Breastfeeding information in pediatric textbooks needs improvement. *J Hum Lact* 2004;20:206–210.
227. International Board of Lactation Consultant Examiners. Required education and experience. 2009. Available at: <http://americas.iblce.org/required-education-and-experience>. Accessed July 27, 2010.
228. Bonuck KA, Trombley M, Freeman K, McKee D. Randomized, controlled trial of a prenatal and postnatal lactation consultant intervention on duration and intensity of breastfeeding up to 12 months. *Pediatrics* 2005;116:1413–1426.

229. Castrucci BC, Hoover KL, Lim S, Maus KC. A comparison of breastfeeding rates in an urban birth cohort among women delivering infants at hospitals that employ and do not employ lactation consultants. *J Public Health Manag Pract* 2006;12:578–585.
230. Dweck N, Augustine M, Pandya D, Valdes-Greene R, Visintainer P, Brumberg HL. NICU lactation consultant increases percentage of outborn versus inborn babies receiving human milk. *J Perinatol* 2008;28:136–140.
231. Centers for Disease Control and Prevention. Breastfeeding Report Card—United States, 2009. Available at: <http://www.cdc.gov/Features/BreastFeedingData/>. Accessed August 3, 2010.
232. Mannel R, Mannel RS. Staffing for hospital lactation programs: recommendations from a tertiary care teaching hospital. *J Hum Lact* 2006;22:409–417.
233. Thurman SE, Allen PJ. Integrating lactation consultants into primary health care services: are lactation consultants affecting breastfeeding success? *Pediatr Nurs* 2008;34:419–425.
234. Martin JA, Hamilton BE, Sutton PD, Ventura SJ, Menacker F, Kirmeyer S, et al. Births: final data for 2006. *National Vital Stat Rep* 2009;57(7):1–102.
235. Chatterton RT Jr, Hill PD, Aldag JC, Hodges KR, Belknap SM, Zinaman MJ. Relation of plasma oxytocin and prolactin concentrations to milk production in mothers of preterm infants: influence of stress. *J Clin Endocrinol Metab* 2000;85:3661–3668.
236. Hill PD, Aldag JC, Chatterton RT. Initiation and frequency of expressing and milk production in mothers of non-nursing preterm infants. *J Hum Lact* 2001;17:9–13.
237. Boyd CA, Quigley MA, Brocklehurst P. Donor breast milk versus infant formula for preterm infants: systematic review and meta-analysis. *Arch Dis Child Fetal Neonatal Ed* 2007;92:F169–F175.
238. Lucas A, Cole TJ. Breast milk and neonatal necrotising enterocolitis. *Lancet* 1990;336:1519–1523.
239. McGuire W, Anthony MY. Donor human milk versus formula for preventing necrotising enterocolitis in preterm infants: systematic review. *Arch Dis Child Fetal Neonatal Ed* 2003;88:F11–F14.
240. Schanler RJ, Shulman RJ, Lau C. Feeding strategies for premature infants: beneficial outcomes of feeding fortified human milk versus preterm formula. *Pediatrics* 1999;103:1150–1157.
241. Schanler RJ, Lau C, Hurst NM, Smith EO. Randomized trial of donor human milk versus preterm formula as substitutes for mothers' own milk in the feeding of extremely premature infants. *Pediatrics* 2005;116:400–406.
242. Grave GD, Nelson SA, Walker WA, Moss RL, Dvorak B, Hamilton FA, et al. New therapies and preventive approaches for necrotizing enterocolitis: report of a research planning workshop. *Pediatr Res* 2007;62:510–514.
243. Blakely ML, Gupta H, Lally KP. Surgical management of necrotizing enterocolitis and isolated intestinal perforation in premature neonates. *Semin Perinatol* 2008;32:122–126.
244. Abdullah F, Zhang Y, Camp M, Mukherjee D, Gabre-Kidan A, Colombani PM, et al. Necrotizing enterocolitis in 20,822 infants: analysis of medical and surgical treatments. *Clin Pediatr* 2010;49:166–171.
245. Bisquera JA, Cooper TR, Berseth CL. Impact of necrotizing enterocolitis on length of stay and hospital charges in very low birth weight infants. *Pediatrics* 2002;109:423–428.
246. Arnold LD. The cost-effectiveness of using banked donor milk in the neonatal intensive care unit: prevention of necrotizing enterocolitis. *J Hum Lact* 2002;18:172–177.
247. Human Milk Banking Association of North America. From the president. *HMBANA Matters* 2009;6(2).
248. Arnold LD. Human milk in the NICU: policy into practice. Sudbury, MA: Jones and Bartlett Publishers; 2010.
249. Human Milk Banking Association of North America. 2009 Guidelines for the establishment and operation of a donor human milk bank. Raleigh, NC: Human Milk Banking Association of North America; 2009.
250. Human Milk Banking Association of North America. How much is enough? *HMBANA Matters* 2008 March;5(7).
251. Arnold LD. The ethics of donor human milk banking. *Breastfeed Med* 2006;1:3–13.
252. Arnold LD. U.S. health policy and access to banked donor human milk. *Breastfeed Med* 2008;3:221–229.
253. U.S. Department of Labor, Bureau of Labor Statistics. Table 1. Employment status of the civilian noninstitutional population by age and sex, 2004 annual averages. Women in the labor force: a databook; 2005. Report 985. Available at: <http://www.bls.gov/cps/wlf-databook2005.htm>. Accessed July 20, 2010.
254. Johnson TD. Maternity leave and employment patterns of first time mothers: 1961–2003. *Current Population Report P70-113*. Washington, DC: U.S. Census Bureau; 2008.
255. Flanagan K, West J. Children born in 2001: first results from the base year of the Early Childhood Longitudinal Study, Birth Cohort (ECLS–B) (NCES 2005–036). Washington, DC: National Center for Education Statistics; 2004. Available at: <http://www.childcaresearch.org/location/ccrca4623>. Accessed July 27, 2010.
256. U.S. Child Care Bureau. Child care and development fund (CCDF): report to Congress. Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families; 2003. Available at: <http://www.acf.hhs.gov/programs/ccb/ccdf/rtc/rtc2001/CCDFreport.pdf>. Accessed July 20, 2010.
257. Chatterji P, Frick KD. Does returning to work after childbirth affect breastfeeding practices? *Rev Econ Househ* 2005;3:315–335.
258. Li R, Darling N, Maurice E, Barker L, Grummer-Strawn LM. Breastfeeding rates in the United States by characteristics of the child, mother, or family: the 2002 National Immunization Survey. *Pediatrics* 2005;115:e31–e37.
259. Mandal B, Roe BE, Fein SB. The differential effects of full-time and part-time work status on breastfeeding. *Health Policy* 2010;97:79–86.
260. Gielen AC, Faden RR, O'Campo P, Brown CH, Paige DM. Maternal employment during the early postpartum period: effects on initiation and continuation of breastfeeding. *Pediatrics* 1991;87:298–305.
261. Kurinij N, Shiono PH, Ezrine SF, Rhoads GG. Does maternal employment affect breast-feeding? *Am J Public Health* 1989;79:1247–1250.

