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Starr-Renee Corbin
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**The Report Committee for Starr-Renee Corbin
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Raising Parents: Breastfeeding Trends from 1900 to Present Day

**APPROVED BY
SUPERVISING COMMITTEE:**

Supervisor:

Susan Sage Heinzelman

Hillary Hart

Raising Parents: Breastfeeding Trends from 1900 to Present Day

by

Starr-Renee Corbin B.G.S

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Dedication

I would like to dedicate this report to my three children, James, Layla and Corinne whom I nursed with trial, error and happiness. I also dedicate this report to my husband Andrew for his understanding, commitment and support in the decisions we made towards the infant feeding of our children.

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Abstract

Raising Parents: Breastfeeding Trends from 1900 to Present Day

Starr-Renee Corbin, M.A.

The University of Texas at Austin, 2010

Supervisor: Susan Sage Heinzelman

Breastfeeding trends in the United States have varied considerably since the early 1900s. Medical and federal surveys representing comprehensive data on breastfeeding rates of American women show an inconsistency in breastfeeding trends over the course of the past 110 years. Some decades report a growth in breastfeeding rates of infants newborn to 6 months, whereas other decades report a decline. This report examines breastfeeding trends from the early 1900s to present day to suggest which factors have played a role in the decline and rise of breastfeeding in the United States.

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Introduction

When it came to feeding my three children as infants I had been told by my pediatrician that breast milk was the best milk. Based on this information and advice from peers and family members, I dutifully nursed all of my children. Even when I developed an abscess that required surgery to remove while nursing my first child I was not deterred. I continued to nurse him and my second child, determined to do what was “right” for them regardless of my own physical discomfort. “Everyone” was saying that breast was best and who was I to refute science and family? Over the span of six years from the time I had my first child to the time I had my last the recommendations from my two pediatricians and from mainstream scientific literature were the same: breast is best. Breastfeeding, at least in all of my Mommy circles, seemed to be the new black. I felt that my success as a parent was first measured by whether or not I breastfed my children.

Which is why I became confused after reading Hanna Rosin’s article, “The Case Against Breastfeeding” in the April 2009 issue of *The Atlantic Monthly*. In the article Rosin writes about a 2001 issue of the *Journal of the American Medical Association* which concluded: “There are inconsistent associations among breastfeeding, its duration, and the risk of being overweight in young children.”¹ The essay was the first piece of mainstream literature I had read that questioned the “breast is best” conclusion. After an in-depth investigation into the scientific literature regarding the benefits of breastmilk, Rosin concludes in her article, “breast is probably best. But not so much better that formula deserves the label of ‘public menace’, alongside smoking.” Here was an article that cited science claiming to conclude an *inconsistency* to the long-term benefits of breast milk for children (that being that breastfeeding prevents obesity in children).²

Yet I still had questions. If current recommendations and long-term benefits of breastfeeding were still a topic of debate in the scientific community, what had changed over the course of the past several decades? How consistent was the information and the

¹ ML Hediger, MD Overpeck, RJ Kuczmarski, WJ Ruan, "Association between Infant Breastfeeding and Overweight in Young Children," *Journal of the American Medical Association* 285, no. 19 (2001): 2453.

² Ibid., 2453-2460.

recommendations? Going into this project I assumed that the recommendations regarding infant feeding varied greatly over time. I assumed that the American Academy of Pediatrics (AAP) recommendations for infant feeding were dependant on the tools available for learning the benefits of breastfeeding at any given time and therefore would be different as we learned more about breastfeeding over the decades. I assumed that I would learn that the AAP only started recommending breastmilk as the best milk for infants as medicine proved breastmilk's benefits and therefore that the recommendations would change as new revelations were proved and disproved.

I was wrong.

While the AAP recommendations over when and how long to feed infants human milk has changed over the course of the past seventy years, the debate over whether infant feeding by artificial or natural means is best has not.

In fact, breastfeeding recommendations produced by the AAP, widely cited as the scientific authority by American pediatricians, have not changed much since 1948 to present day (the year the AAP's journal *Pediatrics* was published). Statements from the American Academy of Pediatrics in 1948 and in 2005 both conclude that breast milk is the first choice for infant feeding.^{3 4} According to a 1948 panel discussion on facilities and care for newborn infants, the AAP included in their top goals for state hospitals that they “increase the number of breastfed infants through prenatal education.”⁵ In 2005 the American Academy of Pediatrics wrote in their policy statement on breastfeeding that “Human milk is species-specific, and all substitute feeding preparations differ markedly from it, making human milk uniquely superior for infant feeding.”⁶

In spite of the consistency of the AAP recommendations, breastfeeding trends in the United States have varied considerably since the early 1900s. Tables and graphs dating back from 1948 to the present, which show comprehensive data on breastfeeding

³ Katherine Bain, "The Incidence of Breast Feeding in Hospitals in the United States," *Pediatrics* 2 (1948): 313-320.

⁴ American Academy of Pediatrics, "Breastfeeding and the Use of Human Milk," *Pediatrics* 115 (2005): 496-506.

⁵ Stewart H. Clifford, et al., "Panel Discussion: A Program to Develop and Improve Facilities for the Care of Newborn Infants Full Term and Premature." *Pediatrics* 2 (1948): 97-118.

⁶ American Academy of Pediatrics, "Breastfeeding and the Use of Human Milk," 496.

rates of American women, show an inconsistency in breastfeeding trends. Some decades report a growth in breastfeeding rates of infants newborn to 6 months, whereas other decades report a decline. In 1948, Dr. Katherine Bain studied 39,171 infants born in 47 states and found that at the time of discharge 38% of babies were exclusively breastfed, 27% were fed both bottle and breast, and 35% were bottle fed only.⁷ Breastfeeding then continued to decline through the 1960s until its resurgence in the 1970s. Remarkably, though, breastfeeding rates amongst newborns in the 1980s did not continue to climb. Instead the breastfeeding of newborns in hospitals went from 61.9% in 1982 to 51.5% in 1990.⁸ Since then, however, breastfeeding rates have steadily increased. According to the Center for Disease Control in 2006 breastfeeding rates for newborns were at an all time high of 73.9%.⁹

If the American Academy of Pediatrics breastfeeding policy has always concluded that breast is best for infants since 1948, why did breastfeeding rates decline from the 1940s to the 60s, then increase in the 1970s, decline again in the 1980s and then increase in the 1990s? What other forces compete with the American Academy of Pediatrics when it comes to the recommendation to breastfeed or bottle-feed? This report examines these questions through a combination of qualitative and quantitative research into some of the factors that may have played a role in breastfeeding rates since the 1900s. Possible influences on breastfeeding rates include the medical establishment's control of childbirth, the experience of hospitalization for women during childbirth, emerging infant feeding technologies, and the introduction of women into the workforce. I selected these factors because there exists an abundance of data on how these factors have changed over the past 110 years.

The first part of this report examines the historical decline of breastfeeding that began in the early 1900s and continued into the late 1960s. I discuss the medical establishment's control of childbirth prior to 1948 to provide a historical foundation for

⁷ Bain, "The Incidence of Breast Feeding in Hospitals in the United States," 313-320.

⁸ Alan S. Ryan, et al., "Breastfeeding Continues to Increase into the New Millennium," *Pediatrics* 110 (2002): 1108.

⁹ Center for Disease Control and Prevention, "Breastfeeding among U.S. Children Born 1999-2006." Center for Disease Control and Prevention http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm.

the infant feeding environment and trends of the early 1900s. I also examine the move from home births to hospital births, as well as the move away from midwives to physicians for childbirth. I further analyze the experience of hospitalization for women during and shortly following childbirth, alongside the medical establishment's control of childbirth, to see how the environment of the hospital and increased use of physicians as a knowledge source affected breastfeeding rates.

The second factor I analyze are the changes to infant feeding technology from the early 1900s to 1969. I examine research on the development of technologies that changed the way infants are fed breast milk, as well as the introduction and marketing of formula. In addition, I include a timeline of milestones with regard to infant feeding technology.

The last factor I examine are the rates of mothers in the labor force from the early 1900s to the late 1960s. I focus on the rates of working mothers with infants rather than the rates of mothers with older children since it is assumed that the choice of whether to breastfeed or not is taken into consideration often by working mothers of infants than by working mothers of children older than 5 years of age.

Data regarding national breastfeeding rates go back only to 1948 when data was first collected. Therefore the examination of comprehensive breastfeeding data will begin in 1948 and will continue through 1970 for this part of the report. A graph summarizing breastfeeding trends from 1955 to 1970 will conclude the first part of the report. The remaining parts of this report are organized by time period and examine breastfeeding rates and influences from the 1970s to 1979, from 1980 to 1989, and from 1990 to present day. Each section includes tables and figures that chart breastfeeding trends for that given time period. The influences that are examined in the first part of the report, minus the medical establishment's control of childbirth, are also discussed in each time period through the presentation of quantitative and qualitative research on each influence.

A comprehensive graph that combines breastfeeding data from 1955 to the present is presented in the conclusion of this report. Through the examination of

quantitative data and qualitative research regarding breastfeeding trends and factors of influence, this report seeks to lay the ground for future research.

Chapter 1: Breastfeeding Trends from 1900 to 1969

Medical and religious writers reported the medicinal properties of breast milk for infants as early as the 16th century. In 1584 a physician named Thomas Muffet wrote, "Neither is women's milk best only for young and tender infants, but also for men and women of riper years, fallen by age or by sickness..."¹⁰ Despite the advice of the medical community that breast milk is the best milk for infants the rate at which women breastfed their infants began to decline sometime in the late 1800s and early 1900s.¹¹

In order to combat the high infant mortality rates many industrial cities were experiencing at the turn of the century, health organizations began campaigns designed to promote breastfeeding amongst new mothers. The goal of the breastfeeding campaign was to prevent the deaths of infants due to gastrointestinal disease and malnutrition as a result of the increased use of alternatives to human milk, such as formula and cows' milk. Through statistical research, public health officials were able to prove that "breast-fed children survived infancy with much greater frequency than the bottle-fed."¹² In the 1910s the Chicago Department of Health, in an effort to combat the city's high infant mortality rate, created placards aimed at new mothers that declared, "To Lessen Babies Deaths Let Us Have More Mother-Fed Babies. You Can't Improve on God's Plan. For Your Baby's Sake-Nurse It!"¹³

Why were mothers turning to human milk substitutes at the turn of the century even as it was found that artificial feeding was directly linked to high rates of infant mortality and even as physicians recommended that breast milk was the best milk to combat infanticide? On the one hand, researchers have argued the intervention of science

¹⁰ Marylynn Salmon, "'The Cultural Significance of Breastfeeding and Infant Care in Early Modern England and America,'" *Journal of Social History* 28, no. 2 (Winter 1994):249.

¹¹ American Academy of Pediatrics, "Breastfeeding and the Use of Human Milk," 496.

¹² Harvey Livenstein, "'Best for Babies or 'Preventable Infanticide'? The Controversy over Artificial Feeding of Infants in America, 1880-1920,'" *The Journal of American History* 70 (Jun 1983): 84.

¹³ Jaqueline Wolf, *Don't Kill Your Baby* (Columbus: The Ohio State University Press, 2001), 1.

and medicine into motherhood and childbirth is to blame.^{14,15,16} On the other hand, mothers' complaints about their unexplainable decrease in breast milk and enticed by independence outside the domesticated home are blamed for the decrease in breastfeeding rates in the late 19th and early 20th centuries.¹⁷ No one reason can be isolated as being the direct cause of the declining rates of breastfeeding by new mothers. However, researchers do agree that the medical establishment's control of childbirth along with mothers experiences in the hospital following childbirth, the evolution of infant feeding technologies and the movement of women from the private sector of the home to the public sector of industry all influenced the declining rates of breastfeeding in the early part of the 20th century. While there are other influential factors that also played a role in breastfeeding rates only these aforementioned influences are examined in this part of the report that looks at breastfeeding rates from the early 1900s to 1969 since these seem to be the most influential factors during this time period.

Prior to the late 1800s physicians played little, if any, part in determining what infants, at least those with mothers, should or should not eat. However, as more and more babies died as a result of being fed inadequate human milk substitutes and as women complained to physicians about their inadequate milk supply, physicians felt they had no choice but to find healthy alternatives to breast milk. It was not that mothers were maliciously choosing to feed their babies poor milk substitutes. Instead, the most common reason reported by women who at that time were feeding their children milk alternatives was the complaint that their bodies were not producing the necessary amount of milk needed to sustain their baby. According to Jacqueline Wolf, author of a book that researches breastfeeding trends in Chicago in the early 20th century, "Physicians did not introduce women to the 'feeding question'-a passionate, decades-long debate on how best to sustain the many infants suffering from the dearth of human milk. Rather, mothers

¹⁴ Livenstein, 84.

¹⁵ Wolf, *Don't Kill Your Baby: Public Health and the Decline of Breastfeeding in the 19th and 20th Centuries*, 2-3.

¹⁶ Rima D. Apple, *Mothers and Medicine: A Social History of Infant Feeding, 1890-1950*. Madison: The University of Wisconsin-Madison, 1987.

¹⁷ Diane Thulier, "Breastfeeding in America: A History of Influencing Factors," *Journal of Human Lactation* 25, no. 1 (2009): 85-94.

themselves posed the query to physicians and physicians scurried to answer."¹⁸ In fact, so great was the complaint of not being able to produce enough breast milk to sustain a baby that physicians began to ponder whether women of that era were going through an evolutionary change. In 1904, one physician noted "the nursing function is destined to gradually disappear."¹⁹

Mothers were beginning to trust science, rather than themselves and therefore demanded from their physicians an answer to the problems of inadequate milk supply. As infant practices in the United States increasingly became more modern and physician dependence more frequent many mothers during this era saw breastfeeding as old fashioned and bottle-feeding as more modern. The knowledge of physicians and science held a "privileged status. The rather ambiguous term 'science' had become practically synonymous with progress and reform."²⁰ As more and more women turned to doctors for their infant feeding concerns in the early 1900s, inner circles of female family and friends were decreasingly seen as the trusted authority for matters that were once considered within the woman's domain. According to Diane Thulier, author of an article examining the history of influential factors in breastfeeding, "By the late 1920s and early 1930s, it was estimated that 25% or more of the case loads of general practitioners consisted of directing the routine feeding of infants."²¹

In 1948 Dr. Katherine Bain published the first nationwide study on breastfeeding rates in the journal *Pediatrics*. Aware of the continued decline of breastfeeding, Dr. Bain began the study in the hopes of proving with data that breastfeeding rates were indeed declining as the U.S. progressed into the mid 1900s. Prior to her nationwide study the only types of data available about breastfeeding rates were focused on specific hospitals or cities, not the nation as a whole. Physicians across America assumed, through the experiences in their practices, that breastfeeding rates were declining. However, such a

¹⁸ Wolf, 11.

¹⁹ Jill Lepore, "Baby Food", *The New Yorker*, Jan 19th, 2009.

²⁰ Jule DeJager Ward., *La Leche League: At the Crossroads of Medicine, Feminism, and Religion*. Chapel Hill & London: The University of North Carolina Press, 2000, 33.

²¹ Thulier, 88.

claim was not supported with actual data until Dr. Bain's study scientifically supported this assumption.

