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Breast-feeding: Impact on Health, Employment and Society

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Summary

The rate of breast-feeding in the United States has risen and fallen over time as a result of changing lifestyles and the availability of substitutes for human milk. However, since the 1970s the rates of breast-feeding initiation and duration have increased, in part due to the increasing medical evidence of the significant health benefits both to mothers and children. The federal government's Health Objectives for 2010 are for 75% of mothers to initiate breast-feeding at the time of birth and for 50% to continue breast-feeding until their infants reach 6 months of age. Current rates are about 69.5% at the time of hospital discharge and 32.5% at 6 months of age.

The health benefits to the infant include the high nutritional quality of human milk, and a decrease in various infectious and other diseases of infancy that are reduced by the anti-microbial, anti-inflammatory and immunological-stimulating agents present. Mothers seem to benefit with a more rapid return to the pre-pregnancy state of their bodies, improved glucose and lipid metabolism, delayed ovulation, and the possible reduction of certain cancers.

Proponents of workplace lactation programs cite their benefits to employers as reduced employee absenteeism, increased productivity, increased company loyalty and morale, lower health care costs, and improved employee retention. The societal benefits of increased breast-feeding may include significant savings in health care costs, savings in the costs of infant formula, and the potential that intellectual development of children is enhanced by breast-feeding in the first year of life.

Breast-feeding promotion is a policy promoted by the U.S. Government and numerous non-governmental organizations. The infant formula industry also publishes educational literature that promotes breast-feeding as the preferred method of infant feeding in the first year of life.

Federal legislation has promoted various aspects of breast-feeding. The Treasury and General Government Appropriations Acts of the last 4 years have contained a provision that supports breast-feeding at government sites. In the 108th Congress, the Pregnancy Discrimination Act Amendments of 2003 (S. 418) was introduced to protect the rights of new mothers to breast-feed. Language in the Leave No Child Behind Act of 2003 (H.R. 936 and S. 448) would require consideration of government policies to provide lactation facilities, support and services in the federal government; it was reintroduced from the 107th Congress. The Breastfeeding Promotion Act (H.R. 285), introduced in the 107th Congress, would have provided protection of breast-feeding by new mothers, required development of a performance standard for breast pumps, and provided tax incentives to encourage employers to provide lactation programs. As of November 2002, 32 States had enacted legislation to protect mothers and promote breast-feeding.

This report will be updated to track legislative developments.

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Breast-feeding: Impact on Health, Employment and Society

Women with infants and toddlers are a significant segment of the labor force today. As a result, a variety of laws and policies have been modified to provide the opportunity for these women to be successful both as parents and employees. This report summarizes information on the impact of breast-feeding on the health of mother and child, and on employers and employees where lactation support programs or other workplace supports are provided. Also addressed are current administrative and congressional efforts to promote breast-feeding.

Trends in Breast-feeding and Lifestyle

Until 1950, almost all U.S. babies were breast-fed, but in the last 50 years, infant feeding has changed dramatically.¹ Following World War II, bottle feeding became popular with the development and large-scale manufacture of infant formula products. Between 1946 and 1956, breast-feeding fell by 50%, and by 1967, only 25% of American infants were being breast-fed at the time of hospital discharge. By 1982 the percentage of breast-fed infants at discharge had grown to about 62%, declined to around 46% in 1990, and then had another upswing, reaching 64% in 1998.² The pattern of breast-feeding for 6 month old infants parallels that for newborns, although at a considerably lower rate. In 1998, about 29% of 6 month old infants were being breast-fed. Current U.S. rates of breast-feeding are 69.5% for mothers in-hospital and 32.5% at 6 months postpartum, despite recommendations from government and health professional organizations to breast-feed until at least 6 months of age.³ The Healthy People 2010 targets, set by the federal government, are for 75% breast-feeding in-hospital and 50% breast-feeding at 6 months of age.

¹ Jon Weimer, U.S. Dept. of Agriculture, Economic Research Service, *The Economic Benefits of Breast Feeding: A Review and Analysis*. Food Assistance and Nutrition Research report no. 13, Mar. 2001, 14 pp. (Hereafter cited as Weimer, *The Economic Benefits of Breast Feeding*.)