262. Lindberg LD. Trends in the relationship between breastfeeding and postpartum employment in the United States. *Soc Biol* 1996;43:191–202.
263. Lindberg LD. Women's decisions about breastfeeding and maternal employment. *J Marriage Fam* 1996;58:239–251.
264. Ryan AS, Zhou WJ, Arensberg MB. The effect of employment status on breastfeeding in the United States. *Womens Health Issues* 2006;16:243–251.
265. Visness CM, Kennedy KI. Maternal employment and breastfeeding: findings from the 1988 National Maternal and Infant Health Survey. *Am J Public Health* 1997;87:945–950.
266. Berger LM, Hill J, Waldfogel J. Maternity leave, early maternal employment and child health and development in the U.S. *Econ J* 2005;115:F29–F47.
267. Whaley SE, Meehan K, Lange L, Slusser W, Jenks E. Predictors of breastfeeding duration for employees of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). *J Am Diet Assoc* 2002;102:1290–1293.
268. Cohen R, Mrtek MB. The impact of two corporate lactation programs on the incidence and duration of breast-feeding by employed mothers. *Am J Health Promot* 1994;8:436–441.
269. Smillie CM. Baby-led breastfeeding: a neurobehavioral model for understanding how infants learn to feed [presentation]. HealthConnectOne conference: Birth, Breastfeeding and Beyond, Chicago, IL, September 24, 2009.
270. Perez A, Petersen S. Meeting the needs of the youngest infants in child care. *Zero to Three* 2009;29:13–17.
271. Heymann J, Earle A, Hayes J. *The Work, Family, and Equity Index: how does the United States measure up?* Montreal, Canada: Project on Global Working Families. Available at: <http://www.mcgill.ca/files/ihsp/WFEI2007.pdf>. Accessed July 19, 2010.
272. International Labor Organization. R191 maternity protection recommendation, 2000. Available at: <http://www.ilo.org/ilolex/cgi-lex/convde.pl?R191>. Accessed July 27, 2010.
273. European Commission. Commission improves work-life balance for millions with longer and better maternity leave. October 3, 2008. Available at: [www.europa.eu/rapid/pressReleasesAction.do?reference=IP/08/1450&format=HTML&aged=0&language=EN&guiLanguage=en](http://www.europa.eu/rapid/pressReleasesAction.do?reference=IP/08/1450&format=HTML&aged=0&language=EN&guiLanguage=en). Accessed August 3, 2010.
274. Service Canada. Employment Insurance (EI) and maternity, parental and sickness benefits. Available at: [www.servicecanada.gc.ca/eng/ei/types/special.shtml](http://www.servicecanada.gc.ca/eng/ei/types/special.shtml). Accessed July 27, 2010.
275. U.S. Department of Labor, Bureau of Labor Statistics. National compensation survey: employee benefits in private industry in the United States, March 2007. Available at: <http://www.bls.gov/ncs/ebs/sp/ebsm0006.pdf>. Accessed August 20, 2010.
276. National Conference of State Legislatures. State pregnancy, childbirth, and adoption leave statutes. Washington, DC: National Conference of State Legislatures; 2009. Available at: <http://www.ncsl.org/default.aspx?tabid=13311>. Accessed July 20, 2010.
277. Progressive States Network. Maternity/paternity leave (paid family leave). Available at: <http://www.progressivestates.org/content/369/maternity-and-paternity-leave>. Accessed July 20, 2010.
278. Calnen G. Paid maternity leave and its impact on breastfeeding in the United States: an historic, economic, political, and social perspective. *Breastfeed Med* 2007;2(1):34–44.
279. Health Resources and Services Administration. The business case for breastfeeding: steps for creating a breastfeeding friendly worksite: bottom line benefits. Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration; 2008. Available at: [http://www.ask.hrsa.gov/detail\\_materials.cfm?ProdID=4135&ReferringID=4121](http://www.ask.hrsa.gov/detail_materials.cfm?ProdID=4135&ReferringID=4121). Accessed July 20, 2010.
280. Cattaneo A, Yngve A, Koletzko B, Guzman LR. Promotion of Breastfeeding in Europe project. Protection, promotion and support of breast-feeding in Europe: current situation. *Public Health Nutr* 2005;8(1):39–46.
281. American Academy of Pediatrics, American Public Health Association, National Resource Center for Health and Safety in Child Care and Early Education. *Caring for our children: national health and safety performance standards: guidelines for out-of-home child care programs*. 2nd ed. Elk Grove Village, IL: American Academy of Pediatrics and Washington, DC: American Public Health Association; 2002. Available at: <http://nrckids.org>. Accessed July 20, 2010.
282. American Academy of Pediatrics, American Public Health Association, National Resource Center for Health and Safety in Child Care and Early Education. *Preventing childhood obesity in early care and education: selected standards from caring for our children: national health and safety performance standards: guidelines for early care and education programs*. 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics and Washington, DC: American Public Health Association; 2010. Available at: [http://nrckids.org/CFOC3/PDFVersion/preventing\\_obesity.pdf](http://nrckids.org/CFOC3/PDFVersion/preventing_obesity.pdf). Accessed September 3, 2010.
283. Benjamin SE, Taveras EM, Cradock AL, Walker EM, Slining MM, Gillman MW. State and regional variation in regulations related to feeding infants in child care. *Pediatrics* 2009;124:e104–e111.
284. InfaNET Nutrition for Child Care Providers. Infant, parent, provider, nutrition: building blocks for healthy infants. Available at: <http://www.infanet.cahs.colostate.edu/breastmilk.htm>. Accessed July 20, 2010.
285. Wisconsin Department of Health and Family Services, Division of Public Health; Wisconsin Breastfeeding Coalition. *Taking care of breastfed babies—for childcare centers*. 2009. Available at: [http://dhs.wisconsin.gov/health/Nutrition/Breastfeeding/BF\\_FriendlyComm/TakingCareofBreastfedBabies.pdf](http://dhs.wisconsin.gov/health/Nutrition/Breastfeeding/BF_FriendlyComm/TakingCareofBreastfedBabies.pdf). Accessed July 20, 2010.
286. Wisconsin Department of Health and Family Services. *Promotion and support materials: breastfeeding mothers in childcare centers*. Available at: <http://www.dhs.wisconsin.gov/health/Nutrition/Breastfeeding/bfpromosupp.htm>. Accessed August 4, 2010.