In her study, Dr. Bain sent out questionnaires to 3,500 hospitals with more than 25 beds and asked them questions about breastfeeding practices amongst new mothers in their hospital during a one-week period. Out of 3,500 hospitals, 2,513 or 72% responded (Table 1). As Table 2 shows, out of 39,171 infants only 38% of those infants were fed only breast milk at the time of their discharge from the hospital. Her collected data proved what physicians in the early 1900s had been assuming all along: breastfeeding rates in the U.S. were in a significant decline. The rate of infants that were on both breast and bottle at the time of discharge was 27% of infants surveyed. Infants that were on bottle only made up 35% of the 39,171 infants surveyed.²²

PROPORTION OF HOSPITALS* REPORTING ON TYPE OF INFANT FEEDING			
	Total hospitals	Reporting hospitals	
		Number	Percent
Whole country.....	3,500	2,513	72
Regions:			
Northeast.....	523	363	69
East and Central.....	990	663	67
Southeast.....	744	598	80
Southwest.....	293	243	83
Mountain and Plains.....	583	397	68
Pacific.....	367	249	68
County group:			
Metropolitan-adjacent.....	2,104	1,465	70
Isolated.....	1,396	1,048	75
Hospital size:			
25-99 beds.....	2,212	1,571	71
100-299.....	929	680	73
250 or more.....	359	262	73

* Hospitals of 25 or more beds which accept women for delivery.

Table 1. Katherine Bain's Chart on responding hospitals. Source: "The Incidence of Breast Feeding in Hospitals in the United States," *Pediatrics* 2 (1948):314

²² Bain, "The Incidence of Breast Feeding in Hospitals in the United States," 314.

INFANTS ON SPECIFIED FEEDING AT TIME OF DISCHARGE							
	Number				Percent		
	Total	Breast only	Breast and bottle	Bottle only	Breast only	Breast and bottle	Bottle only
Whole country.....	39,171	14,931	10,565	13,675	38	27	35

Table 2. Katherine Bain's Chart on national breastfeeding statistics. Source: "The Incidence of Breast Feeding in Hospitals in the United States", *Pediatrics* 2 (1948):315.

Dr. Bain concluded her statistical analysis with the belief that the "length of stay in hospital appears to have some influence on the type of feeding new mothers chose for their newborns. Infants discharged under eight days had a higher incidence of breastfeeding than those discharged later."²³ If the length of stay in the hospital following child birth was contributing to the declining rate of breastfeeding throughout the first half of the century, what was it about the climate of the hospital setting that made this so?

In the early 1900s mothers who gave birth in the hospital stayed an average of 7 to 8 days following childbirth. Such mandatory and lengthy hospitalization of mother and child only increased the mother's dependence on a physician's care. While physicians did acknowledge the importance of a mother's early care for her child, they recommended this be done under the strict supervision of medical personnel. In a 1947 panel discussion on newborn and infant care one physician noted that the "introduction of the baby to the mother should, ideally, be done by a nurse with considerable experience, or at least after definite education as to the technics."²⁴ When mothers gave birth in their homes, as was commonly the norm prior to 1900, the infant was place under the direct care and supervision of the mother while the midwife and family were available as a means of support. By the 1940s the care of the mother and newborn child had changed to that of the physician and nursing staff.

This strict supervision worked against physicians promoting breastfeeding when

²³ Bain, "The Incidence of Breast Feeding in Hospitals in the United States," 320.

²⁴ Clifford et al., 108.

mother and child returned home. Mothers were more likely to discontinue breastfeeding when they no longer had the supervision they were taught was necessary in order to successfully breastfeed. When problems arose with breastfeeding at home, mothers were more apt to wean and doctors quick to recommend bottle feeding due to the confidence it offered in that baby was getting sufficient milk.²⁵ The fact that newborns commonly lose weight shortly after childbirth only increased the concern over whether breastfed babies were getting enough nutrition. Regardless of whether bottle-fed babies lost weight during their first days of life, the fact that it was easier to measure the nutrition of a baby who was bottle fed versus one who was breastfed led doctors to recommend bottle feeding the instant mothers complained to them about breastfeeding. Mothers often reported that their doctors recommended bottle-feeding over breastfeeding simply because “with the bottle you always know how much you have, with the breast you don’t.”²⁶

The dependence on the medical community for infant care meant that decisions regarding infant feeding were best left up to the physician/nurse to decide, not the mother. While physicians were noting the important role that a mother has in the well-being of her newborn, the belief amongst the medical community in the early 1900s was that the physician, not the mother, knew what was best for baby. Therefore it was the duty of the physician to educate the mother in her infant’s care because the physician was more capable than her in determining her infants’ needs, not the other way around. In 1912 the medical director for the New York Milk Committee, in his plan to combat the infant mortality rate the city was experiencing, stated that a mother who is instructed by a specially trained nurse is “taught the necessity for the baby, and the saving to herself, of nursing it...She is urged not to entrust herself to an ignorant midwife, but to go to a physician or hospital.”²⁷ One group of physicians advocated a section be added to the manual of the Committee on Fetus and Newborn Care of the Academy titled, "Where the

²⁵ Wolf, 194.

²⁶ Apple, 77.

²⁷ Phillip Van Ingen, “The Education of Mothers and the Saving of Babies,” Read at a meeting of the Academy of Political Science, April 18, 1912.

mother fits in with hospital care of the newborn" since it was considered that only with the mother's support and understanding of modern infant feeding would a physician's recommendations be successfully carried out.²⁸

Physicians did not disregard the fact that historically caring and feeding for infants was commonly left in the hands of women and mothers. What was happening at the turn of the century as science played more of a role in every day life, however, was that physicians noted the differences between what was required of women in the past versus in the present. According to the belief of many early 20th century physicians, the reason why 20th century women were not as capable as generations of women before them in the caring and feeding of infants was because modern women lived under more civilized conditions than in the past. Therefore these civilized conditions meant that women "lived under a strain that upset their systems... 'primitive' women did not require such assistance, modern mothers did."²⁹ One physician in 1921 even went so far as to conclude during a meeting of the American Medical Association that "The Lord...had in mind a less highly developed nervous system than [we] are dealing with today."³⁰

At the turn of the century most births occurred in the home. However by the mid 1920s the trend of childbirth in hospitals was greatly taking hold with American mothers thus beginning the medical establishment's control of childbirth. By 1950, 88% of births occurred in hospitals.³¹ One difference between childbirth in the hospital versus the home in the first half of the 1900s was that in the hospital mother and child were separated shortly after birth. When women gave birth in the home, commonly under the care of a midwife, mother and baby were immediately united and remained so as the mother recovered. However, as one young mother complained shortly after giving birth in a hospital in 1943, the hospital essentially owned the baby after birth since babies were sequestered to a nursery rather than with the mother after birth.³² It was commonly

²⁸ Clifford et al., 108.

²⁹ Apple, 73.

³⁰ Apple, 73.

³¹ Wolf, 192.

³² Wolf, 192.

believed by physicians that a mother needed an extensive rest following the birth of her child and that only after she had recovered from her experience was she ready to be with her newborn. According to a 1947 panel discussion held by the American Academy of Pediatrics which focused on the care of newborns in hospitals it was noted that after the mother's "vigor is established, every full-term, normal infant should be taken to his mother. This will usually be possible 8 to 24 hours after birth."³³

The regimented scheduling that was common in hospitals usually worked against mothers trying to breastfeed. One recommendation given to women who gave birth in hospitals that was absent for women who gave birth at home and may have contributed to women's decreased milk supply was the recommendation of strict infant feeding schedules. While there was no sole recommendation on how often and when to feed an infant under the age of 1 there was one constant in these recommendations: schedules should be regimented and strictly adhered to. The management of babies with schedules and routines commonly resembled the schedules to which adults adhered. In 1926, the Chicago Department of Health stated, "a clock in a baby's room is as important to the mother and baby as a good watch is to a railroad engineer...Spoiling the baby then begins in the first few days. Doing things by the clock develops the habit of doing things on time and at the same time makes a baby with good habits."³⁴

One physician recommended that "Healthy babies do not require nightly feedings" and that feeding in the evening "exhausts the milk supply."³⁵ Regularity, according to many physicians, was the goal. Little did they know that such advice only contributed to the decrease in lactation for women since it is through constant nursing that more milk supply is produced.

Prior to the 1940s mother and baby did not room in together during their stay in the hospital following childbirth. Instead, babies were moved to nurseries shortly after birth while the mother remained in her room. Babies were normally fed on a strict

³³ Clifford et al., 108.

³⁴ Wolf, 32.

³⁵ Wolf, 32.

feeding schedule where a nurse would bring the newborn baby to the mother every four hours to be fed, thus making the nurse, not the mother, responsible for the feeding schedule of the infant. For mothers often experiencing engorgement a few days after delivery the inability to feed their infant on demand often hindered the breastfeeding process. Mothers would experience pain from engorgement and babies often found it difficult to nurse on the nipple of an engorged breast.

While physicians did recommend to nurses that they should promote breastfeeding to new mothers they often advised nurses not to argue the matter but rather “express mild surprise” since “the postpartum period is entirely too late for such efforts.”³⁶ Overlooked was the fact that the mothers required hospital stay of 7 to 8 days was more than enough time to provide thorough instructions to mothers on breastfeeding. However, La Leche League consultants would not exist until the late 1950s, therefore nurses, usually caring for an average of 12 newborns at a time with the help of only one aide, and physicians trained in the physiology of lactation but not necessarily breastfeeding, had to fill the void.

However, beginning in the late 1940s more physicians were beginning to recommend mother and baby rooming in together as one method of involving women more in the care of their newborn and as a way to promote breastfeeding. In a 1948 issue of the journal *Pediatrics* doctors noted that “A mother’s care of her baby will be more personal and intelligent if it starts at the beginning...It tends to promote breastfeeding... [and] Mothers with such experience in the hospital know their babies better on dismissal.”³⁷ Benefits to mother and baby when both were allowed to room together did not go unnoticed. The first successful experiment of rooming in, conducted in a New Haven Hospital in 1948, concluded that the mother “nursed easily whenever the baby was hungry” since she did not have to rely on a regimented schedule of feedings as dictated by a nurse. The study also found that when the mother went home “there was no

³⁶ Clifford et al.,108.

³⁷ Clifford, et al.,110.

confusion nor any diminishing of breast-milk.”³⁸ Because mother and baby were co-located following birth both parents were better able to determine the child’s needs before he cried.

In addition to the medical establishment’s control of childbirth and the hospital experience of new mothers following childbirth another influential factor in breastfeeding rates during the first part of the 20th century was the change in infant feeding practices and the alternatives to human milk substitutes available to mothers and physicians. Infant feeding milestones that are examined in this chapter include the introduction of formula and the various recipes of human milk substitutes as well as the introduction of commercially made formulas and the inception of the La Leche League.

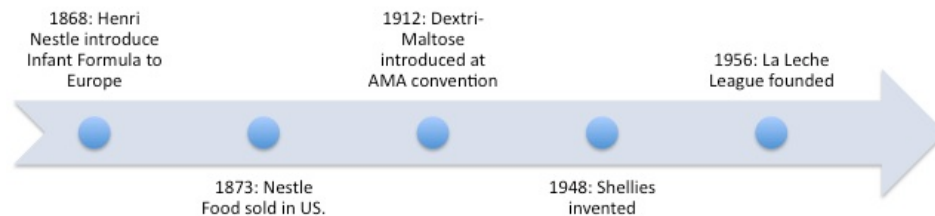


Fig. 1. Milestones in Infant Feeding technologies from the late 1800s to mid 1900s.

Milk substitutes have varied greatly since the introduction of infant formula in Europe in 1868 by Henri Nestle and through the adoption of commercial grade formulas through to the 1940s (Figure 1). Most milk substitutes during this period were mixtures of cows’ milk, carbohydrate (usually sugar) and water. However, the percentage of these types of ingredients and the composition of the cows’ milk differed as scientists and physicians learned more about the ingredients of breast milk and cows’ milk. While physicians still held out during this period that breast milk was the best milk, high infant mortality rates and common complaints amongst mothers about inadequate milk supplies led physicians to find alternates to breast milk that mimicked the nutrients found in breast

³⁸ Augusta S. Clay, “Guidance In Maternal and Infant Care Two Months Before and After the Birth of the First-Born,” *Pediatrics* 2 (1948): 203.

milk.

In the latter part of the 1800s and early part of the 1900s the cows' milk that was used in infant formulas came in the form of either whole milk, evaporated milk or powdered milk. Usually the milk was diluted with water and some form of carbohydrate sugar. Beginning in 1912 commercial milk products such as Dextri Maltos and S.M.A began an aggressive marketing campaign that first targeted physicians since it was becoming increasingly common for parents to rely on physician recommendations for infant feeding in early 1900s. However, these infant formulas were not available to parents over the counter nor were they packaged with feeding instructions. Instead, they were marketed directly to doctors who were then responsible for prescribing the dosage necessary depending on the infant. The mother would then follow the instructions on the doctor prepared label and then have to return to the doctor to get another "prescribed" dose of formula for her infant.

Through the 1920s and 30s the makers of Dextri Maltose and S.M.A formulas continued their ad campaigns targeting both physicians and mothers. Films such as "The Preparation of Modified Milk Formulas" by Mead Johnson, the makers of Dextri-Maltose, taught women how to prepare the infant formula. Often heard throughout the film was that "artificial feeding should be 'prescribed by the physician' and that infant feeding should be under the 'physicians' direction."³⁹ Physicians were also sent free samples and booklets that touted the science behind the commercially made formulas and the ease of their use. Prior to the manufacturing of artificial infant food, infant formulas were crafted by physicians and followed methods such as the Percentage Method. These methods often included time consuming calculations of the degree of cows' milk, water and carbohydrate that were needed for infants on a case by case basis. Such formulas also varied by physician and by hospital depending on the latest research available to doctors in the late 1800s and early 1900s. Commercially made formulas were advertised to physicians as simple and easy to prescribe since "the physician is relieved of exacting

³⁹ Apple, 78.

detail' in prescribing it, and the patient 'can prepare it properly' with little chance of error."⁴⁰

In 1958, an article in *Pediatrics* noted the sway with parents that infant formulas companies had when they offered free samples of their product to hospitals. The article reported, "It is natural to assume that parents of infants born in a hospital may presume that the house formula must be the 'best' food for their infant if is endorsed by *their* hospital for *their* baby. Certain manufacturers of infant foods are aware of this influence. Thus in the promotional program of these companies, it has become customary to supply hospital nurseries with their respective milk mixtures and sugars free of charge."⁴¹ When hospitals started giving mothers a ready-made bottle of formula as she and baby were leaving the hospital the message was clear: bottle-feeding was just as good as breastfeeding.

Another influencing factor with regard to infant feeding technologies that helped advance bottle-feeding amongst mothers in the first part of the 1900s was the modernization of the bottle itself. Prior to 1948 most bottles were made out of glass and either had to be sterilized through boiling or washed heavily with soap. However, in 1948 the first collapsible plastic bottle was introduced therefore advancing the ease of bottles to feed infants. Invented by a nurse, the Shellies bottles were collapsible and did not required sterilization since they were soft plastic inserts that could be thrown away. Granted a mother had to buy the necessary accessories (the inserts themselves and rubber rings to keep the insert in place on the nipple), nevertheless the Shellie insert meant less time spent cleaning and sterilizing bottles. Marketed as an infant feeding method comparable to breastfeeding the Shellies were advertised to "give the baby much the feeling of security and warmth that breast-fed babies get while nursed by their mothers."⁴² Shortly after, the company Playtex bought Shellies and continues to manufacturer similar types of plastic bottles with inserts to this day.

⁴⁰ Apple, 81.

⁴¹ Herman F. Meyer, "Infant Feeding Practices in Hospitals Maternity Nurseries: A Survey of 1,904 Hospitals Involving 2,225,000 Newborn Infants," *Pediatrics* 21 (1958): 290.