² A.S. Ryan, *The Resurgence of Breastfeeding in the United States*, *Pediatrics*, vol. 99, no. 4, Apr. 1997, p. 12.

³ U.S. Department of Health and Human Services, Office of the Assistant Secretary for Health, *Healthy People 2010*, vol. I and II. (Washington, GPO), Jan. 2000.

While the overall rates of breast-feeding have increased in recent years, the rates have remained uneven among various population groups.⁴ Breast-feeding rates have generally been higher in western states, and among women who were older, college educated and multiparous (given birth several times), those who had not enrolled in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), were not employed outside the home, had normal birth weight infants and had higher disposable incomes. Recent increases have been greater among groups that have historically been less likely to practice breast-feeding: women who were black, younger than 25 years of age, in the lowest income group (less than \$10,000 annually), have no more than a grade school education, primiparous (given birth once), lived in the south Atlantic region, had low birth weight infants, were employed full time outside the home, and participated in WIC. However, these groups still remain the least likely to initiate breast-feeding.

Health Impacts for Mothers and Infants

The documented advantages of extended breast-feeding include nutritional, immunological and psychological benefits to both the mother and child. Human milk provides optimal nutrition to infants in both its composition and balance of nutrients. The relatively low protein content is adequate nutritionally, while not putting an unnecessary load of nitrogen on the immature kidney. Human milk protein is mainly whey, which is easily digestible by the infant. Generous amounts of essential fatty acids, saturated fatty acids, medium-chain triglycerides and cholesterol are also present. Long-chain polyunsaturated fatty acids promote optimal development of the central nervous system. Breast milk is relatively low in sodium content, allowing fluid requirements to be met without overwhelming the renal load. The minerals in human milk are protein-bound and balanced for bioavailability, and it provides iron, zinc, and calcium to meet infant needs, while putting a minimal demand on the maternal supply of these nutrients.

Recent recommendations from the American Academy of Pediatrics suggest that exclusively breast-fed infants should receive vitamin D supplementation to prevent rickets.⁵ The Academy recommends that vitamin supplements begin at 2 months of age and continue until the infants are consuming at least 17 ounces daily of vitamin-D fortified milk. The use of multivitamins containing 200 international units of vitamin D is suggested, because supplements containing only vitamin D generally are too concentrated to be safe for routine use. The recommendation also applied to nonbreast-fed babies who are drinking less than 17 ounces of fortified formula or milk daily, as well as children and adolescents who do not drink that much fortified milk, get regular sunlight exposure or take multiple vitamins with at least 200 international units of vitamin D. Previously, physicians believed that babies got adequate amounts of vitamin D, because sunlight stimulates the body to produce vitamin D. However, recent recognition that sunlight exposure over time is a risk factor for skin cancer has led to protecting children, and infants in particular, from direct sunlight, so they are

⁴ U. S. Department of Health and Human Services, Health People 2010, Washington, D.C., 2000.

⁵ "Vitamins Urged for Breast-fed Babies." Pediatricians recommend vitamin D to prevent rickets. *The Washington Post*, Apr. 7, 2003, p. A5.

not making the vitamin D that this exposure once provided. In recent years, there have been reports of dozens of cases of rickets nationwide, caused by a deficiency of vitamin D.

Human milk contains a variety of components that provide protection against common infectious diseases by inhibiting the growth of microbial pathogens, and enhance the nutritional status of infants under conditions in which poor sanitation and low quality weaning foods are present.⁶ In addition, human milk contains an array of antimicrobial agents, anti-inflammatory agents, and immunologic stimulating agents, most of which are absent from or present in only small amounts in infant formula, and which the infant produces only in limited amounts. Research has demonstrated significant protection during breast-feeding against diarrhea, respiratory infections, otitis media, bacteremia, bacterial meningitis, botulism, urinary tract infections and necrotizing enterocolitis.⁷ The frequency of gastrointestinal infections appears to be significantly lower in breast-fed infants compared to formula-fed infants. For some infections, the duration is shorter and the intensity is less in breast-fed infants than in formula-fed infants. In addition, breast milk appears to be protective against food allergies.