287. Clark A, Anderson J, Adams E, Baker S. Assessing the knowledge, attitudes, behaviors and training needs related to infant feeding, specifically breastfeeding, of child care providers. *Matern Child Health J* 2008;12:128–135.
288. Kramer MS, Matush L, Bogdanovich N, Aboud F, Mazer B, Fombonne E, et al. Health and development outcomes in 6.5-y-old children breastfed exclusively for 3 or 6 mo. *Am J Clin Nutr* 2009;90:1070–1074.
289. Kramer MS, Matush L, Vanilovich I, Platt R, Bogdanovich N, Sevkovskaya Z, et al.; Promotion of Breastfeeding Intervention Trial (PROBIT) Study Group. Effect of prolonged and exclusive breast feeding on risk of allergy and asthma: cluster randomised trial. *BMJ* 2007;335:815.
290. Centers for Disease Control and Prevention. Breastfeeding: data and statistics. Available at: <http://www.cdc.gov/breastfeeding/data/index.htm>. Accessed July 8, 2010.
291. Chapman DJ, Pérez-Escamilla R. US national breastfeeding monitoring and surveillance: current status and recommendations. *J Hum Lact* 2009;25:139–150.
292. Merewood A, Brooks D, Bauchner H, MacAuley L, Mehta SD. Maternal birthplace and breastfeeding initiation among term and preterm infants: a statewide assessment for Massachusetts. *Pediatrics* 2006;118:e1048–e1054.
293. Centers for Disease Control and Prevention. National Immunization Survey. Available at: <http://www.cdc.gov/nis/>. Accessed July 2, 2010.
294. Centers for Disease Control and Prevention. Pregnancy Risk Assessment Monitoring System (PRAMS). Available at: <http://www.cdc.gov/PRAMS/>. Accessed November 1, 2010.
295. Centers for Disease Control and Prevention. Pediatric and Pregnancy Nutrition Surveillance System. Available at: <http://www.cdc.gov/pednss/>. Accessed July 2, 2010.
296. Chapman DJ, Merewood A, Armah RA, Pérez-Escamilla R. Breastfeeding status on U.S. birth certificates: where do we go from here? *Pediatrics* 2008;122:e1159–e1163.
297. U.S. Department of Health and Human Services. HealthyPeople.gov. Available at: <http://www.healthypeople.gov/2020/default.aspx>. Accessed January 3, 2011.
298. United States Breastfeeding Committee. Breastfeeding in the United States: a national agenda. Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau; 2001. Available at: <http://www.usbreastfeeding.org/LinkClick.aspx?link=Publications%2fNational-Agenda-2001-USBC.pdf&tabid=70&mid=388>. Accessed July 27, 2010.