⁴² "New Plastic Nursery Aid Eases Feeding of Babies," *The Science News-Letter*, October 30th 1948.



NEW NURSING BOTTLE—*The mother is shown feeding the baby out of a new collapsible, disposable nursing bottle that requires no washing or sterilizing.*

Fig. 2. 1948 advertisement of Shellies Nursery Aid. Source: “New Plastic Aid Eases Feeding of Babies.” *The Science News-Letter*, October 30th, 1948.

In 1956 the La Leche League was formed. Founded by six mothers The League, as it is commonly known, saw the need to provide support and information on the basics and importance of breastfeeding to women. The founding mothers of the La Leche League each had their own experiences with the medical establishment’s control of childbirth and infant care and it was from those experiences the idea for The La Leche League was born. A few members had been able to successfully nurse from the time of their first child whereas a few had tried to nurse with their first or second child and were not successful but were determined to be with their later children. Frustrated by the lack of breastfeeding support by the medical establishment the La Leche League sought to create a social network to share information and ideas about breastfeeding instruction and concerns.

It wasn’t that doctors weren’t acknowledging the benefits of breastfeeding during the 1950s. The problem, The League saw, was that physicians and mainstream literature were not doing enough to encourage mothers to breastfeed when problems arose. According to *The Womanly Art of Breastfeeding*, first published in 1958, the mission of The La Leche Leagues was to normalize the act of breastfeeding by describing it as

something inherent to women and not something that needed medical instruction by a physician. The first edition begins with, “Mothers have happily nursed their babies since the time of Eve. Breastfeeding is a natural and unique system of supply and demand which best serves mother and baby. Breastfeeding has not become complicated; only our attitudes toward it have created problems.”⁴³

The La Leche League was able to provide mothers who wanted to breastfeed that which mainstream medical authors, like Dr. Benjamin Spock, did not: a forum for mothers to discuss not just basic questions about breastfeeding but concerns and the joys of it as well. According to Jule Ward author of *The La Leche League: At the Crossroads of Medicine, Feminism, and Religion* mainstream medical authors of the 1950s may have agreed that breast milk had its benefits but they never seriously pushed the issue onto mothers that they *should* breastfeed even when complications do arise. Rather physicians like Dr. Spock had a “more relaxed approach to parenting in the midcentury” and that such an approach “did little to attest the erosion of breastfeeding as the preferred choice for infant nutrition.”⁴⁴ It is uncertain the exact statistical impact the La Leche League had on easing the declining rates of breastfeeding from its inception to present day. While the La Leche League’s efforts did not prevent breastfeeding rates from declining in the 1950s and 1960s The League did manage to bring back the social networking and the “mother to mother” support that was more common prior to the introduction of technology and medicine into infant care.

The last influence that is examined as having a possible role in the declining rates of breastfeeding from the early 1900s to 1969 is the movement of mothers with young children into the workforce. As the United States became more industrialized at the turn of the century many women left the home for the industry in order to either fill labor shortages experienced by the absence of men during WWI and WWII or to provide for the family as another source of income.

⁴³La Leche League International, *The Womanly Art of Breastfeeding* (Franklin Park, Ill: La Leche League International, 1958) Forward.

⁴⁴ Ward, 38.

The movement of mothers working in the private domain of the home to the public domain of the industry has been cited as one reason that breastfeeding rates declined steadily from the 1900s to the beginning of the 1970s.⁴⁵ Prior to the industrialization of America women's work, for the most part, centered on domestic work or work in the home and/or farm. Items that were normally knitted, sewn or created by hand prior to the 1900s were now being massed produced by commercial machines and workers on an assembly line. According to a radio address produced by the Women's Bureau in 1924 the reason many women were leaving the home for "the factories and mills" was because "most of them are doing the work which used to be done by women in the home before machines were invented and industry was organized to make the things that used to be made by women's hands at home."⁴⁶

Initial reports about women workers by the U.S. Department of Labor's Women's Bureau did not report comprehensive national statistics of mothers with young children who were in the labor force. Instead, studies by the Department of Labor that included working women with children were usually under reports about married women and were normally done by city and not the nation as a whole. The Women's Bureau did devote a short paragraph to the subject of "Breadwinning Mothers" in a 1925 bulletin based on a statistical analyses done by the U.S. Census Bureau in which the family status of working women in four U.S. cities was gathered. The data collected from the cities in Florida, Montana, Pennsylvania, and New Jersey Studies reported "nearly 53 percent of all the gainfully employed matrons had children, and 40 percent of these mothers had babies under 5 years of age."⁴⁷ Reports of single mothers and their working status were not published by the Women's Bureau during this time.

During the early 1900s, studies do exist about the causal relationship between working women and the health of their infants in regards to the infant mortality rate of

⁴⁵ Penny Van Esterik, Ted Greiner, "Breastfeeding and Women's Work: Constraints and Opportunities," *Studies in Family Planning* 12, no. 4 (1981): 184.

⁴⁶ U.S. Women's Bureau, "Radio Talks On Women in Industry," *Bulletin of the Women's Bureau* 36-46. edited by U.S. Department of Labor. Washington, D.C.: Government Printing Office, No 36, 1924.

⁴⁷ U.S. Women's Bureau, "Family Status of Breadwinning Women in Four Selected Cities," *Bulletin of the Women's Bureau* 36-46. edited by U.S. Department of Labor. Washington, D.C.: Government Printing Office, 1925.

that era. For example, in 1924 the Women's Bureau reported that there "seems to be a fairly definite relationship between infant mortality and the employment of mothers outside of the home."⁴⁸ This statistic is not surprising since evidence examined earlier discusses the relationship between infant mortality at the turn of the century and the increased use of artificial milk. When most of the work women did was centered in the home and farm, mothers had the time and round the clock opportunity to breastfeed their infant. Working mothers were more likely to feed their children artificial food since they were usually unavailable to breastfeed while at work and therefore normally had to wean their baby in order to work outside the home. While the infant mortality rate of babies whose mothers stayed home for at least the first year of life was less than babies whose mothers worked during the first year, the Women's Bureau concluded that for those babies whose mothers did work, infant mortality and family income were also directly related.⁴⁹

Labor laws during this era varied by state and dictated everything from the number of hours women were allowed to work to the lengths of breaks they were allowed to take during their shift. Working mothers of infants were not afforded many of the protections that many working mothers are privy to today. Laws to protect the rights of pregnant and breastfeeding women did not exist in some states until the 1970s and 80s. In an article researching women's work and breastfeeding, Penny Esterik and Ted Grainer argue that the employment of mothers "may not be as important a factor as the conditions in the work environment."⁵⁰ Lactation rooms, available refrigeration for breast milk, and portable electric pumps were not available to working mothers in the early to mid 1900s and therefore most working women were more likely to feed their children commercially produced foods rather than breast milk.

Beginning in the 1960s, the US Census Bureau began gathering statistics about employment and maternity leave patterns of first-time mothers. This is the only

⁴⁸ U.S. Women's Bureau, "Married Women in Industry," *Bulletin of the Women's Bureau* 36-46, edited by U.S. Department of Labor. Washington, D.C.: Government Printing Office, No. 38 1924.

⁴⁹ U.S. Women's Bureau, "Married Women in Industry", 6.

⁵⁰ Esterik, Greinerm, 185.

statistical information available during this time period that relates to data inferring a possible correlation between working mothers and breastfeeding rates. According the U.S. Census “17 percent of women in the 1961-65 first birth cohort returned to work 3 months after giving birth.”⁵¹ What is not known, however, is whether these women continued to breastfeed. The numbers of women working and whether or not they breastfed were not examined until the 1970s, but Figure 3 is still presented in order to compare breastfeeding rates with the rates of mothers entering the workforce following the birth of their first child.

Percent of Women Working After Their First Birth: 1961-1965

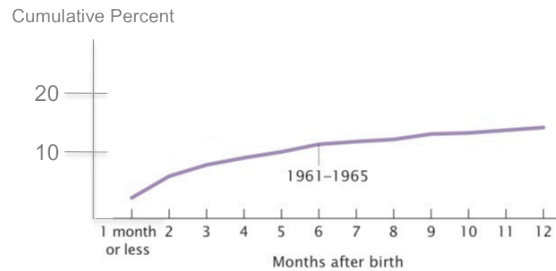


Fig. 3. Percent of Women Working After Their First Birth: 1961-1965. Source: Maternity Leave and Employment Patterns of First Time Mothers: 1961-2003. U.S. Bureau of the Census, Current Population Reports, Series P70, No.113. Washington, DC: U.S. Government Printing Office.

Characteristic	1961–1965	1966–1970
Women with a first birth		
Number of women (thousands) . .	6,306	6,956
Percent	100.0	100.0
Cumulative percent working after:		
Less than 1 month ¹	1.9	1.3
1 month	3.8	4.6
2 months	7.8	9.0
3 months	9.9	12.7
4 months	11.2	15.2
5 months	12.3	16.5
6 months	13.7	18.3
12 months	16.8	23.9
24 months	22.5	29.8
60 months	33.5	41.1

Table 3. Women Working at Monthly Intervals After First Birth by Year of First Birth: 1961-1965 to 1966 – 1970. Source: Maternity Leave and Employment Patterns of First Time Mothers: 1961-2003. U.S. Bureau of the Census, Current Population Reports, Series P70, No.113. Washington, DC: U.S. Government

⁵¹ Tallese D. Johnson, “Maternity Leave and Employment Patterns of First Time Mothers: 1961-2003,” U.S. Bureau of the Census, Current Population Reports, Series P70, No.113). Washington, DC: U.S. Government Printing Office.

Printing Office.

Table 3 shows an increase in both the time periods of women returning to work following the birth of their first child with the exception of women returning to work after less than one month. As infants grew older, women increasingly returned to work. In 1961-1965 the number of women returning to work following childbirth at one month is 1.9% of women surveyed and jumps to 22.5% of women surveyed after 24 months. In 1966-70 the number of women entering the work force one month following childbirth is 1.3% of the 6,956 women surveyed and jumps up to 29.8% of women surveyed after 24 months.

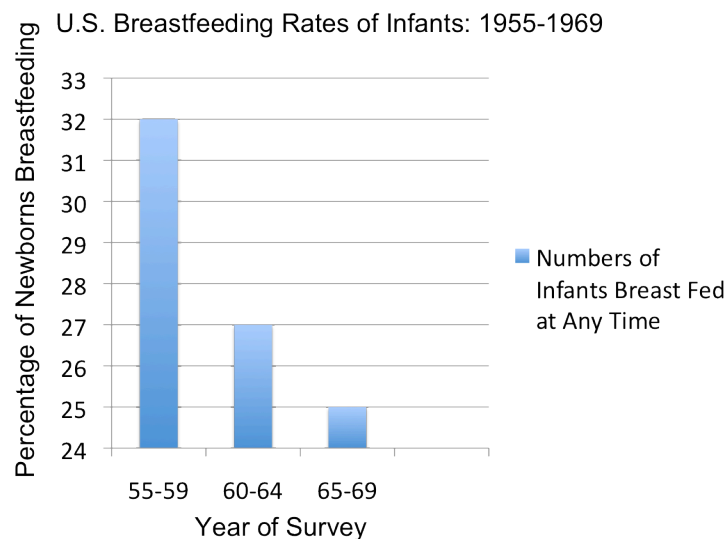


Fig. 4. U.S. Breastfeeding Rates of Infants: 1955 – 1969. Source of Data: Alan S. Ryan, et al., “A Comparison of Breast-Feeding Data from the National Surveys of Family Growth and the Ross Laboratories Mothers Surveys,” *American Journal of Public Health*, 81, no.8 (1991):1050

Compare the number of women entering the work force following the birth of their first child with breastfeeding rates of infants during the same time periods (Figure 4) and there is an inverse correlation between the two. During the time period between 1955-59 the number of infants that were breastfed at any time was 32% of those surveyed (during any given time period the sample survey consisted of about 9800 to 8600 women). However, from 1960-64 that rate dropped to 27% and by 1969 the rate fell even further to 25%. Even though the survey sample sizes differ it is possible to see a correlation between the

increase of women in the workforce in the 1960s and the decrease in the number of infants being breastfed during that same time period.

As in the case for working mothers in the early 1900s, working mothers in the 1960s did not have the lawful protections in the workplace nor was the technology available to make breastfeeding easier for working women that exist today. It is therefore assumed that the increased participation of mothers with infants in the workforce during the 1960s played a role in the declining breastfeeding rates of that time period.

As stated earlier in this report, there is no single direct cause to the decline in breastfeeding rates amongst newborns between 1900 and 1969. What is evident are the roles that science, technology, and work play in altering breastfeeding rates and the way they affected early 20th century mothers' decisions on whether or not to breastfeed during this time period. Yet the interplay between science, technology and work and how they effect breastfeeding are not limited to the first part of the 20th century. In fact, their effects on breastfeeding rates continued into the 1970s, but not necessarily in a negative way.

Chapter 2: Breastfeeding Trends from 1970 to 1979

In the first part of the 1970s, breastfeeding rates continued to decline. In 1970 26.5% of women surveyed in-hospital were breastfeeding their newborns (Table 4). In 1971, the breastfeeding rate for newborns dipped again to 24.7% of women surveyed. However, the following year the rates of women breastfeeding their babies in the hospital jumped to 28.1% and by 1979 were at an all time high of 51%.⁵²

Year	In-Hospital %		At 6 Months %	
	Breastfeeding	Exclusive Breastfeeding	Breastfeeding	Exclusive Breastfeeding
1965	28.2	24.5		
1966	27.6	22.9		
1967	27.6	24.1		
1968	28.7	25.3		
1969	28.4	25.3		
1970	26.5	23.2		
1971	24.7	21.7	5.4	3.2
1972	28.1	24.8	5.0	3.1
1973	28.9	25.2	7.5	4.7
1974	32.2	27.8	6.5	5.2
1975	35.5	31.1	14.1	10.3
1976	41.6	36.2	17.0	12.7
1977	44.7	39.4	19.6	14.1
1978	46.6	41.7	18.9	13.7
1979	51.0	45.8	21.3	16.1

Table 4. Breastfeeding and Exclusive Breastfeeding in the Hospital and at 6 Months of Age by Year, 1965-1979. Source: Alan S. Ryan, Zhou Wenjun, Andrew Acosta. "Breastfeeding Continues to Increase into the New Millennium." *Pediatrics* 110 (2002): 1103-09.

As with the decline of breastfeeding in the first part of the 20th century, no one reason is singled out as being the cause of the sudden increase of breastfeeding rates in the 1970s. In fact, marketing ploys by infant formula companies were more advanced and aggressive. It was common for new mothers in hospitals during this era to receive a diaper bag with formula samples upon discharge. However, as a task force report by the American Academy of Pediatrics reported, "it appears that promotion by formula companies is more likely to follow social change than to lead it" since by the end of the

⁵² Alan S. Ryan, et al., "Breastfeeding Continues to Increase Into the New Millennium," 1108.

1970s breastfeeding rates had doubled.⁵³

Researchers have pointed to several factors that have collectively contributed to increasing breastfeeding rates amongst mothers in the 1970s: the women's rights movement, the move to a more natural method of living, more political support with regards to laws that protect mothers in the workplace and a willingness in more hospitals to promote breastfeeding over bottle-feeding to new mothers.⁵⁴ The education of women in the benefits of breast milk over formula is also considered an influential factor with regards to breastfeeding rates. In an article examining the resurgence of breastfeeding trends in the early 1970s, one researcher wrote that education and the rise of breastfeeding amongst the educated, "independent of any association it may have with race, employment status, source of prenatal care, or year of infant's birth, accounts for a large part of the difference in breastfeeding among groups."⁵⁵ As the study shows in Table 5, the percentage of mothers who breastfed was higher amongst those with more than a high school education compared to mothers with a high school education or less.