While considerable attention has focused on the health benefits of breast-feeding for the infant, which is the reason given by most women who choose to breast-feed, considerably less attention has been given to the health effects of breast-feeding on the mothers. A 1991 National Academy of Sciences report concluded that there was insufficient evidence at that time to reach any conclusions on the impact of breast-feeding on maternal health, beyond the delay of return to regular ovulation.⁸ A more recent review of the maternal health benefits examined the short- and long-term advantages from the available literature, which continues to be limited.⁹ Breast-feeding in the early postpartum period was shown to promote a more rapid return of the uterus to its pre-pregnant state, and may also lead to a more rapid return to pre-pregnant weight. Among studies on duration and intensity of lactation, the majority showed a significant association between lactation and weight loss, although the researchers reported that there is no evidence that lactation prevents obesity. Lactation also seems to affect glucose and lipid metabolism, which may have implications for preventing the subsequent development of diabetes and heart disease. Lactation delays the return of ovulation and significantly reduces fertility during the period of lactational amenorrhea. While the researchers reported that the evidence from epidemiological studies is mixed, several large studies have shown that extended lactation is associated with reduced risk of premenopausal breast,

⁶ National Academy of Sciences, Institute of Medicine, Food and Nutrition Board, *Nutrition During Lactation*, Committee on Nutritional Status During Pregnancy and Lactation, Subcommittee on Nutrition During Lactation, National Academy Press, 1991. (Hereafter cited as National Academy of Sciences, *Nutrition During Lactation*).

⁷ L.A. Hanson, Human Milk and Host Defense. Immediate and Long-term Effects, *Acta Paediatrica Supplement*, vol. 88, no. 430, Aug. 1999, pp. 42-46.

⁸ National Academy of Sciences, *Nutrition During Lactation*.

⁹ J.M. Heinig and K.G. Dewey, "Health Effects of Breast Feeding for Mothers: A Critical Review," *Nutrition Research Review*, 1997, vol. 10, 1997, pp. 35-56.

ovarian and endometrial cancers. While bone mineralization declines during lactation, repletion occurs after weaning, and does not seem to cause long-term bone loss or increase the risk of osteoporosis.

A number of health and professional organizations have policies and positions supporting breast-feeding promotion, including the American Academy of Family Physicians, American Academy of Pediatrics, American Dietetic Association, American College of Nurse-Midwives, American College of Obstetricians and Gynecologists, Association of Women's Health, Obstetric and Neonatal Nurses, and National Association of Pediatric Nurse Practitioners. In addition, the infant formula industry, which consists of four companies in the United States, provides literature that supports the view that breast-feeding is the best choice in the first year of life. An example is the recent publication of Abbott Laboratories.¹⁰

Societal Impact of Breast-feeding Promotion

The recognized societal benefits of an increase in the rate of breast-feeding until infants are 6 months old include the savings that might be realized in health care costs. An analysis of the economic benefits of breast-feeding, conducted by the Economic Research Service of the U.S. Department of Agriculture and published in 2001, estimated that a minimum of \$3.6 billion could be saved in the United States if breast-feeding increased from current levels to the levels recommended in *Healthy People 2010*.¹¹ This analysis represents cost savings from treatment of three childhood illnesses (otitis media, gastroenteritis, and necrotizing enterocolitis) and probably underestimates total savings, according to the researchers.

The savings to families of reduced spending on infant formula are substantial as well. Recent estimates are that out-of-pocket costs for families that use infant formula amount to \$855 for the first 6 months of life.¹² While breast-feeding would likely result in some increase in food costs, since lactating women have increased nutrient needs, this cost would likely be less than the cost of infant formula for a year. The cost of purchasing formula has been shown to be several hundred dollars more than the cost of providing supplemental food for the breast-feeding mother.¹³

Finally, breast-feeding may enhance the intellectual development of children due to the benefits of certain polyunsaturated fatty acids (DHA — docosahexaenoic acid and AA — arachidonic acid) that have been demonstrated to promote visual and neural development. The recent decision by infant formula manufacturers to add these expensive fatty acids to their products in order to provide a product more

¹⁰ Abbott Laboratories, Ross Products Division, *Ensuring Optimal Infant Nutrition: A Shared Responsibility*, Apr. 2003, 12 pp.