# Acknowledgments

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*The Surgeon General's Call to Action to Support Breastfeeding* was prepared by the Centers for Disease Control and Prevention and the Office on Women's Health under the direction of the Office of the Surgeon General. These three agencies are part of the U.S. Department of Health and Human Services, which published the *Call to Action*.

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# Appendix 1. Actions to Improve Breastfeeding

## Mothers and Their Families

### Action 1. Give mothers the support they need to breastfeed their babies.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Help pregnant women to learn about the importance of breastfeeding for their babies and themselves.	Women Family members and friends Clinicians
Teach mothers to breastfeed.	Women Family members and friends Clinicians
Encourage mothers to talk to their maternity care providers about plans to breastfeed.	Women Family members and friends Clinicians
Support mothers to have time and flexibility to breastfeed.	Women Family members and friends Clinicians
Encourage mothers to ask for help with breastfeeding when needed.	Women Family members and friends Clinicians

### Action 2. Develop programs to educate fathers and grandmothers about breastfeeding.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Launch or establish campaigns for breastfeeding education that target a mother's primary support network, including fathers and grandmothers.	Public health entities Community organizations
Offer classes on breastfeeding that are convenient for family members to attend.	Community organizations Hospitals

## Communities

### Action 3. Strengthen programs that provide mother-to-mother support and peer counseling.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Create and maintain a sustainable infrastructure for mother-to-mother support groups and for peer counseling programs in hospitals and community health care settings.	Public health entities Community organizations
Establish peer counseling as a core service available to all women in WIC.*	Federal, state, and local WIC programs