Mother's Education	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
High school or less	19%	...	19%	24%	28%	40%	...	48%
More than high school	42%	...	42%	50%	52%	63%	...	72%

Table 5. Percentages of Infants Ever Breast-Fed by Mother's Education, 1971-1980. Source: Gary E. Hendershot. "Trends in Breast-Feeding." *Pediatrics* 74, no. 4 (1984): 591-602.

Essentially, the more educated a mother was, the more likely she would know about the latest research proving the benefits of breast milk over formula and therefore more open to breastfeeding. Whereas in the early part of the 20th century the more educated a woman was, the least likely she was to breastfeed, in the 1970s that pattern reversed. Instead, breastfeeding rates dropped for lower-income, less educated mothers and surged

⁵³ American Academy of Pediatrics, "The Promotion of Breast-Feeding: Policy Statement Based on Task Force Report," *Pediatrics* 69(1982): 657.

⁵⁴ Edward C. Baer, "Promoting Breastfeeding: A National Responsibility," *Studies in Family Planning* 12 (Apr 1981): 199.

⁵⁵ Kenneth W. Eckhardt et al., "Analysis of the Reversal in Breast Feeding Trends in the Early 1970s," *Public Health Reports*, 99, 4 (Jul-Aug 1984):412.

for higher income, more educated mothers.⁵⁶ One author noted, “these high-income women, who are likely also to be white and well-educated, are the ones who led both the decline and resurgence in breastfeeding.”⁵⁷

As physicians and scientists learned more about the process of lactation new infant feeding technologies emerged or were being used more frequently to help women to either stop or induce lactation. One such support system to assist women who either wanted to breastfeed adopted children or who had problems of not having enough milk was the Lact-Aid Nurser Training System (Figure 5). Introduced in 1971 and still in existence today, the Lact-Aid Nurser Training System is a tube feeding system invented for mothers with insufficient milk supply or mothers who want to begin lactation (i.e., mothers adopting infants). The Lact-Aid Nurser has one end attached to the mother’s nipple and the other attached to a pouch, thus allowing mother to nurse her child while feeding a milk substitute at the same time. The suckling of the baby nursing therefore provides the stimulant effect needed to promote lactation. One study, conducted in 1979, proved scientifically the positive outcomes of babies whose mothers used Lact-Aid to increase their milk supply.⁵⁸ All four mothers in the study complained of not having enough milk to sustain their babies and as a result their children were deemed underweight. Understanding the benefits of breast milk and the nutritional importance of breast milk for children who are underweight researchers reported that the mother’s use of Lact-Aid during the study “helped correct the problems of breast milk insufficiency and poor infant weight gain.”⁵⁹

⁵⁶ Charles Hirschman et al., “Trends and Differentials in Breast Feeding: An Update,” *Demography*, 18, 1(Feb 1981): 50.

⁵⁷ Ellen H. Starbird, "Comparison of Influences on Breastfeeding Initiation of Firstborn Children," *Society of Science Medicine* 33, no. 5 (1991):633

⁵⁸ Carol E. Weichert, “Lactational Reflex Recovery in Breast-Feeding Failure,” *Pediatrics* 63, No.5 (May 1979): 799

⁵⁹ Peter D. Magnus, “Benefits of Breast Milk”, *Pediatrics* 65, no.1 (Jan 1980): 192.



Figure 5. Lact-Aid Nursing Training System. Source: <http://www.lact-aid.com>

The benefits of breast milk as the recommended milk choice for infants was being studied and explored more as researchers discovered immunological and an assortment of other health benefits of breast milk for infants that were previously unknown prior to the 1970s.⁶⁰ The use of technologies such as Lact-Aid amongst mothers and the recommendation and study of such technologies by pediatricians confirm that physicians were advocating breastfeeding to mothers and infants even as problems such as insufficient milk and underweight infants arose. In the first part of the 20th century, when such problems were reported by mothers, a physician's usual response was to recommend weaning and the use of infant formula to combat milk deficiency and low infant weight. However, as journals such as *Pediatrics* published more reports on the benefits of breastfeeding not just for the infant but for the mother as well, the recommendation to breastfeed was promoted more than the recommendation to bottle-feed when problems of feeding arose with newborns.

As the rate of working mothers began to climb physicians and law makers began to take notice. For physicians the concern was whether employment hindered the decision of mothers to breastfeed. For law makers and most certainly employed mothers the concern was how the law could better support mothers returning to work after pregnancy and better protect them from discrimination. In 1976 the American Academy

⁶⁰ American Academy of Pediatrics, "Breast-Feeding: Nutrition Committee of the Canadian Paediatric Society and the Committee on Nutrition of the American Academy of Pediatrics," *Pediatrics*, 591-601, 1978.

of Pediatrics published a commentary that discussed steps that medical staff and employers can take to promote breastfeeding:

Important steps which will encourage breast feeding include more educational programs for adolescents and pregnant women and reinforcement by obstetricians, pediatricians and nurses attending pregnant women. Changes in employment policies and working conditions and provision of day care centers at or near places of employment to make breast feeding practical for working mothers will increase the frequency of breast feeding.⁶¹

Researchers understood that in order to promote breastfeeding as the preferred method of infant feeding, the maternal choice of what to feed an infant and why had to first be understood. This meant taking into account not just socio-economic factors facing women (i.e., work outside the home) but also hospital environments and how these environments factor into the decision making process of whether or not to breastfeed. One study went so far as to examine the actual process mothers go through when deciding whether to breastfeed or not (Figure 6). This process, as advertised in a 1978 breastfeeding policy statement by the American Academy of Pediatrics, was meant to educate hospital personnel on how best to promote breastfeeding to mothers.

⁶¹ Lewis A. Barness, et al., "Commentary on Breast-Feeding and Infant Formulas, Including Proposed Standards for Formulas," *Pediatrics* 57 (1976): 279.

It was also in the 1970s when the American Academy of Pediatrics starting publishing policy statements in order to influence breastfeeding and change the hospital environment as a place where breastfeeding promotion was most important. Whereas physicians once cautioned mothers to adhere to a strict feeding schedule for their infants the Committee on Nutrition of the American Academy of Pediatrics recommended to hospitals that infants should be fed “on an on-demand schedule rather than on a rigid three-to four-hour schedule.”⁶² Acknowledging the problems associated with the convenience bottle fed babies can offer to hospital personnel who are not very educated in the art and science of breastfeeding, the AAP noted that in order “To enable the new mother to breast-feed, she needs free access to her infant, knowledgeable help, encouragement, and instruction.”⁶³ The AAP, in almost a reversal of recommendations once reported in *Pediatrics* in 1948 recommended changes in the hospital. These changes included: a decrease in anesthesia to laboring mothers since it may interfere with an infant’s suckling effort, the avoidance of separating mother and baby during the first 24 hours after childbirth, on-demand feeding, no supplementary formula feedings, rooming-in, and education in the science of lactation and breast care. Last, the AAP recommended consultations between hospital staff and the La Leche League for further instruction and education on breastfeeding.

In a study that compared breastfeeding influences in 1960-69 and 1970-79 it was found that not only was the education of medical personnel on breastfeeding important but the immediate contact, not separation, of mother and baby following child birth was also a positive influence on the initiation of breastfeeding. The study found that “Sixty-two percent of mothers in the 1960-1969 group first held or fed their child more than 6 hrs after birth, compared with 47% in the 1970-1979 group” and that “more women in the later period than the early period received at least some of their information about

⁶² American Academy of Pediatrics, “Breast-Feeding: Nutrition Committee of the Canadian Paediatric Society and Committee on Nutrition of the American Academy of Pediatrics,” 598.

⁶³ Ibid.

breastfeeding from a medical person (58% vs. 50%).”⁶⁴ The authors learned that when a mother had a “medical source of breastfeeding,” the odds that she would breastfeed were 3.5 times more likely than women who did not have a medical source knowledgeable in breastfeeding present.⁶⁵ The study concluded that in addition to a mother’s education level, medical personnel who were more knowledgeable and supportive of breastfeeding coupled with decreases in the amount of time mother and baby spent apart following childbirth the more likely a mother was to breastfeed her child.

Table 6 summarizes additional recommendations by Jelliffe and Jelliffe, both leading researchers on breastfeeding trends in the 1970 and 80s, that hospitals should use to implement breastfeeding promotion. These recommendations were based on the examination of various hospitals and their breastfeeding policies in the 1970s.

Health service	Modifications
Prenatal care	Information on breast-feeding (preferably from breast-feeding mothers). Breast preparation. Maternal diet. Emotional preparation for labour.
Puerperal care	Avoid maternal fatigue/anxiety/pain (e.g. allow to eat in early labour; avoid unnecessary episiotomy; husband permitted during delivery; relatives and visitors allowed; privacy and relaxed atmosphere; organization of day with breast-feeding in mind). Separate mother and newborn as little as possible. Stimulate lactation (e.g. no prelacteal feeds; first breast-feeding as soon as possible; avoid unnecessary maternal anaesthesia; permissive schedule; rooming-in). Lactation ‘consultants’ (advisers—preferably women who have breastfed). Adequate “lying-in” period. In hot weather, extra water by dropper on spoon. Forbid formula samples.
Premature unit	Use of expressed breast-milk (preferably fresh). Contact between mother and baby with earliest return to direct breast-feeding.
Children’s wards	Accommodation in hospital (or nearby) for mothers of breast-fed babies.
Home visiting	Encourage, motivate, support.
Health center	Supplementary food distribution (e.g. formula and weaning foods) according to defined, locally relevant policy.
General	Supportive atmosphere from all shifts. Avoid promotion of unwanted commercial infant foods (e.g. samples, posters, calendars, brochures, etc). Adopt minimal bottle-feeding policy and practical health education concerning “biological” breast-feeding.

Table 6. Possible Modifications in Health Services Designed to Promote Breast-Feeding in a Community. Source: D.B Jelliffe, E.F. Patrice Jelliffe. "Recent Trends in Infant Feeding," *Annual Review of Public Health* 2 (1981):156

⁶⁴ Starbird, 629.

⁶⁵ Ibid.,630.

In 1970, 30,584,703 women in the United States were participating in the labor force compared with 16,477,849 in 1950.⁶⁶ The Women's Movement, coupled with increased access to education and legislative efforts that focused on women's rights in the workplace all had key roles in these increases.⁶⁷ The numbers of working mothers had also reached an all time high in the 1970s. According to an article titled, "Reproduction and Work" the number of working mothers nationwide increased from just 9% in 1930 to 42% in 1972.⁶⁸ Even more substantial was the increase of mothers with children under the age of 6 entering the labor force. "The proportion of married women with children younger than 6 years of age who were in the labor force increased from 32% to 49% between 1970 and 1981."⁶⁹ Also interesting is the fact that fertility rates in the 1970s were at all time lows yet mother's workforce participation were at their highest rate yet. "While the number of children in families dropped from 65.8 million in 1970 to 59.7 million in 1978, the number whose mothers worked or looked for work rose from 25.5 million to nearly 30 million."⁷⁰

Several landmark legislative initiatives served as catalysts to the continued increase of women in the workforce during the 1970s. These included, but were not limited to, the Equal Employment Opportunity Act of 1972 which amended Title VII of the 1964 Civil Rights Act, the extension of occupational coverage in the 1972 Amendments to the Equal Pay Act of 1963, the Women's Educational Equity Act of 1974, and the Pregnancy Discrimination Act of 1978.⁷¹ By providing more protection to women from discrimination in the workforce these laws and legislation provided more working mothers the opportunity to not just return to work following pregnancy but stability in their job as well.

Many studies were conducted to see whether employment, already determined as

⁶⁶ Matthew Sobek, "New Statistics on the U.S. Labor Force, 1850-1990," *Historical Methods* 34 (2001):71-87.

⁶⁷ Ibid.

⁶⁸ Vilma R. Hunt, "Reproduction and Work," *Signs* 1, no. 2 (1975): 543-52.

⁶⁹ Alan S. Ryan, "Breast-Feeding and the Working Mother: A Profile," *Pediatrics* 83, no. 4 (1989): 524-31.

⁷⁰ Elizabeth Waldman, Allyson Serman Grossman, Howard Hayghe, Beverly L. Johnson. "Working Mothers in the 1970's: A Look at the Statistics," *Monthly Labor Review* 102, no. 45 (1979): 39.

⁷¹ Waldman, et al., 40.

one negative influence on breastfeeding rates but certainly not the sole reason, affected a mother's decision to breastfeed her child initially and for the long term. According to the Office of the Assistant Secretary of Health in a 1979 report titled, "Trends in Breastfeeding Among American Mothers (based on statistical data collected in 1973) since the early 1950s "there is no association between work and breast feeding of the first child", meaning that a woman's employment status does not seem to have an effect on whether or not she will choose to breastfeed.⁷² What her employment status does seem to indicate is how long she will breastfeed. The report concludes, "women who did not work were generally more likely than working women to breast feed for more than 3 months."⁷³

One thing is certain with regard to women's decisions to breastfeed in the 1970s: there is not one reason that can be attributed as having the most direct impact on the increase in breastfeeding trends. Even though it was commonplace during this decade for women to receive shots of bromocriptine to halt lactation after child birth (eventually discontinued after complications of low blood pressure and stroke as a result of getting the shot) and for new mothers to receive diaper bags sponsored by formula companies and containing packets of infant formula, breastfeeding still continued to prevail in the 1970s. As women obtained higher levels of education they seemed more likely to be aware of the factual evidence proving the immunological benefits associated with breastfeeding and were therefore more determined than previous generations of mothers to provide this benefit to their newborn children. This evidence also swayed physicians and hospitals to practice what they were preaching. Breastfeeding trends continued their upward climb into the late 1970s against the odds. However, this increase in breastfeeding trends would be short lived in the 1980s.

⁷² U.S. Office of the Assistant Secretary for Health, "Trends in Breast Feeding among American Mothers : Findings from the National Survey of Family Growth, United States, 1973," edited by U.S. Department of Health, Education and Welfare. Washington, D.C.: U.S. Government Printing Office, 1979.

⁷³ Ibid.

Chapter 3: Breastfeeding Trends from 1980 to 1989

In 1982 breastfeeding rates were at their highest peak with 61.9% of mothers breastfeeding at the hospital following childbirth.⁷⁴ As Table 7 shows, rates for exclusive breastfeeding and mothers breastfeeding their infants at 6 months were also higher compared to 1970 rates. However, beginning in 1983 breastfeeding trends would begin to decline slowly. Table 7 also shows that by 1989 breastfeeding rates for newborns in the hospital following childbirth had dropped back to 52.2%. Breastfeeding rates for infants 6 months and older were even lower.