¹¹ Jon Weimer, *The Economic Benefits of Breast-feeding*.

¹² T.M. Ball and A. L. Wright, "Health Care Costs of Formula-feeding in the First Year of Life," *Pediatrics*, vol. 103, no. 4, Apr. 1999, pp. 870-876.

¹³ D. Montgomery and P. Splett, "Economic Benefit of Breast-Feeding Infants Enrolled in WIC," *Journal of American Dietetic Association*, vol. 97, no. 4, Apr. 1997, pp. 379-385.

comparable to human milk suggests recognition of the potential benefit of these ingredients, especially to premature infants.

Factors Affecting the Decision to Breast-feed

Decisions to initiate or refrain from breast-feeding are made for various reasons, but a number of barriers to breast-feeding have been identified. A significant factor is that breast-feeding is not necessarily accepted as a cultural norm, particularly within certain demographic groups. The decline in breast-feeding several decades ago led to a loss of traditional knowledge and support from the older generation for new mothers who wanted to breast-feed. In addition, health care professionals frequently lack adequate training in lactation and managing breast-feeding problems when they arise with new mothers. Societal changes in childbearing and child rearing, such as the increased numbers of teenage and single mothers and more reliance on child care outside the home, also create challenges to sustained breast-feeding. In the workplace, the relatively short term of maternity leave and difficulty of maintaining an adequate milk supply with prolonged separation from the infant contribute to early termination of breast-feeding. The effect of the commercial sector on breast-feeding has also had an impact through both marketing practices and the availability of products that promote the use of human milk substitutes, especially when these products are provided in hospital discharge packages.

While full-time work has been shown to have no effect on the initiation of breast-feeding, it does seem to have a profound effect on breast-feeding duration.¹⁴ One survey found that while equal numbers of employed and unemployed mothers initiated breast-feeding, by the time their infants were 6 months old, only 10% of full-time employed working women reported that they were still breast-feeding, compared to 24% of non-employed women.¹⁵ Women who are presumed to have the most influence over their working conditions, i.e., professional women, are the most likely to breast feed after returning to work and have the longest duration of breast-feeding, regardless of the length of maternity leave. The duration of maternity leave was shown to be highly significantly associated with the duration of breast-feeding. However, this association does not necessarily mean that returning to work directly causes weaning. Some women may wean in anticipation of returning to work, while others may wean in the face of difficulties in managing both work and breast-feeding.¹⁶

Breast-feeding supporters advocate a variety of ways to promote the initiation and duration of breast-feeding, including more part-time employment opportunities, improved training for health care personnel, longer maternity leaves, greater access

¹⁴ C.M. Visness and K.I. Kennedy, "Maternal Employment and Breastfeeding: Findings Form the 1988 National Maternal and Infant Health Survey," *American Journal of Public Health*, vol. 87, no. 6, June 1997, pp. 945-950.

¹⁵ B. Roe, et al., "Is There Competition Between Breast-feeding and Maternal Employment?," *Demography*, vol. 36, no. 2 May 1999, pp. 157-171.

¹⁶ S.B. Fein, and B. Roe, "The Effect of Work Status on Initiation and Duration of Breast-feeding," *American Journal of Public Health*, vol. 88, no. 7, July 1998, pp. 1042-1046.

to child care and lactation facilities in the workplace, and education campaigns to promote public recognition that breast-feeding for at least 6 months is optimal, with the use of human milk substitutes reserved only for a minority of infants with specific indications. There are situations in which breast-feeding is not generally possible or appropriate, such as in mothers who are HIV-positive, use illegal drugs, are receiving chemotherapy, have physical or mental disabilities that prevent effective or adequate milk production, or in cases of adoption or multiple births. Some women simply choose not to breast-feed.