### Action 4. Use community-based organizations to promote and support breastfeeding.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Support and fund small nonprofit organizations that promote breastfeeding in communities of color.	Federal, state, and local governments Foundations
Integrate education and support for breastfeeding into public health programs that serve new families.	Public health entities Community organizations
Ensure around-the-clock access to resources that provide assistance with breastfeeding.	Public health entities Community organizations

### Action 5. Create a national campaign to promote breastfeeding.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Develop and implement a national public health campaign on breastfeeding that relies heavily on social marketing.	Federal, state, and local partners
Use a variety of media venues to reach young women and their families.	Public health entities Community organizations

### Action 6. Ensure that the marketing of infant formula is conducted in a way that minimizes its negative impacts on exclusive breastfeeding.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Hold marketers of infant formula accountable for complying with the <i>International Code of Marketing of Breast-milk Substitutes</i> .	Public health entities Infant formula manufacturers
Take steps to ensure that claims about formula are truthful and not misleading.	HHS/FDA <sup>†</sup> Federal Trade Commission
Ensure that health care clinicians do not serve as advertisers for infant formula.	Health care professionals

\* WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; U.S. Department of Agriculture.

<sup>†</sup> HHS/FDA = U.S. Department of Health and Human Services/U.S. Food and Drug Administration.

## Health Care

### Action 7. Ensure that maternity care practices throughout the United States are fully supportive of breastfeeding.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Accelerate implementation of the Baby-Friendly Hospital Initiative.	Public health entities
Establish transparent, accountable public reporting of maternity care practices in the United States.	HHS/CDC* The Joint Commission
Establish a new advanced certification program for perinatal patient care.	Public health entities The Joint Commission
Establish systems to control the distribution of infant formula in hospitals and ambulatory care facilities.	Hospitals Ambulatory care facilities

### Action 8. Develop systems to guarantee continuity of skilled support for lactation between hospitals and health care settings in the community.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Create comprehensive statewide networks for home- or clinic-based follow-up care to be provided to every newborn in the state.	Public health entities Community organizations
Establish partnerships for integrated and continuous follow-up care after discharge from the hospital.	Hospitals Health care systems Primary care clinicians Community organizations
Establish and implement policies and programs to ensure that participants in WIC <sup>†</sup> have services in place before discharge from the hospital.	Federal, state, and local WIC programs Hospitals Primary care clinicians Community organizations

### Action 9. Provide education and training in breastfeeding for all health professionals who care for women and children.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Improve the breastfeeding content in undergraduate and graduate education and training for health professionals.	Health professional organizations Medical schools
Establish and incorporate minimum requirements for competency in lactation care into health professional credentialing, licensing, and certification processes.	Health professional organizations Credentialing boards
Increase opportunities for continuing education on the management of lactation to ensure the maintenance of minimum competencies and skills.	Health professional organizations Medical schools

(continued)

## Health Care (continued)

### Action 10. Include basic support for breastfeeding as a standard of care for midwives, obstetricians, family physicians, nurse practitioners, and pediatricians.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Define standards for clinical practice that will ensure continuity of care for pregnant women and mother-baby pairs in the first four weeks of life.	HHS/HRSA <sup>‡</sup> Health professional organizations
Conduct analyses and disseminate their findings on the comparative effectiveness of different models for integrating skilled lactation support into settings where midwives, obstetricians, family physicians, nurse practitioners, and pediatricians practice.	HHS/AHRQ <sup>§</sup>

### Action 11. Ensure access to services provided by International Board Certified Lactation Consultants.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Include support for lactation as an essential medical service for pregnant women, breastfeeding mothers, and children.	HHS/CMS <sup>¶</sup> Third-party payers
Provide reimbursement for International Board Certified Lactation Consultants (IBCLCs) independent of their having other professional certification or licensure.	HHS/CMS Third-party payers
Work to increase the number of racial and ethnic minority IBCLCs to better mirror the U.S. population.	HHS/HRSA

### Action 12. Identify and address obstacles to greater availability of safe banked donor milk for fragile infants.

<i>Implementation Strategies</i>	<i>Potential Actors</i>
Conduct a systematic review of the current evidence on the safety and efficacy of donor human milk.	HHS/AHRQ
Establish evidence-based clinical guidelines for the use of banked donor milk.	HHS/MCHB <sup>**</sup> Health professional organizations
Convene a study on federal regulation and support of donor milk banks.	Institute of Medicine

\* HHS/CDC = U.S. Department of Health and Human Services/Centers for Disease Control and Prevention.

† WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; U.S. Department of Agriculture.

‡ HHS/HRSA = U.S. Department of Health and Human Services/Health Resources and Services Administration.

§ HHS/AHRQ = U.S. Department of Health and Human Services/Agency for Healthcare Research and Quality.

¶ HHS/CMS = U.S. Department of Health and Human Services/Centers for Medicare & Medicaid Services.

\*\* HHS/MCHB = U.S. Department of Health and Human Services/Maternal and Child Health Bureau.

## Employment

### Action 13. Work toward establishing paid maternity leave for all employed mothers.

<b>Implementation Strategies</b>	<b>Potential Actors</b>
Add maternity leave to the categories of paid leave for federal civil servants.	Federal government State governments
Develop and implement programs in states to establish a funding mechanism for paid maternity leave.	State governments

### Action 14. Ensure that employers establish and maintain comprehensive, high-quality lactation support programs for their employees.

<b>Implementation Strategies</b>	<b>Potential Actors</b>
Develop resources to help employers comply with federal law that requires employers to provide the time and a place for nursing mothers to express breast milk.	DOL, HHS* Public health entities Employer organizations
Design and disseminate materials to educate employers about the benefits of providing more comprehensive, high-quality support for breastfeeding employees.	Public health entities
Develop and share innovative solutions to the obstacles to breastfeeding that women face when returning to work in non-office settings.	DOL, HHS Public health entities Employers
Promote comprehensive, high-quality lactation support programs as part of a basic employee benefits package.	Employers

### Action 15. Expand the use of programs in the workplace that allow lactating mothers to have direct access to their babies.

<b>Implementation Strategies</b>	<b>Potential Actors</b>
Create incentive or recognition programs for businesses that establish, subsidize, and support child care centers at or near the business site.	Federal government State governments Community organizations
Identify and promote innovative programs that allow mothers to directly breastfeed their babies after they return to work.	Public health entities Employers Chambers of Commerce

### Action 16. Ensure that all child care providers accommodate the needs of breastfeeding mothers and infants.

<b>Implementation Strategy</b>	<b>Potential Actors</b>
Promote adoption of the breastfeeding standards in <i>Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care</i> .	HHS/HRSA† State governments

\* DOL, HHS = U.S. Department of Labor; U.S. Department of Health and Human Services.

† HHS/HRSA = U.S. Department of Health and Human Services/Health Resources and Services Administration.

## Research and Surveillance

### Action 17. Increase funding of high-quality research on breastfeeding.

#### Implementation Strategy

Designate additional research funding for studies on how to increase breastfeeding rates, the economics of breastfeeding, and management of lactation.

#### Potential Actors

HHS/NIH\*  
Foundations

### Action 18. Strengthen existing capacity and develop future capacity for conducting research on breastfeeding.

#### Implementation Strategies

Develop a national consortium on breastfeeding research.

#### Potential Actors

HHS/NIH  
Researchers

Enhance the training of scientists in basic and applied research on lactation, breastfeeding, and women's and children's health.

HHS/NIH  
Universities and medical schools

### Action 19. Develop a national monitoring system to improve the tracking of breastfeeding rates as well as the policies and environmental factors that affect breastfeeding.

#### Implementation Strategies

Enhance the CDC Breastfeeding Report Card by including a broader array of process indicators and showing trends over time.

#### Potential Actors

HHS/CDC†

Collect data in all states on the initiation of breastfeeding and in-hospital supplementation with formula through the U.S. Standard Certificate of Live Birth.

State governments

Develop systems to collect key information on policy and environmental supports for breastfeeding.

HHS/CDC

\* HHS/NIH = U.S. Department of Health and Human Services/National Institutes of Health.

† HHS/CDC = U.S. Department of Health and Human Services/Centers for Disease Control and Prevention.

## ***Public Health Infrastructure***

### **Action 20. Improve national leadership on the promotion and support of breastfeeding.**

<b><i>Implementation Strategies</i></b>	<b><i>Potential Actors</i></b>
Create a federal interagency work group on breastfeeding.	Federal government
Increase the capacity of the United States Breastfeeding Committee and affiliated state coalitions to support breastfeeding.	Public health entities