Year	In-Hospital %		At 6 Months %	
	Breastfeeding	Exclusive Breastfeeding	Breastfeeding	Exclusive Breastfeeding
1965	28.2	24.5		
1966	27.6	22.9		
1967	27.6	24.1		
1968	28.7	25.3		
1969	28.4	25.3		
1970	26.5	23.2		
1971	24.7	21.7	5.4	3.2
1972	28.1	24.8	5.0	3.1
1973	28.9	25.2	7.5	4.7
1974	32.2	27.8	6.5	5.2
1975	35.5	31.1	14.1	10.3
1976	41.6	36.2	17.0	12.7
1977	44.7	39.4	19.6	14.1
1978	46.6	41.7	18.9	13.7
1979	51.0	45.8	21.3	16.1
1980	55.3	49.5	23.2	17.0
1981	57.6	51.5	25.1	17.8
1982	61.9	55.0	27.1	19.8
1983	58.4	51.2	23.3	16.5
1984	59.7	52.1	23.8	16.7
1985	58.0	50.6	22.1	14.5
1986	56.9	49.3	21.6	14.0
1987	55.5	47.6	20.2	13.1
1988	54.3	46.1	19.5	12.5
1989	52.2	44.3	18.1	11.0

Table 7. Breastfeeding and Exclusive Breastfeeding in the Hospital and at 6 months of Age by the Year: 1965-1989. Source: Alan S. Ryan, Zhou Wenjun, Andrew Acosta. "Breastfeeding Continues to Increase into the New Millennium," *Pediatrics* 110 (2002): 1103-09.

⁷⁴ Alan S. Ryan, Zhou Wenjun, Andrew Acosta, 1103-09.

Figure 7 shows the resurgence of breastfeeding in the 1970s that was discussed in Chapter 2. The graph depicts the peak of breastfeeding rates during this era in 1982 and then the subsequent decline in both in-hospital breastfeeding rates and breastfeeding rates at six months.

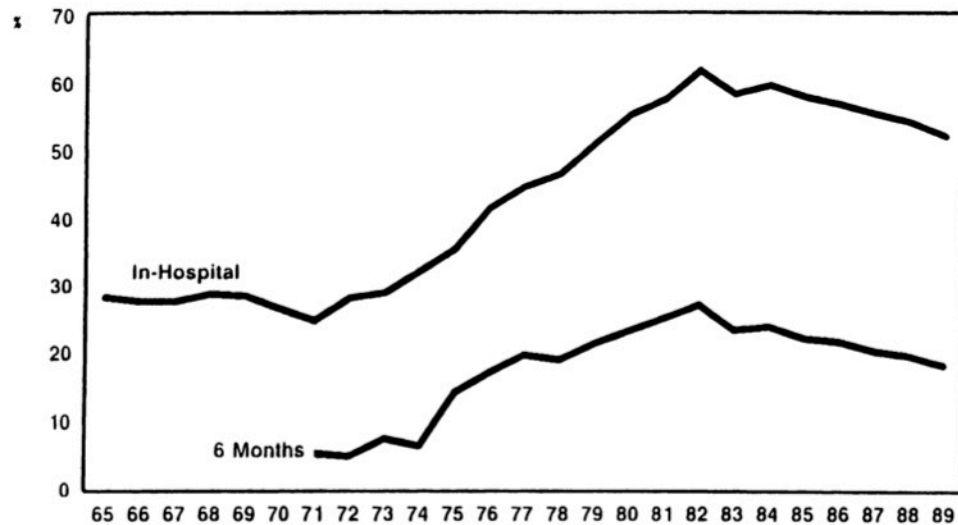


Fig. 7. Breast-Feeding Rates from 1965 -1989. Source: Alan S. Ryan, et al., "Recent Declines in Breast-Feeding in the United States, 1984 through 1989," *Pediatrics* 88, no. 4 (1991): 722.

How is it that breastfeeding trends would have such dramatic increases in the 1970s only to have a reversal in the mid 1980s? Advocacy for hospitals to promote breastfeeding practices, actual infant feeding technology, and the increased participation of women in the workforce had differed much since the 1970s. Researchers and articles in *Pediatrics* continued to advocate changes to the hospital setting that promoted breastfeeding: rooming in, La Leche League support, and immediate physical contact between mother and baby after childbirth.^{75,76}

The average length of stay for women in the hospital following childbirth continued to decrease in the 1980s. Beginning in 1970, the average length of stay was

⁷⁵ Hirschman, Butler, 39-54.

⁷⁶ American Academy of Pediatrics, "The Promotion of Breast-Feeding: Policy Statement Based on Task Force Report," 654-61.

approximately 4 days. By 1990 the average number was approximately 3 days.⁷⁷ Throughout the 1970s and 1980s physicians continued to debate over how the length of hospital stays postpartum affected the breastfeeding rates of newborns in the hospital. In the first part of the 1900s it was found that the longer a mother stayed in the hospital following childbirth the more likely she was to bottle-feed. As the length of time mothers remained in the hospital shortened since more insurance programs funded shorter hospital stays for inpatient care, physicians began to debate how this new trend affected breastfeeding rates at the time of discharge. More breastfeeding support programs for women before and after childbirth were being introduced in hospitals in the 1970s and 1980s and as a result physicians began to hypothesize that breastfeeding success depended more on the programs the hospital offered than on the length of time women remained in the hospital. In fact, in 1979 some physicians were recommending that in order to promote breastfeeding “the hospital stay should be as short as possible” so long as parents and newborns are seen within 2 days after discharge.⁷⁸ One hospital conducting research on how the hospital environment and staff influenced infant feeding practices concluded, “our results do indicate that a short hospital stay is ample time to influence some aspect of maternal behavior involving infant-feeding practices.”⁷⁹

As hospitals offered more staff support for breastfeeding, the length of stay in the hospital following childbirth became less of a factor in influencing breastfeeding rates in the 1980s than in previous decades. Physicians began to shift their focus on methods that would enhance breastfeeding programs in order to increase breastfeeding rates in the hospital. More attention was paid to how formula use by hospital staff and how mothers receiving discharge packets containing infant formula affected breastfeeding decisions by new mothers. One study conducted in 1984 by the UCLA Department of Pediatrics examined how infant feeding patterns were influenced by medical staff rhetoric and

⁷⁷ Center For Disease Control and Prevention, “Trends in Length of Stay for Hospital Deliveries-United States, 1970-1992,” *MMR Weekly*, May 2001.

⁷⁸ Sidney R. Kemberling, “Supporting Breast-Feeding,” *Pediatrics* 63, no.1 (1979): 61.

⁷⁹ Michael Reiff, Susan Essock-Vitale, “Hospital Influences on Early Infant-Feeding Practices,” *Pediatrics* 76, no. 6 (1985): 879.

practices with regard to breastfeeding promotion. The study concluded that while the medical staff often provided verbal recommendations on why breastfeeding was important to infant health, it was their actions, which included the “hospital modeling of infant formula products,” rather than their pro-breastfeeding rhetoric, that “was a potent predictor of formula choice by the end of the study period.”⁸⁰ In other words, the medical staff was not always practicing what they were preaching. In fact, the nurses positive attitudes about breastfeeding “had little influence on changing mothers’ feeding practices in the direction of enhanced breast-feeding or in determining mother’s bottle-feeding choices.”⁸¹ One report that offered strategies for changing hospital policy in order to promote breastfeeding stated, “Successful interventions include early mother-infant contact, rooming-in, true demand feeding, and no supplemental feedings. In addition, the attitudes and behavior of health workers, both individually and institutionally, can have significant impact on breastfeeding performance, specifically through breastfeeding education and support programs.”⁸²

With regard to infant feeding technologies, guidelines were created to legislate nutritional requirements for formulas. As infant formula promotion and advertising continued to rise, breastfeeding advocacy and infant formula regulation rose with it. It was now common for infant formula companies to acknowledge that breastfeeding should be the first choice for infant feeding (especially considering the medical establishment was promoting this and formula companies were prevented legally from advertising that their product was superior to breastfeeding). In 1982 a policy statement by the American Academy of Pediatrics noted this change when it wrote, “From the changing prevalence of breastfeeding and the changes that are taking place in the character of industry advertising—emphasizing breast-feeding as the first choice in infant feeding—it appears that promotion by formula companies is more likely to follow social

⁸⁰ Ibid., 878.

⁸¹ Ibid.

⁸² Deborah Jean Hales, “Promoting Breastfeeding: Strategies for Changing Hospital Policy,” *Studies in Family Planning* 12, no. 4 (1981): 167.

change than to lead it.”⁸³

One significant element in infant feeding technology was the increased scientific knowledge of the various nutrients that must be present in infant formulas in order to provide a nutritional substitute for infants who were not breastfed. While most of the discoveries regarding required nutrient content in infant formulas were made in the 1970s, it would not be until 1980 that action would be taken in the form of legislation to set a nutrient requirement for infant formulas. As the result of a controversial incident in 1978 in which an infant formula manufacturer removed the essential vitamin chloride from its soy protein formulas resulting in several cases of hypochloremic metabolic alkalosis in infants fed these formulas, the Infant Formula Act of 1980 was created. Introduced as a measure to prevent such incidents of infant death from inadequate formula, the Infant Formula Act “gave FDA authority to establish quality-control procedures for infant formula manufacturing, to establish recall procedures, to establish and subsequently to revise if necessary to nutrient levels, and to regulate labeling.”⁸⁴ One U.S. Senator, who supported the Infant Formula Act explained the priority of infant formula regulation over any other food regulation because “there is simply no margin for error in the production of baby formula. An infant relies on the formula to sustain life and provide the proper nourishment at a time of rapid physical and mental development.”⁸⁵ Figure 8 shows the infant nutrient requirements which were published in 1985 by the FDA and that companies were required to follow as a result of the Infant Formula Act.

⁸³ Ibid., 657.

⁸⁴ Samuel J. Fomon, "Reflections on Infant Feeding in the 1970s and 1980s," *American Journal of Clinical Nutrition* 46 (1987): 174.

⁸⁵ Federal Department of Agriculture, "Food Advisory Committee on Infant Formula: Overview," Federal Department of Agriculture, http://www.fda.gov/ohrms/dockets/ac/02/briefing/3852b1_01.htm.

	Minimum	Maximum
Protein (g)	1.8	4.5
Fat (g)	3.3	6.0
Linoleic acid (g)	0.3	—
Vitamin A (IU)	250	750
Vitamin D (IU)	40	100
Vitamin E (IU)	0.7	—
Vitamin K (μg)	4	—
Thiamin (μg)	40	—
Riboflavin (μg)	60	—
Vitamin B-6 (μg)	35	—
Vitamin B-12 (μg)	0.15	—
Niacin† (μg)	250	—
Folic acid (μg)	4	—
Pantothenic acid (μg)	300	—
Biotin‡ (μg)	1.5	—
Vitamin C (mg)	8	—
Choline‡ (mg)	7	—
Inositol‡ (mg)	4	—
Calcium (mg)	60	—
Phosphorus (mg)	30	—
Magnesium (mg)	6	—
Iron (mg)	0.15	3.0
Zinc (mg)	0.5	—
Manganese (μg)	5	—
Copper (μg)	60	—
Iodine (μg)	5	75
Sodium (mg)	20	60
Potassium (mg)	80	200
Chloride (mg)	55	150

* Food and Drug Administration, 1985 (58).

† Includes nicotinic acid and niacinamide.

‡ Required only for nonmilk-based infant formulas.

Fig. 8. FDA Infant Formula Nutrient Requirements. Source: Samuel J. Fomon, "Reflections on Infant Feeding in the 1970s and 1980s," *American Journal of Clinical Nutrition* 46 (1987): 176.

The numbers of women entering the work force continued to climb in the 1980s. As in the 1970s, the greatest increase in women's labor force participation was in the number of mothers with children under the age of 6. By 1985, "more than 40% of women with infants 1 year of age or less were engaged in full-time or part-time employment."⁸⁶ Table 8, published by the U.S. Census Bureau, reports the percentages of surveyed women who were working after three, six and twelve months following child birth. The table shows that between 1981 and 1984 52.5% of women surveyed returned to work after 12 months of giving birth to their first child. Table 8 also shows that between 1986 and 1990 the percentage of women surveyed who were working 12 months after childbirth was 60.8%. This increase is a significant one for a mere 9 year time frame.

⁸⁶ Alan S. Ryan, 524.

Characteristic	1961– 1965	1966– 1970	1971– 1975	1976– 1980	1981– 1984	1985– 1990
Women With a First Birth						
Number of women (thousands) ..	6,306	6,956	6,920	7,192	6,671	8,568
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Cumulative percent working after:						
3 months	9.9	12.7	15.6	22.4	32.9	41.6
6 months	13.7	18.3	21.9	32.2	43.5	52.9
12 months	16.8	23.9	27.9	38.8	52.5	60.8

Table 8. Women Working at Monthly Intervals After First Birth from 1961-1990. Source: Tallese D. Johnson "Maternity Leave and Employment Patterns on First-Time Mothers: 1961-2003." edited by U.S. Census Bureau: U.S. Department of Commerce, 2008.

The barriers in breastfeeding for working women in the 1980s did not change much from working women's experience in the 1970s. Laws were in place to protect women from unlawful discrimination in the workplace but there still did not exist legislation to protect working women who were breastfeeding in the work place. Researchers continued to put forth recommendations and strategies for working mothers and for employers in order to make changes in the workforce for breastfeeding women. Table 9 shows recommendations published in 1987 in the *Journal of Public Health Policy*. Listed are barriers that working women face when it comes to breastfeeding as well as the short and long term recommendations for overcoming these barriers. The recommendations include short-term strategies such as encouraging legislation for disability insurance for pregnant women, to long-term strategies that included the establishment of a national maternity leave policy.⁸⁷

⁸⁷ Rosemary Barber-Madden, Marybeth Albanese Petschek, Jean Pakter, "Breastfeeding and the Working Mother: Barriers and Intervention Strategies," *Journal of Public Health Policy* 8, no. 4 (Winter 1987): 531-41.

Barriers to Breastfeeding for Working Women and Potential Strategies

<i>Barrier</i>	<i>Short-Term Strategies</i>	<i>Long-Term Strategies</i>
Lack of child care at or near workplace.	1. (a) Provide information to mothers about child care near the worksite. (b) Establish a child care information and referral system.	1. Establish governmental policies to enable the majority of employers to subsidize child care.
Conditions of work environment	2. (a) Provide nursing breaks for working mothers. (b) Provide a place for mothers to pump their breasts and to refrigerate breastmilk.	2. Provide flex-time, job-sharing programs, and part-time options at the worksite.
Employer policies: (a) Inadequate maternity leave programs. (b) Loss of employment.	3. (a) Encourage legislation for disability insurance in states where programs do not exist.	3. Establish a national maternity policy with job-protected leave, full or partial wage replacement, and health insurance.
Societal attitudes toward breast-feeding.	4. Develop public education programs.	4. Develop educational programs for school-age children.
Mother's lack of understanding and knowledge about breastfeeding.	5. Establish worksite prenatal education programs on infant feeding and decision making, including information about employer policies and breastfeeding support measures. This can be included in existing health information/health promotion programs.	5. Integrate material about working and breastfeeding in all prenatal programs provided by all types of providers.
Lack of understanding and knowledge of health professionals about breastfeeding.	6. Develop professional education programs for health professionals, especially occupational health physicians and nurses.	6. Integrate material on breastfeeding into curricula in professional training programs at the undergraduate and graduate levels.

Table 9. Barriers to Breastfeeding for Working Women. Source: Rosemary Barber-Madden, Marybeth Albanese Petschek, Jean Pakter. "Breastfeeding and the Working Mother: Barriers and Intervention Strategies," *Journal of Public Health Policy* 8, no. 4 (Winter 1987): 535.

While research has shown that the duration of breastfeeding was shorter for working versus non-working women in the 1980s, the decision to begin breastfeeding was not affected by employment status (as was also the case in the 70s). According to Alan S. Ryan, a leading researcher in breastfeeding trends, "Although full-time employment does not limit breast-feeding initiation, it probably limits breast-feeding duration."⁸⁸ His study that profiled working women who were breastfeeding found that "Only 10% of full-time employed mothers breast-fed their infants at 6 months of age compared with 24% of those not employed."⁸⁹

Since there are no studies confirming that the sharp increase of women returning to work within 12 months of having their first child is the reason that breastfeeding rates

⁸⁸ Ryan, "Breast-Feeding and the Working Mother: A Profile," 531.