Given the number of women of childbearing age currently in the workforce, the provision of lactation support for those mothers who wish to breast-feed after returning to work has been advocated as an employment benefit that could serve as an incentive to select or remain in a job. Providing easily accessible and comfortable surroundings for women to use breast pumps to express milk and/or day care so that babies can be fed on-site is seen as a way to support a woman's desire to breast-feed. In making a decision to provide lactation support facilities, factors considered by employers include such issues as company size and the type of work a company or agency performed that will be interrupted when breast-feeding occurs. Workplace lactation programs have been suggested to provide a relatively inexpensive way to reduce employee absenteeism, increase productivity, increase company loyalty and morale, lower health care costs and improve employee retention.¹⁷ The provision of lactation services at the work site and during maternity leave seem to both enhance a woman's ability to initiate and sustain breast-feeding her child as well as commitment to the employer.

One review of the rise in breast-feeding in the United States suggested that pressure to remove existing barriers to breast-feeding could eventually come from health maintenance organizations and insurance companies, which are increasingly likely to recognize the costs of not breast-feeding. The author identified such options as flexible work hours and paid maternity leave, offered either by the government or family-friendly workplaces, that could increase the ability of employed women to optimally feed their infants.¹⁸ In countries where governments have passed laws which guarantee all mothers paid leave from their work (with as much as 80% of their salary) for 9 months after childbirth (and in some cases up to a year), there has been a significant increase in the prevalence of breast-feeding between 6 and 9 months of age.¹⁹ The World Health Organization/UNICEF program to create "baby-friendly" maternity hospitals, with the goal of enabling all women to practice exclusive breast-feeding immediately after birth, is credited with further supporting the increase in breast-feeding in countries where this program has been implemented.²⁰

¹⁷ K. Tyler, "Got Milk? Breastfeeding Programs," *Human Resources Management Magazine*, vol. 44, Mar. 1, 1999, p. 68.

¹⁸ A.L. Wright, "The Rise of Breastfeeding in the United States," *Pediatrics Clinical North America*, vol. 48, no. 1, Feb. 2001, pp. 1-12.

¹⁹ R. Zetterstrom, "Breastfeeding and Infant-mother Interaction," *Acta Paediatric Supplement*, v. 88, no. 430. Aug. 1999, pp. 1-6.

²⁰ Armstrong, H. *UNICEF: Lessons Learned from the Baby-Friendly Hospital Initiative*, (continued...)

Government Policies to Promote Breast-feeding

In 2000 the Department of Health and Human Services (HHS) under the auspices of Surgeon General of the United States issued its HHS Blueprint for Action on Breastfeeding.²¹ The document outlined the public health challenge of breast-feeding, the benefits of and cautions about breast-feeding, facilitations and support for breast-feeding, major HHS breast-feeding activities in the 1990s and the blueprint for action on breast-feeding. The intent of this report was to provide a comprehensive framework under which a variety of governmental programs and policies would be pursued to increase breast-feeding and promote breast-feeding practices.

In 1998, the U.S. Breastfeeding Committee was established to develop a strategic plan to protect, promote and support breast-feeding in the United States. The committee is supported by the HHS Health Resources and Services Administration's Maternal and Child Health Bureau. It is composed of representatives from over three dozen health professional organizations and relevant government departments and non-governmental organizations. The committee's strategic plan, published in 2001, has four goals, which have related objectives and strategies to achieve them.

- assure access to comprehensive, current and culturally appropriate lactation care and services for all women, children and families;
- ensure that breast-feeding is recognized as the normal and preferred method of feeding infants and young children;
- ensure that all federal, state and local laws relating to child welfare and family law recognize and support the importance and practice of breast-feeding; and
- increase protection, promotion and support for breast-feeding mothers in the workforce.

Congressional Action on Breast-feeding Promotion

In the last two decades, numerous bills have been introduced in Congress that addressed various aspects of breast-feeding promotion. Many bills addressed breast-feeding in the context of the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), which will not be discussed in this report. (See CRS Report RL31577, *Child Nutrition and WIC Programs: Background and Funding*.)

The Treasury and General Government Appropriations Acts of 2000, 2001, 2002, and 2003 (P.L. 106-58, P.L. 106-554, P.L. 107-67, and P.L. 108-7) were each enacted with a provision that supports breast-feeding at government sites. The identical language in these Acts states that “notwithstanding any other provision of law, a woman may breast-feed her child at any location in a federal building or on

²⁰ (...continued)

in Women Friendly Health Services — Experiences in Maternal Care: A Report of a WHO/UNICEF/UNFPA Workshop, Mexico City, Jan. 28, 1999.