## Appendix 2. Excess Health Risks Associated with Not Breastfeeding

Outcome	Excess Risk* (%) (95% CI <sup>†</sup> )	Comparison Groups
<b>Among full-term infants</b>		
Acute ear infections (otitis media) <sup>2</sup>	100 (56, 233)	EFF <sup>‡</sup> vs. EBF <sup>§</sup> for 3 or 6 mos
Eczema (atopic dermatitis) <sup>11</sup>	47 (14, 92)	EBF <3 mos vs. EBF ≥3 mos
Diarrhea and vomiting (gastrointestinal infection) <sup>3</sup>	178 (144, 213)	Never BF <sup>¶</sup> vs. ever BF
Hospitalization for lower respiratory tract diseases in the first year <sup>4</sup>	257 (85, 614)	Never BF vs. EBF ≥4 mos
Asthma, with family history <sup>2</sup>	67 (22, 133)	BF <3 mos vs. ≥3 mos
Asthma, no family history <sup>2</sup>	35 (9, 67)	BF <3 mos vs. ≥3 mos
Childhood obesity <sup>7</sup>	32 (16, 49)	Never BF vs. ever BF
Type 2 diabetes mellitus <sup>6</sup>	64 (18, 127)	Never BF vs. ever BF
Acute lymphocytic leukemia <sup>2</sup>	23 (10, 41)	Never BF vs. >6 mos
Acute myelogenous leukemia <sup>5</sup>	18 (2, 37)	Never BF vs. >6 mos
Sudden infant death syndrome <sup>2</sup>	56 (23, 96)	Never BF vs. ever BF
<b>Among preterm infants</b>		
Necrotizing enterocolitis <sup>2</sup>	138 (22, 2400)	Never BF vs. ever BF
<b>Among mothers</b>		
Breast cancer <sup>8</sup>	4 (3, 6)	Never BF vs. ever BF (per year of breastfeeding)
Ovarian cancer <sup>2</sup>	27 (10, 47)	Never BF vs. ever BF

\* The excess risk is approximated by using the odds ratios reported in the referenced studies.

<sup>†</sup> CI = confidence interval.

<sup>‡</sup> EFF = exclusive formula feeding.

<sup>§</sup> EBF = exclusive breastfeeding.

<sup>¶</sup> BF = breastfeeding.



## Appendix 3. Development of the Call to Action

*The Surgeon General's Call to Action to Support Breastfeeding* was prepared by the Centers for Disease Control and Prevention and the Office on Women's Health under the direction of the Office of the Surgeon General. These three agencies are part of the U.S. Department of Health and Human Services, which published the *Call to Action*. Representatives from these agencies collaborated with a federal steering committee that included representatives from several other federal agencies. The members of the steering committee are listed in the Acknowledgments (page 69). The steering committee sought input from several sources to identify priority actions and directions for concerted national efforts to promote breastfeeding.

First, comments were solicited from the general public through an open Web site that allowed users to submit comments and review all previously submitted comments. The comment period was April 1–May 31, 2009. A total of 2,354 distinct comments was received, and then all comments were categorized by primary subject area. All comments were read, and a summary report that drew out major themes and specific quotes for review by the steering committee was produced.

### Summary of Subject Areas Included in Public Comments on National Breastfeeding Efforts

Topic	Total No. of Comments
Maternal and Infant Care Practices: Prenatal, Hospital, and Post-Delivery Care	516
Paid Maternity Leave	302
Access to Lactation Care and Support	288
Worksite Lactation Support, On-Site Child Care, and Expression of Milk	248
Support for Breastfeeding in Public Settings	217
Portrayal of Breastfeeding in Traditional Popular Media and New Electronic Media	176
Health Professional Education, Publications, and Conferences	146
Use of Banked Human Milk	114
Community Support for Breastfeeding in Complementary Programs (e.g., Early Head Start, Home Visitation, Parental Training)	101
Peer Support and Education of Family Members and Friends	91
Research and Surveillance	57
Other Areas	98
<b>Total</b>	<b>2,354</b>

Second, an expert panel met in Washington, DC, on April 28–29, 2009, to conduct more in-depth discussions about the content of a *Call to Action* (see list of participants, p. 81). The meeting began with the expert panel listening to a group of mothers describe the challenges they had faced when breastfeeding. The expert panel then offered their individual recommendations for policy and environmental changes needed to better support breastfeeding. Additionally, small groups were formed to put forward summary recommendations in key areas.

Third, in July and August of 2009, hearings for stakeholders were conducted in Arlington, Virginia, and Atlanta, Georgia, to hear from critical organizations whose work directly affects breastfeeding. Each organization was given eight minutes to present its perspective on the greatest needs in breastfeeding, followed by a short question-and-answer period. All presenters also delivered a written copy of their testimony for consideration by the steering committee.