⁸⁹ *Ibid.*, 524.

declined from 1984 to 1989, we can only be hypothesized that this increase was a very influential factor. However, this trend would not continue into the 1990s since the U.S. would again experience a resurgence in breastfeeding rates.

Chapter 4: Breastfeeding Trends from 1990 to Present Day

Beginning in 1991 breastfeeding rates began to climb again. At that time, national breastfeeding rates of newborns still in the hospital were 53.3%.⁹⁰ As Table 10 shows, in 1999 those rates would jump to 67.2%.⁹¹

Year	In-Hospital %		At 6 Months %	
	Breastfeeding	Exclusive Breastfeeding	Breastfeeding	Exclusive Breastfeeding
1965	28.2	24.5		
1966	27.6	22.9		
1967	27.6	24.1		
1968	28.7	25.3		
1969	28.4	25.3		
1970	26.5	23.2		
1971	24.7	21.7	5.4	3.2
1972	28.1	24.8	5.0	3.1
1973	28.9	25.2	7.5	4.7
1974	32.2	27.8	6.5	5.2
1975	35.5	31.1	14.1	10.3
1976	41.6	36.2	17.0	12.7
1977	44.7	39.4	19.6	14.1
1978	46.6	41.7	18.9	13.7
1979	51.0	45.8	21.3	16.1
1980	55.3	49.5	23.2	17.0
1981	57.6	51.5	25.1	17.8
1982	61.9	55.0	27.1	19.8
1983	58.4	51.2	23.3	16.5
1984	59.7	52.1	23.8	16.7
1985	58.0	50.6	22.1	14.5
1986	56.9	49.3	21.6	14.0
1987	55.5	47.6	20.2	13.1
1988	54.3	46.1	19.5	12.5
1989	52.2	44.3	18.1	11.0
1990	51.5	43.5	17.6	10.4
1991	53.3	44.2	18.2	10.9
1992	54.2	44.5	18.9	11.1
1993	55.9	45.2	19.0	10.7
1994	57.4	46.8	19.7	11.2
1995	58.9	47.6	20.8	11.9
1996	59.2	47.3	21.7	12.2
1997	62.4	46.1	26.0	12.7
1998	64.3	46.2	28.6	13.8
1999	67.2	46.3	30.7	15.8

Table 10. Breastfeeding Rates In-Hospital and at 6 Months from 1965 -1999. Source: Alan S. Ryan, Zhou Wenjun, Andrew Acosta. "Breastfeeding Continues to Increase into the New Millennium," *Pediatrics* 110 (2002): 1108.

⁹⁰ Ryan, "Breastfeeding Continues to Increase Into the New Millennium," 1108.

⁹¹ Ibid.

Breastfeeding rates had their greatest resurgence in the 1990s amongst those least likely to breastfeed in the 1970s and 80s: “women who were black, younger in age, less educated, receiving WIC benefits.”⁹² In fact, in 2001 Hispanic women had an in-hospital breastfeeding rate of 73%, surpassing white women whose in-hospital breastfeeding rates were 69.5%.⁹³

	1999	2000	2001	2002	2003	2004	2005	2006 (provisional ¹)
Early postpartum	68.3±2.9	70.9±1.9	71.6±1.0	71.4±0.9	72.6±0.9	73.1±0.8	74.1±1.0	73.9±1.1
At 6 months	32.6±2.9	34.2±2.0	36.9±1.2	37.6±1.0	39.1±0.9	42.1±0.9	42.9±1.1	43.4±1.3
At 12 months	15.0±2.1	15.7±1.5	18.2±0.9	19.0±0.8	19.6±0.8	21.4±0.8	21.5±0.9	22.7±1.1
Exclusively through 3 months					29.6±1.5	31.5±0.9	32.1±1.0	33.1±1.2
Exclusively through 6 months					10.3±1.0	12.1±0.7	12.3±0.7	13.6±0.9

¹Interviews with caregivers of children born in 2006 will continue through November 2009; final estimates for children born in 2006 will be available in August 2010. See [survey methods](#) for details on study design.

Table 11. Breastfeeding Rates from 1999 to 2006. Source: Center for Disease Control "Breastfeeding among U.S. Children Born 1999-2006," Center for Disease Control http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm.

The number of children being breastfed from early postpartum to the age of 12 months also continued to increase into the new millennium. Table 11 shows the number of children who were being breastfed between the years 1999 and 2006 as reported by the National Immunization Survey. According to the survey, which is summarized by the Center for Disease Control and Prevention (CDC), the number of women breastfeeding shortly after childbirth climbed from 70.9% of women surveyed in 2000 to 73.9% in 2006.⁹⁴ In 2006, the CDC reported that nationally 73.9% of newborns were breastfed early postpartum.⁹⁵ Also on the rise were the rates of women continuing to breastfeed after the early post-partum period, which was usually considered to be about 3 months. According to Table 10, 18.2% of women in 1991 were still breastfeeding at 6 months and by 2006 that number jumped up to 43.4%. Table 10 and 11 also show that in 1991 the

⁹² Ryan, et al., “Breastfeeding Continues to Increase Into the New Millennium,” 1104.

⁹³ Ibid., 1105.

⁹⁴ Center for Disease Control and Prevention, "Breastfeeding among U.S. Children Born 1999-2006." Center for Disease Control and Prevention http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm.

⁹⁵ Ibid.

rates of women breastfeeding at 12 months post-partum were 15% and then jumped to 22.7% in 2006.

In the 2009 Breastfeeding Report Card, the CDC reported that breastfeeding rates may have plateaued considering that breastfeeding rates for 2009 are the same for 2006.⁹⁶ According to Table 12, in 2009, 43.4% of women were breastfeeding their infants at 6 months postpartum and 22.7% were breastfeeding at 12 months post partum. Table 12 also shows that the 2009 rates for exclusively breastfeeding at three and six months postpartum are the same as the 2006 rates in Table 11.

State	Ever Breastfed	Breastfeeding at 6 months	Breastfeeding at 12 months	Exclusive breastfeeding at 3 months	Exclusive breastfeeding at 6 months
U.S. National	73.9	43.4	22.7	33.1	13.6

Table 12. U.S. Breastfeeding Rates for 2009. Source: Center for Disease Control and Prevention. "Breastfeeding Report Card - United States, 2009." 1-4: Department of Health and Human Services, 2009.

In this last chapter, I examine influences that played a part in the resurgence in breastfeeding rates from the 1990s to the present day: changes in the hospital environment, as well as enhancements in infant feeding technologies, and the situation for working women.

In the early 1990s researchers and pediatricians were still concluding that maternity hospital practices had a profound effect on the duration of breastfeeding.^{97, 98} Rooming in, instant mother and baby contact following childbirth, and an in-hospital support system for breastfeeding were still recommended by researchers to increase breastfeeding rates of newborns after hospital discharge.

In 1991 the World Health Organization in conjunction with UNICEF began the Baby-Friendly Hospital Initiative (BFHI) to provide hospitals a program to increase

⁹⁶ Center for Disease Control and Prevention, "Breastfeeding Report Card - United States, 2009." 1-4: Department of Health and Human Services, 2009.

⁹⁷ Anne Wright, Sydney Rice, Susan Wells, "Changing Hospital Practices to Increase the Duration of Breastfeeding," *Pediatrics* 97, no. 5 (1996):669-675.

⁹⁸ NG Powers, AJ Naylor, RA Wester, "Hospital Policies: crucial to breastfeeding success," *Seminars in Perinatology* 18(1994):517-524.

breastfeeding in hospitals. They advocated the following guidelines known as the “Ten Steps to Successful Breastfeeding for Hospitals”⁹⁹:

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 half an hour of birth.
5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breast milk, unless medically indicated.
7. Practise rooming-in - that is, allow mothers and infants to remain together - 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

If a hospital meets all tens steps, when inspected by the World Health Organization and UNICEF, then that hospital is awarded Baby-Friendly status.

A study published in 2001 examined the breastfeeding initiation rates of the Boston Medical Center from before 1995, after 1998 and then after the Baby-Friendly Hospital Initiative was implemented in 1999.¹⁰⁰ The goal of the study was to compare breastfeeding rates before and after the implementation of the BFHI in order to see whether the initiative impacted breastfeeding rates in the Boston hospital. Even more important was the fact that the Boston Medical Center was an inner-city hospital that provided care mostly to minorities and the poor, the very population for whom national breastfeeding rates are the lowest. The results of the study showed that the breastfeeding rates in the hospital after full implementation of the ten steps of the BFHI “was an

⁹⁹ Baby-Friendly Hospital Initiative USA, “The Ten Steps to Successful Breastfeeding,” UNICEF and WHO, <http://www.babyfriendlyusa.org/eng/10steps.html>

¹⁰⁰ Barbara L. Phillip et al., “Baby-Friendly Hospital Initiative Improves Breastfeeding Initiation Rates in a US Hospital Setting,” *Pediatrics* 108, no.3(2001):677-688.

effective strategy to increase breastfeeding initiation rates in the US Hospital setting.”¹⁰¹ According to the report, overall rates for breastfeeding initiation increased from 58% in 1995 to 86.5% in 1999.¹⁰² The initiation rates for African-American mothers that were surveyed increased from 34% in 1995 to 74% in 1999 following the implementation of the Baby-Friendly Hospital Initiative program.¹⁰³ According to the study, “significantly more US-born black initiated breastfeeding once the Ten Steps to Successful Breastfeeding were in place.”¹⁰⁴

One new practice being implemented in hospitals across the U.S. beginning in the 1990s was the employment of certified, licensed lactation consultants. In 1985 sixty experts in the field of health care came together in Washington D.C. and “developed standards out of which the competencies and scope of practice for lactation consultants” would be implemented.¹⁰⁵ Lactation consultants affiliated with the La Leche League were indeed being used by hospitals as a means of hospital support prior to 1985. At that time, however, there was no certification and regulation to the title. Essentially anyone voicing knowledge about breastfeeding or holding membership in the La Leche League could claim to be a Lactation Consultant. Thus, the International Board of Lactation Consultant Examiners (IBLCE) was created and accredited by the National Commission of Certifying Agencies in 1988 in order to provide a more formal authority to the title of Lactation Consultant.¹⁰⁶

As a result, IBLCEs were commonly being used in hospitals beginning in the 1990s as a way to provide a new mother breastfeeding support from a person whose entire role in the hospital was devoted to breastfeeding education. One article studying the history and effect of using lactation consultants in hospitals argued that discomfort and lack of knowledge about breastfeeding coupled with cultural barriers that still hold

¹⁰¹ Phillip et al., 677.

¹⁰² Ibid.

¹⁰³ Ibid.

¹⁰⁴ Ibid, 679.

¹⁰⁵ International Board of Lactation Consultant Examiners, “IBLCE in Americas: History,” <http://www.iblce.org/history.php?region=am>

¹⁰⁶ International Board of Lactation Consultant Examiners, “IBLCE Milestones,” <http://www.iblce.org/our-history>

bottle feeding as the norm and breastfeeding as taboo are the latest barriers to breastfeeding.¹⁰⁷ “Moreover,” the authors argue, “misinformation from health care providers and minimal discussion about the process and benefits of breastfeeding compared with formula feeding contribute to low breastfeeding rates and increase maternal frustration and confusion regarding breastfeeding.”¹⁰⁸

Several studies have been done to test the impact of Lactation Consultants on the duration of breastfeeding for new mothers.^{109, 110, 111} All generally conclude the need for future research with different control groups based on race and income but also conclude that, in sum, the support of lactation consultants in-hospital and after a mother is discharged has positive influences on breastfeeding rates.¹¹²

One technological advance that may have played a role in the increase of breastfeeding rates in the 1990s and 2000s was the invention of the first portable electric breast pump. In 1991, the company Medela, created the first electric breast pump that could be used by mothers outside of the hospital.¹¹³ Prior to the invention of the Medela Mini Electric, electric pumps only existed as large heavy machines that could be found in hospitals. If a woman wanted to pump her milk then she was restricted to manually expressing her milk via a manual breast pump or by hand. In 1996, Medela introduced the Pump In Style breast pump which became very popular amongst working women since the pump was compartmentalized in a discreet black shoulder bag or backpack and provided storage and cooling for breastmilk as well as the means to transport it. To this

¹⁰⁷ Sara E. Thurman, Patricia J. Allen, "Integrating Lactation Consultants into Primary Health Care Services: Are Lactation Consultants Affecting Breastfeeding Success?," *Pediatric Nursing* 34, no. 5 (2008): 419.

¹⁰⁸ Ibid.

¹⁰⁹ C. Lawlor-Smith, E. McIntyre, J. Bruce, "Effective breastfeeding support in general practice," *Australian Family Physician* 26, no.5 (1997): 573-575, 578-580.

¹¹⁰ P.M. Vari, J. Camburn, S.J. Henly, "Professionally mediated peer support and early breastfeeding success," *Journal of Perinatal Education* 21, no.3 (2005):245-258.

¹¹¹ K.A. Bonuck, K. Freeman, M. Trombley, "Randomized controlled trial of a prenatal and postnatal lactation consultant intervention on infant health care use," *Archives of Pediatrics Adolescent Medicine* 160, no.9 (2006): 953-960.

¹¹² Ibid, 419-425.

¹¹³ Medela, "Medela History," Medela Inc, <http://www.medelabreastfeedingus.com/about-medela>

day the Medela Pump in Style remains a leading contender in the electric breast pump market.

As technology improved and a newborn's suckling was more clearly understood electric breast pumps continue to strive to mimic this effect through the vacuuming effect on the pump. While there are no studies that conclude that the introduction of electric breast pumps resulted in increased breastfeeding rates amongst women in the 1990s until the present, recent articles do credit portable breast pumps with enhancing the availability of breastmilk for both employed and unemployed mothers.¹¹⁴

The creation of the electric breastpump has been studied to show that its' invention has had a positive effect on breastfeeding rates amongst working mothers.¹¹⁵ Before the invention of the electrical breastpump working mothers who wanted to breastfeed had to either manually express the milk out themselves or use a manual pump to suction the milk out during work hours. The manual expression of milk was an often time consuming and laborious process that could rarely be completed within 15 to 20 minutes. However, with the advent of the electrical portable breast pump and eventually electrical breast pumps that had the capability to pump milk from both breasts at the same time, the time needed to pump breastmilk at work could indeed be accomplished during a 15 to 20 minute break.

As in previous decades, women continued to gain a strong foothold in the labor market in the 1990s and continued to do so in the 2000s. In 1990, women comprised 57.5% of the labor force participation rate in the United States.¹¹⁶ The number of women returning to work following childbirth also continued to rise. According to the U.S. Department of Labor, in 2005 "More than half of women in the United States who have a child less than 1-year old work outside the home, and about 60% of employed mothers

¹¹⁴ Jill Lepore, "Baby Food".

¹¹⁵ Ibid.

¹¹⁶ Susan B. Carter, Matthew Sobek, "New Statistics on the U.S. Labor Force, 1850 – 1990," *Historical Methods* 34, no. 2001 (2001).

with a child younger than 3 years old are employed full time.”^{117,118} According to the U.S. Census Bureau between 1991 and 1994, 60.1% of the women surveyed returned to work 12 months after childbirth (Table 13). That number jumped to 63.7% of the women surveyed between the years 2000 and 2002.¹¹⁹ The increase in the number of first-time mothers returning to work following the birth of their first child was not just seen in the twelve month periods between 1990 and 2002. Table 13 also shows an increase in the numbers of women returning to work after three and six months post-partum. From 1991 to 1994, 40.8% of women surveyed were working after 3 months post-partum. During 2000 to 2002, that number rose to 42.4%. The percentage of women returning to work after 6 months post-partum rose from 52.3% during the period between 1991 to 1994 to 55% during the period between 2000 to 2002.