²¹ U.S. Department of Health and Human Services, Office of Women's Health, Breastfeeding: HHS Blueprint for Act on Breastfeeding, 2000, 32 pp.

federal property, if the woman and her child are otherwise authorized to be present at the location.” This provision supports breast-feeding by both federal employees and visitors.

The Pregnancy Discrimination Act Amendments of 2003, S. 418, has been introduced by Senator Snowe in the 108th Congress. This bill would protect the rights of new mothers to breast-feed their infants, by amending the Civil Rights Act of 1964 to include lactation, including the expression of milk, within the definitions of “because of sex” or “on the basis of sex” for purposes of the Act. It was referred to the Committee on Health, Education, Labor and Pensions, but no further action has been taken. The bill was also introduced in the 107th Congress.

Identical bills, introduced in the 108th Congress as the Leave No Child Behind Act of 2003 (H.R. 936 and S. 448), by Representative G. Miller and Senator Dodd respectively, contain a provision that provides for an interagency council to be established by the administrator of the General Services Administration. This council would address policy issues regarding child care, including the provision of areas for nursing mothers and other lactation support facilities and services, in the federal government. Similar legislation was introduced in the 107th Congress, but no action was taken on H.R. 1990 and S. 940.

A bill, entitled the Breastfeeding Promotion Act, H.R. 285, was introduced in the 107th Congress by Representative Maloney. Title I, to be known as the Pregnancy Discrimination Act Amendments of 2001, would have amended the Civil Rights Act of 1964 as described above in relation to S. 418. Title II would have provided a tax credit for employer expenses providing an appropriate environment on the business’ premises for employed mothers to breast-feed or express milk for their children, by amending the Internal Revenue Code to allow a limited credit to employers for expenses incurred in enabling employed mothers to breast-feed. Title III, the Safe and Effective Breast Pump Act, directed the Secretary of HHS to establish and implement a performance standard for breast pumps, irrespective of the classification of the breast pumps under the Federal Food, Drug and Cosmetic Act, and to issue a compliance policy guide which would ensure that women who want to breast-feed a child are given full and complete information regarding breast pumps. Title IV would have expanded the Internal Revenue Code definition of medical care to include qualified breast-feeding equipment and services. The bill was referred to the Committees on Ways and Means, Education and the Workforce, and Energy and Commerce. No further action was taken by any committee.

State Breast-feeding Statutes

As of November 2002, 32 states had enacted legislation related to breast-feeding. Seventeen states permit mothers to breast-feed in any public or private location where the mother is legally entitled to do so. Thirteen states have exempted breast-feeding from public indecency statutes. Another five states exempt breast-feeding mothers from jury duty. Three states have enacted provisions that either implement or encourage the development of a breast-feeding awareness education campaign. For more detailed information, see CRS RL31633, A Summary of State Breast Feeding Laws.

Observations on the Promotion of Breast-feeding

There is substantial evidence that breast-feeding of infants for 6 months, and perhaps as much as a year, has significant health benefits to the child. There also seems to be evidence that mothers benefit as well. However, less clear is the impact of programs to promote breast-feeding on the rates of breast-feeding initiation and duration. While the rates of initiation are up compared to the rates in the 1970s, these numbers are not maintained at 6 and 12 months of age, at the level current health guidelines would suggest for attaining maximum benefit for the child.

In Healthy People 2010, the federal government has set a goal of increasing rates of breast-feeding. Providing mothers and their children with the necessary support for successful breast-feeding might contribute to the achievement of this goal. Various options that have been suggested, include greater support in the workplace, extended paid maternity leave, job-sharing or other part-time employment, better training for health care professionals in working with pregnant and lactating women, and providing better coordination among government policies that promote women working and breast-feeding. However, given the difficulty experienced by many women of simultaneously balancing the demands of employment and breast-feeding, it is not possible to estimate the potential of these options in increasing the rate of breast-feeding toward meeting the national goals.