Finally, the steering committee reviewed recommendations and priorities delineated at various meetings, including the strategic planning session of the United States Breastfeeding Committee (Washington, DC, January 2009), the Breastfeeding and Feminism Symposium (Greensboro, North Carolina, March 2009), the Academy of Breastfeeding Medicine Summit on Breastfeeding (Washington, DC, June 2009), and the USDA/CDC panel on Using Policy and Environmental Approaches to Reduce Black-White Breastfeeding Disparities (Atlanta, Georgia, December 2009).

The steering committee met frequently throughout 2009 to consider the most important actions needed to support breastfeeding and to write the present document.

## ***Participants on the Expert Panel***

**April 28–29, 2009: Washington, DC**

### **Panel of mothers**

Aaliyah Alim  
Bonita Butler  
Kahlil Kuykendall  
Rashida Jefferson

Chelai Johnson  
Coyan Lewis  
Jessica Silva  
Damali Smith

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Albert Einstein College of Medicine

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Faculty Member, Union Institute and University; Convener, Baby-Friendly-USA  
Healthy Children Project

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Vice-President and President-Elect  
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#### **Cate Colburn-Smith**

Workplace Lactation Expert  
Moms on Board

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Director of Education  
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James McGill Professor of Pediatrics and of Epidemiology and Biostatistics  
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and Family Nursing, College of Nursing  
Rush Medical College

**Karen Minatelli**

Director, Work and Family Programs  
National Partnership for Women and Families

**Georgia Morrow, R.N., I.B.C.L.C.**

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**Judy Norsigian**

Co-Founder, Boston Women's Health Book Collective; Co-Author, *Our Bodies, Ourselves*  
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Maternity Care Coalition

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Gillings School of Global Public Health  
University of North Carolina at Chapel Hill

**Jill Youse**

Executive Director  
International Breast Milk Project

## ***Participants at Stakeholder Hearings***

### **July 30, 2009: Arlington, Virginia**

- American Academy of Family Physicians
- American Academy of Pediatrics
- American Breastfeeding Institute
- American College of Nurse-Midwives
- American Nurses Association
- American Public Health Association
- Association of State and Territorial Public Health Nutrition Directors
- Association of Women's Health, Obstetric and Neonatal Nurses
- Baby-Friendly USA
- Breastfeeding Coalition of the Uniformed Services
- Breastfeeding Task Force of Greater Los Angeles, California Breastfeeding Coalition
- Carolina Global Breastfeeding Institute
- Healthy Children Project
- Human Milk Banking Association of North America
- International Board of Lactation Consultant Examiners
- La Leche League International
- Lamaze International
- National Alliance for Breastfeeding Advocacy
- National Association of Pediatric Nurse Practitioners
- National Business Group on Health
- National WIC Association, Breastfeeding Committee
- Pennsylvania Breastfeeding Coalition
- United States Breastfeeding Committee
- United States Lactation Consultant Association
- Wellstart International

### **August 13, 2009: Atlanta, Georgia**

- Abbott Nutrition
- Ameda Breastfeeding Products
- Evenflo Company, Inc.
- Greenberg Quinlan Rosner Research
- International Formula Council
- Lansinoh Laboratories, Inc.
- Mead Johnson Nutrition
- Medela, Inc.
- Nestlé Infant Nutrition
- Prolacta Bioscience, Inc.
- Wyeth Nutrition

## Appendix 4. Abbreviations and Acronyms

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AAP	American Academy of Pediatrics
AHRQ	Agency for Healthcare Research and Quality
CDC	Centers for Disease Control and Prevention
CMS	Centers for Medicare & Medicaid Services
DOL	U.S. Department of Labor
EU	European Union
FDA	U.S. Food and Drug Administration
GAO	Government Accountability Office
HHS	U.S. Department of Health and Human Services
HMBANA	Human Milk Banking Association of North America
HRSA	Health Resources and Services Administration
IBCLC	International Board Certified Lactation Consultant
IBLCE	International Board of Lactation Consultant Examiners
ILO	International Labor Organization
MCHB	Maternal and Child Health Bureau
mPINC	Maternity Practices in Infant Nutrition and Care
NEC	necrotizing enterocolitis
NIH	National Institutes of Health
NIS	National Immunization Survey
OWH	Office on Women's Health
UNICEF	United Nations Children's Fund
USBC	United States Breastfeeding Committee
USDA	U.S. Department of Agriculture
USPSTF	U.S. Preventive Services Task Force
WHO	World Health Organization
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children







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