Characteristic	1961– 1965	1966– 1970	1971– 1975	1976– 1980	1981– 1984	1985– 1990	1991– 1994	1996– 1999	2000– 2002
Women With a First Birth									
Number of women (thousands) ..	6,306	6,956	6,920	7,192	6,671	8,568	6,995	6,918	5,077
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cumulative percent working after:									
3 months	9.9	12.7	15.6	22.4	32.9	41.6	40.8	44.7	42.4
6 months	13.7	18.3	21.9	32.2	43.5	52.9	52.3	57.2	55.0
12 months	16.8	23.9	27.9	38.8	52.5	60.8	60.1	64.6	63.7

Table 13. Women Working at Monthly Intervals After First Birth: 1961 – 2002. Source: Tallese D. Johnson. "Maternity Leave and Employment Patters on First-Time Mothers: 1961-2003," edited by U.S. Census Bureau: U.S. Department of Commerce, 2008.

As was the case in the 1980s, research showed in the 1990s and 2000s that the decision to breastfeed was still the same for working mothers and stay at home mothers following childbirth.^{120,121} Where breastfeeding rates differed between working mothers and stay-at-home mothers was in the duration of breastfeeding. According to a 2003

¹¹⁷ Marina L. Johnston and Noreen Esposito, "Barriers and Facilitators for Breastfeeding among Working Women in the United States," *Journal of Obstetric, Gynecologic, & Neonatal Nursing* 36, no. 1 (2007): 11.

¹¹⁸ U.S. Department of Labor, "News: Employment Characteristics of Families in 2005," Washington D.C. April 27th, 2006.

¹¹⁹ Tallese D. Johnson, "Maternity Leave and Employment Patters on First-Time Mothers: 1961-2003," edited by U.S. Census Bureau: U.S. Department of Commerce, 2008.

¹²⁰ Laura D. Lindberg, "Women's Decisions About Breastfeeding and Maternal Employment" *Journal of Marriage and Family* 58 (1996): 239-51.

¹²¹ Ross Products Division, Abbott Laboratories, "2002 Breastfeeding Trends Report," Abbott Laboratories, <http://www.ross.com/aboutRoss/mediaResources.asp>

report that surveyed breastfeeding trends the continuation rates for breastfeeding by working mothers were 9% less at 6 months than for stay at home mothers.¹²² Women who returned to work were also “more likely to stop breastfeeding in the month they entered employment.”¹²³ Furthermore, research showed that women who were employed part-time “are likely to breastfeed and for longer durations than women employed full-time.”¹²⁴ This statistic suggests that the amount of hours a mother works also plays a role in breastfeeding rates amongst working women and not necessarily the return to work alone. This statistic also opens up the need for further research into the environmental factors that promote or inhibit a working mother’s decision to continue to breastfeed after returning to work.

Based on this evidence and considering the increased number of women returning to work within one year of childbirth (Table 13) one would expect that breastfeeding rates would have declined in the 1990s and 2000s. Yet, as Tables 10 and 11 clearly show, national breastfeeding rates for infants at three, six, and twelve months continue to rise.

Legislation that addresses the needs of pregnant women and mothers in the 1990s and 2000s perhaps explain why the increase of mothers with infants in the work force has not decreased national breastfeeding rates. For example, the Family Medical Leave Act (FMLA) of 1993 allows eligible employees up to 12 weeks of unpaid leave for qualifying medical reasons such as childbirth and to care for a newborn.¹²⁵ One study showed that the longer a mother is on maternity leave, the longer she is more likely to balance breastfeeding with work after she returns to work.¹²⁶ Since research has shown that “Delaying the return to work is positively associated with breastfeeding duration” the

¹²² Ibid.

¹²³ Laura D. Lindberg, 239.

¹²⁴ Ibid.

¹²⁵ U.S. Department of Labor, "Family and Medical and Leave Act," U.S. Department of Labor, <http://www.dol.gov/whd/fmla/index.htm>

¹²⁶ C. Arthur, et al., "The Employment-Related Breastfeeding Decisions of Physician Mothers." *Journal of Mississippi State Medical Association* 44 (2003): 383-87.

FMLA can be seen as one possible influence on the likelihood that mothers returning to work would breastfeed longer.¹²⁷

Most recently, the Patient Protection and Affordable Care Act mandates break time and space for breastfeeding mothers to pump their milk. Aimed to provide assistance especially to those mothers who are hourly employees not accustomed to lactation rooms and private office space or time to pump their breastmilk, Section 4207 of the act states, “employers shall provide breastfeeding employees with ‘responsible break time’ and a private, non-bathroom place to express milk during the work day, up until the child’s first birthday.”¹²⁸ Whereas 24 states already provided similar protections for working mothers who are breastfeeding, this legislation makes such accommodations a federal mandate. Though the Patient Protection and Affordable Act, also known as Health Care Reform, was only recently signed in March 2010 there is no evidence on how this mandate will affect nationwide breastfeeding rates. However, I hypothesize that because of this new law the rates of breastfeeding amongst hourly employees will increase since several studies have shown that when mothers “did not have breastfeeding or pumping stations at work, they resorted to pumping in the restroom, an approach associated with premature weaning.”¹²⁹

While breastfeeding rates have climbed dramatically since 1991, rates have plateaued for the past 4 years according to the CDCs Breastfeeding Report Card for 2009. Research has yet to explain this new phenomenon. What can be deduced, however, is how the interplay of hospital practices, technology and working women’s environment, once negative influences on breastfeeding rates in the first half of the 20th century has improved rates from the 1990s to present day.

¹²⁷ S. Guendelman et al., "Juggling Work and Breastfeeding: Effects of Maternity Leave and Occupational Characteristics," *Pediatrics* 123, no. 1 (2009): e38-e46.

¹²⁸ United States Breastfeeding Committee, “Health Care Reform Boosts Support for Employed Breastfeeding Mothers,” United States Breastfeeding Committee, <http://www.usbreastfeeding.org/Workplace/WorkplaceSupport/WorkplaceSupportinHealthCareReform/tabid/175/Default.aspx>

¹²⁹ M. Johnston, N. Esposito, 17.

Conclusions

Even though several studies examining breastfeeding trends from 1948 to the present day have focused on different segments of the American population, one can conclude that, beginning in the early 20th century, breastfeeding rates experienced a gradual decline only then to dramatically rise in the 1970s. Rates then declined again in the 1980s and experienced another resurgence beginning in the early 1990s and continuing to 2006 (Figure 9).

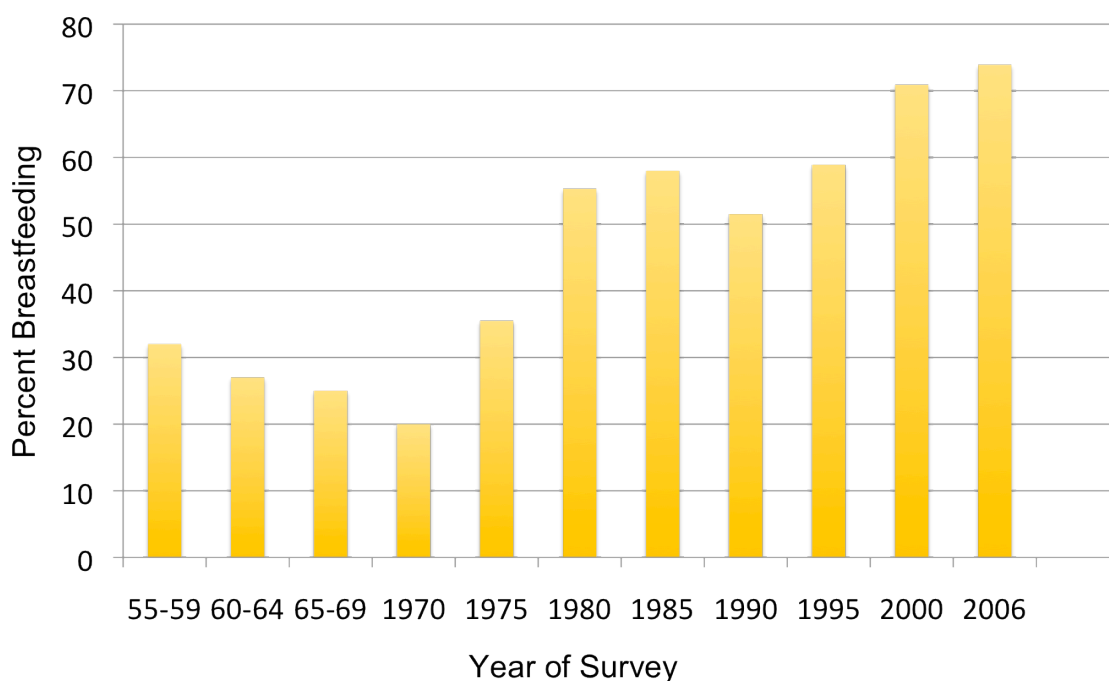


Figure 9. Breastfeeding Rates from 1955 to 2006. Source of data: Katherine Bain. "The Incidence of Breast Feeding in Hospitals in the United States," *Pediatrics* 2 (1948): 313-20. Alan S. Ryan, Zhou Wenjun, Andrew Acosta. "Breastfeeding Continues to Increase into the New Millennium." *Pediatrics* 110 (2002): 1103-09. Control, Center for Disease. "Breastfeeding among U.S. Children Born 1999-2006." Center for Disease Control http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm.

This report has examined how the medical establishment's control of childbirth, hospital experiences following childbirth, advances in technology and increasing rates of women in the workforce have affected breastfeeding rates since the first part of the 20th century to the beginning of the 21st century.

While the American Academy of Pediatrics has always recommended breastmilk is the best milk for infants, it wasn't until the 1970s that it began publishing this recommendation in form of a policy report that was meant to be a guideline for infant feeding to pediatricians.¹³⁰ This policy report continues to be updated with the latest scientific research on the immediate and long-term benefits of breastfeeding for both mother and child.¹³¹ Included in the APA's most recent breastfeeding policy is a list of methods health care professionals and pediatricians should practice to increase the rate of breastfeeding in hospitals. On this list are the recommendations to "promote breastfeeding as the cultural norm...provide age-appropriate breastfeeding education to children...work actively toward eliminating hospital policies and practices that discourage breastfeeding," as well as encouraging "the media to portray breastfeeding as positive and normative."¹³² Whereas physicians once promoted rigid schedules and the separation of mother and infant immediately after childbirth, now the APA recommends feeding infants on demand and that mother and child rarely be separated following childbirth. It's not just the APA that promotes breastfeeding policies and practices amongst the medical community. The American College of Obstetricians and Gynecologists¹³³, the American Academy of Family Physicians¹³⁴, and The US Department of Health and Human Services¹³⁵ have all published guidance for physicians and hospitals on how to promote breastfeeding.

Marketing and technological innovations, once an inhibitor to breastfeeding may also now be just as much responsible for the increase of breastfeeding rates as it was for the decline. Infant formula companies continue to improve on their advertising but now

¹³⁰ American Academy of Pediatrics, "Workgroup on Breastfeeding and the Use of Human Milk," *Pediatrics* 100 (1997): 1035-39.

¹³¹ American Academy of Pediatrics, "Breastfeeding and the Use of Human Milk," 496-506.

¹³² *Ibid.*, 500-501.

¹³³ American College of Obstetricians and Gynecology, "Breastfeeding: Maternal and Infant Aspects," In *ACOG Educational Bulletin Number 258*. Washington D.C.: American College of Obstetricians and Gynecologists, 2000.

¹³⁴ American Academy of Family Physicians, *AAFP Policy Statement on Breastfeeding*, Leawood, KS: American Academy of Family Physicians, 2001.

¹³⁵ US Department of Health and Human Services, *HHS Blueprint for Action on Breastfeeding in the United States: A National Agenda*. Washington D.C.: US Department of Health and Human Services, Office on Women's Health, 2000.

include statements in their commercials and on their websites reminding consumers that “breastfeeding is best for babies.”¹³⁶ In 2004 the Office of Women’s Health, a subsidiary of the US Department of Health and Human Services, started a public health campaign to promote breastfeeding that included controversial commercials equating the decision to not breastfeed with unnecessary risk taking. Two commercials showing pregnant women partaking in activities such as bull riding and a log rolling competition, end with the narrative, “You wouldn’t take risks before your baby’s born. Why start after?”¹³⁷ Plastic remains the material of choice for baby bottles considering they are cheaper than glass and are made in a variety of designs marketed to mimic a mother’s breast. Some bottles are even advertised as being able to prevent colic due to their unique design. But while technology has improved the efficiency and ease of the bottle, technology has also changed the way mothers could give their infants breast milk via the bottle. Portable breast pumps have given women, especially working women, the mobility and opportunity to give their children human milk, often through the means of a bottle filled with previously pumped breast milk, in situations in which previously they could not. Women and children who may have otherwise been unable to physically breastfeed or receive breast milk are able to because of the breast pump (i.e., premature infants in a NICU).

Even though the breastfeeding rates of working mothers are lower than stay-at-home mothers, women returning to work in greater numbers do not seem to have as much of an impact on current breastfeeding rates as it did in the first part of the 1900s. Changes in technology, improvements in the workplace that make it easier to breastfeed as well as the introduction of legislation protecting women’s right to work and to have medical leave following childbirth may have all played a role in the increasing rates working women who breastfeed.

¹³⁶ Nestle, "Infant Marketing," Nestle Co. <http://www.nestle.com/SharedValueCSR/ProductsAndConsumers/InfantHealthAndNutrition/Infant+formula+marketing.htm>

¹³⁷ Roni Rabin, “Breast-Feed or Else,” *The New York Times*, June 13, 2006, <http://www.nytimes.com/2006/06/13/health/13brea.html>

In conclusion, the examination of breastfeeding trends is complex considering that the decision to either breast or bottle-feed is itself complicated. In addition to the factors that I have discussed in this report the influence of culture, race, income and the market also play a role in breastfeeding trends. When it comes to breastfeeding, mothers today, as in the past, often have to balance the recommendations of their pediatricians with the responsibilities of work, family and lifestyle, thus making the decision to breastfeed or bottle-feed multi-faceted.

Bibliography

- Altergott, Marjorie. "Artificial Infant Feeding: Women's Loss, Men's Gain." *Issues in Reproductive and Genetic Engineering* 4, no. 2 (1991): 93-107.
- American Academy of Pediatrics. "Breast-Feeding: Nutrition Committee of the Canadian Paediatric Society and the Committee on Nutrition of the American Academy of Pediatrics." *Pediatrics* (1978): 591-601.
- American Academy of Pediatrics. "The Promotion of Breast-Feeding: Policy Statement Based on Task Force Report." *Pediatrics* 69 (1982): 654-61.
- American Academy of Pediatrics. "Workgroup on Breastfeeding and the Use of Human Milk." *Pediatrics* 100 (1997): 1035-39.
- American Academy of Pediatrics. "Breastfeeding and the Use of Human Milk." *Pediatrics* 115 (2005): 496-506.
- American College of Obstetricians and Gynecology. "Breastfeeding: Maternal and Infant Aspects." In *ACOG Educational Bulletin Number 258*. Washington D.C.: American College of Obstetricians and Gynecologists, 2000.
- Apple, Rima D. *Mothers and Medicine: A Social History of Infant Feeding, 1890-1950*. Madison: The University of Wisconsin-Madison, 1987.
- Arango, Joyce O. "Promoting Breast Feeding: A National Perspective." *Public Health Reports* 99, no. 9 (1984): 559-65.
- Arthur, C., Saenz, R.B., Replogle, W.H. "The Employment-Related Breastfeeding Decisions of Physician Mothers." *Journal of Mississippi State Medical Association* 44 (2003): 383-87.
- Baby-Friendly Hospital Initiative USA, "The Ten Steps to Successful Breastfeeding." UNICEF and WHO, <http://www.babyfriendlyusa.org/eng/10steps.html>
- Baer, Edward C., "Promoting Breastfeeding: A National Responsibility." *Studies in Family Planning* 12 (Apr 1981): 198-206.
- Bain, Katherine. "The Incidence of Breast Feeding in Hospitals in the United States." *Pediatrics* 2 (1948): 313-20.

- Barber-Madden, R., Petschek, M.A., Pakter, J. "Breastfeeding and the Working Mother: Barriers and Intervention Strategies." *Journal of Public Health Policy* 8, no. 4 (Winter 1987): 531-41.
- Barness, L.A., et al. "Commentary on Breast-Feeding and Infant Formulas, Including Proposed Standards for Formulas." *Pediatrics* 57 (1976): 278-85.
- Barness, L.A., et al. "Encouraging Breast-Feeding." *Pediatrics* 65 (1980): 657-58.
- Bonuck, K.A., Freeman, K., Trombley, M. "Randomized controlled trial of a prenatal and postnatal lactation consultant intervention on infant health care use." *Archives of Pediatrics Adolescent Medicine* 160, no.9 (2006): 953-960.
- Carter, S.B., Sobek, M. "New Statistics on the U.S. Labor Force, 1850 - 1990." *Historical Methods* 34, no. 2001 (2001).
- Center For Disease Control and Prevention. "Trends in Length of Stay for Hospital Deliveries-United States, 1970-1992." *MMR Weekly*, May 2001.
- Center for Disease Control and Prevention. "Breastfeeding among U.S. Children Born 1999-2006." Center for Disease Control and Prevention, http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm.
- Center for Disease Control and Prevention. "Breastfeeding Report Card - United States, 2009." 1-4: Department of Health and Human Services, 2009.
- Christrup, Shana M. "Breastfeeding in the American Workplace." *Journal of Gender, Social Policy, & The Law* 9, no. 3 (2001): 471-503.
- Clay, Augusta S. "Guidance in Maternal and Infant Care Two Months before and after the Birth of the First-Born." *Pediatrics* 2 (1948): 203-25
- Clifford, S.H., et al. "Panel Discussion: A Program to Develop and Improve Facilities for the Care of Newborn Infants Full Term and Premature." *Pediatrics* 2 (1948): 97-118.
- Demy, Nicholas G. "Breast Feeding: Dr. Bates." *Pediatrics* 29 (1962): 1030-31.
- Dungy, C.I., Christensen-Szalanski, J., Losch, M., Russell, D. "Effect of Discharge Samples on Duration of Breast-Feeding." *Pediatrics* 90, no. 2 (1992): 233-37.
- Eckhardt, K.W., Hendershot, G.E. "Analysis of Reversal in Breast Feeding Trends in the Early 1970s." *Public Health Reports* 99, no. 4 (Jul-Aug 1984): 410-15.

- Esterik, P.V, Greiner, T. "Breastfeeding and Women's Work: Constraints and Opportunities." *Studies in Family Planning* 12, no. 4 (1981): 184-97.
- Federal Department of Agriculture, "Food Advisory Committee on Infant Formula: Overview." Federal Department of Agriculture,
http://www.fda.gov/ohrms/dockets/ac/02/briefing/3852b1_01.htm.
- Fomon, Samuel J. "Reflections on Infant Feeding in the 1970s and 1980s." *American Journal of Clinical Nutrition* 46 (1987): 171-82.
- Frank, D.A., Wirtz, S.J., Sorenson, J.R., Heeren, T. "Commercial Discharge Packs and Breast Feeding Counseling: Effects on Infant-Feeding Practices in a Randomized Trial." *Pediatrics* 80, no. 6 (1987): 845-54.
- Guendelman, S., Kosa, J., Pearl, M., Graham, S., Goodman, J., Kharrazi, M. "Juggling Work and Breastfeeding: Effects of Maternity Leave and Occupational Characteristics." *Pediatrics* 123, no. 1 (2009): e38-e46.
- Hales, Deborah Jean. "Promoting Breastfeeding Strategies for Changing Hospital Policy." *Studies in Family Planning* 12, no. 4 (1981): 167-72.
- Hediger, M.L., Overpeck, M.D., Kuczmarski, R.J., Ruan, W.J. "Association between Infant Breastfeeding and Overweight in Young Children." *Journal of the American Medical Association* 285, no. 19 (2001): 2453-60.
- Hendershot, Gerry E. "Trends in Breast-Feeding." *Pediatrics* 74, no. 4 (1984): 591-602.
- Hirschman, Charles. "Trends in Breast Feeding among American Mothers." edited by United States Office of the Assistant Secretary for Health. Hyatsville, MD: U.S Department of Health, Education, and Welfare, 1979.
- Hirshman, C., Butler M. "Trends and Differentials in Breast Feeding: An Update." *Demography* 18, no. 1 (Feb 1981): 39-54.
- Hunt, Vilma R. "Reproduction and Work." *Signs* 1, no. 2 (1975): 543-52. 26
- International Board of Lactation Consultant Examiners. "IBLCE in Americas: History."
<http://www.iblce.org/history.php?region=am>
- International Board of Lactation Consultant Examiners. "IBLCE Milestones."
<http://www.iblce.org/our-history>

- Jackson, E.B., Wilkin, L.C., Auerback, H. "Statistical Report on Incidence and Duration of Breast Feeding in Relation to Personal-Social and Hospital Maternity Factors." *Pediatrics* 17 (1956): 700-15.
- Jelliffe, D.B., Jelliffe, P.E.F. "Recent Trends in Infant Feeding." *Annual Review of Public Health* 2 (1981): 148-58.
- Johnson, Tallese D. "Maternity Leave and Employment Patters on First-Time Mothers: 1961-2003." edited by U.S. Census Bureau: U.S. Department of Commerce, 2008.
- Johnston, M.L., Esposito, N. "Barriers and Facilitators for Breastfeeding among Working Women in the United States." *Journal of Obstetric, Gynecologic, & Neonatal Nursing* 36, no. 1 (2007): 9-20.
- Kemberling, Sidney R. "Supporting Breast-Feeding." *Pediatrics* 63, no.1 (1979): 60-63.
- La Leche League International. *The Womanly Art of Breastfeeding*. Chapel Hill: The University of North Carolina Press, 2000.
- Lawlor-Smith, C., McIntyre, E., Bruce, J. "Effective breastfeeding support in general practice." *Australian Family Physician* 26, no.5 (1997): 573-575, 578-580.
- Lepore, Jill. "Baby Food." *The New Yorker*, Jan 19 2009.
- Li, R. Fein, S.B., Chen, J., Grummer-Stawn, L.M. "Why Mothers Stop Breastfeeding: Mothers' Self-Reported Reasons for Stopping During the First Year." *Pediatrics* 122 (2008): S69-S76.
- Lindberg, Laura Duberstein. "Women's Decisions About Breastfeeding and Maternal Employment." *Journal of Marriage and Family* 58, no. 1 (Feb 1996): 239-51.
- Livenstein, Harvey "'Best for Babies or 'Preventable Infanticide'? The Controversy over Artificial Feeding of Infants in America, 1880-1920." *The Journal of American History* 70 (Jun 1983): 75-94.
- Magnus, Peter D. "Benefits of Breast Milk." *Pediatrics* 65, no 1. (1980): 192-93.
- Medela. "Medela History." Medela Inc, <http://www.medelabreastfeedingus.com/about-medela>

- Menaghan, E.G., Parecel, T.L. "Parental Employment and Family Life: Research in the 1980s." *Journal of Marriage and Family* 52, no. 4 (1990): 1079-98.
- Meyer, Herman F. "Infant Feeding Practices in Hospitals Maternity Nurseries: A Survey of 1,904 Hospitals Involving 2,225,000 Newborn Infants." *Pediatrics* 21 (1958): 288-297.
- Nerlove, Sara B. "Women's Workload and Infant Feeding Practices: A Relationship with Demographic Implications." *Ethnology* 13, no. 2 (1974): 207-13.
- Nestle. "Infant Marketing," Nestle Co. <http://www.nestle.com/SharedValueCSR/ProductsAndConsumers/InfantHealthAndNutrition/Infant+formula+marketing.htm>
- Phillip, B.L., Merewood, A., Miller, L.W., Chawla, N., Murphy-Smith, M.M., Gomes, J.S., Cimo, S., and Cook, J.T.. "Baby-Friendly Hospital Initiative Improves Breastfeeding Initiation Rates in U.S. Hospital Setting." *Pediatrics* 108 (2001): 677-81.
- Powers, N.J., Naylor, A.J., Wester, R.A. "Hospital Policies: crucial to breastfeeding success." *Seminars in Perinatology* 18(1994): 517-524.
- Roni Rabin, "Breast-Feed or Else." *The New York Times*, June 13, 2006, <http://www.nytimes.com/2006/06/13/health/13brea.html>
- Reiff, M.I., Essock-Vitale, S.M. "Hospital Influences on Early Infant-Feeding Practices." *Pediatrics* 76, no. 6 (1985): 872-79.
- Ross Products Division, Abbott Laboratories. "2002 Breastfeeding Trends Report." Abbott Laboratories, <http://www.ross.com/aboutRoss/mediaResources.asp>
- Ryan, Alan S. "The Resurgence of Breastfeeding in the United States." *Pediatrics* 99, no. 12 (1997): 1-5.
- Ryan, Alan S. "Breast-Feeding and the Working Mother: A Profile." *Pediatrics* 83, no. 4 (1989): 524-31.
- Ryan, A.S., Friz, D.R., Krieger, W., and Lewandowski, G. "Recent Declines in Breast-Feeding in the United States, 1984 through 1989." *Pediatrics* 88, no. 4 (1991): 719-27.
- Ryan, A.S., Wenjun, Z., Acosta, A. "Breastfeeding Continues to Increase into the New Millennium." *Pediatrics* 110 (2002): 1103-09.

- Salmon, Marylynn. "The Cultural Significance of Breastfeeding and Infant Care in Early Modern England and America." *Journal of Social History* 28, no. 2 (Winter 1994): 247-69.
- Sarto, J.S., O'Keefe, M. "Breast Feeding." *The American Journal of Nursing* 63, no. 12 (Dec 1963): 58-60.
- Sobek, Matthew "New Statistics on the U.S. Labor Force, 1850-1990." *Historical Methods* 34 (2001): 71-87.
- Starbird, Ellen H. "Comparison of Influences on Breastfeeding Initiation of Firstborn Children." *Society of Science Medicine* 33, no. 5 (1991): 627-34.
- The Science News-Letter. "New Plastic Nursery Aid Eases Feeding of Babies." October 30th, 1948.
- Thulier, Diane. "Breastfeeding in America: A History of Influencing Factors." *Journal of Human Lactation* 25, no. 1 (2009): 85-94.
- Thurman, S.E., Allen, P.J. "Integrating Lactation Consultants into Primary Health Care Services: Are Lactation Consultants Affecting Breastfeeding Success?" *Pediatric Nursing* 34, no. 5 (2008): 419-25.
- United States Breastfeeding Committee. "Health Care Reform Boosts Support for Employed Breastfeeding Mothers." United States Breastfeeding Committee, <http://www.usbreastfeeding.org/Workplace/WorkplaceSupport/WorkplaceSupport-nHealthCareReform/tabid/175/Default.aspx>
- US Department of Health and Human Services. *HHS Blueprint for Action on Breastfeeding in the United States: A National Agenda*. Washington D.C.: US Department of Health and Human Services, Office on Women's Health, 2000.
- U.S. Department of Labor. "Family and Medical and Leave Act." U.S. Department of Labor, <http://www.dol.gov/whd/fmla/index.htm>
- U.S. Department of Labor. "News: Employment Characteristics of Families in 2005." Washington D.C. April 27th, 2006.
- U.S. Government Accountability Office. "Breastfeeding: Some Strategies Used to Market Infant Formula May Discourage Breastfeeding." Washington, D.C. February 2006.

- U.S. Office of the Assistant Secretary for Health. "Trends in Breast Feeding among American Mothers: Findings from the National Survey of Family Growth, United States, 1973." edited by Education U.S. Department of Health, and Welfare. Washington, D.C.: U.S. Government Printing Office, 1979.
- U.S. Women's Bureau. "Married Women in Industry." *Bulletin of the Women's Bureau* 36-46. edited by U.S. Department of Labor. Washington, D.C.: Government Printing Office, No. 38 1924.
- U.S. Women's Bureau. "Family Status of Breadwinning Women in Four Selected Cities." *Bulletin of the Women's Bureau* 36-46. edited by U.S. Department of Labor. Washington, D.C.: Government Printing Office, 1925.
- U.S. Women's Bureau. "Radio Talks On Women in Industry." *Bulletin of the Women's Bureau* 36-46. edited by U.S. Department of Labor. Washington, D.C.: Government Printing Office, No 36, 1924.
- Van Ingen, Phillip. "The Education of Mothers ad the Saving of Babies," Read at a meeting of the Academy of Political Science, April 18, 1912.
- Vari, P.M., Camburn, J., Henly, S.J. "Professionally mediated peer support and early breastfeeding success." *Journal of Perinatal Education* 21, no.3 (2005):245-258.
- Waldman, E., Grossman, A.S., Hayghe, H., Johnson, B.L. "Working Mothers in the 1970's: A Look at the Statistics." *Monthly Labor Review* 102, no. 45 (1979): 39- 49.
- Ward, Jule DeJager. *La Leche League: At the Crossroads of Medicine, Feminism, and Religion*. Chapel Hill & London: The University of North Carolina Press, 2000.
- Weichert, Carol E. "Lactational Reflex Recovery in Breast-Feeding Failure." *Pediatrics* 63, no. 5 (1979): 799-803.
- Wolf, Jacqueline H. *Don't Kill Your Baby: Public Health and the Decline of Breastfeeding in the 19th and 20th Centuries*. Columbus: The Ohio State University Press, 2001.
- Wright, A., Rice, S., Wells, S. "Changing Hospital Practices to Increase the Duration of Breastfeeding." *Pediatrics* 97, no. 5 (1996):669-675.

VITA

Starr-Renee Corbin is a native of San Antonio, Texas. After graduating from Seoul American High School, Seoul, South Korea in 1995, she entered the University of Texas at San Antonio. After receiving an Army ROTC scholarship she transferred to Texas Christian University in Fort Worth, Texas in 1998. In May 2000 she graduated from Texas Christian University with a Bachelors in General Studies and also received a commission as a Second Lieutenant in the United States Army Signal Corps. During the following years she was assigned to Fort Hood, Texas with the 13th Signal Battalion, First Cavalry Division and later, in 2005, as a Systems Analyst for the Applied Research Laboratories at the University of Texas at Austin. In September 2005, she entered the Graduate School at The University of Texas at Austin.

Permanent Address: 20104 Turkey Trot Circle
 Georgetown, Texas 78723

This report was typed by the author.