BREASTFEEDING EXPERIENCES OF LOW INCOME WOMEN IN THREE SETTINGS

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ABSTRACT

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The fact that the majority (53%) of infants in the US are born to women living at 185% of poverty or less who participate in the WIC program raises the stakes on any discussion of maternal and infant care for low income women. The importance of breastfeeding for infant development and the prevention of chronic diseases in later life underscores the significance of this opportunity to positively influence the health and wellbeing of a large and growing portion of the US population. However, in the US, low income and minority women are less likely to breastfeed. The papers in this dissertation examine aspects of breastfeeding support that are available for low income women in three different program settings: an urban, Baby Friendly Hospital, a nutrition education program, and a worksite where breastfeeding support policies had just been introduced.

In each setting, the changes made to support breastfeeding had a positive impact. For women delivering at a Baby Friendly Hospital, the supportive policies of the Baby Friendly Hospital Initiative (BFHI) resulted in breastfeeding discharge rate of 73%. Based on interviews, many women would not have initiated breastfeeding, or would have given up before discharge without the assistance of hospital based lactation consultants as required by the BFHI. WIC peer counselors were the only community breastfeeding support reported. A broader system of community supports would be a benefit to low income women delivering in this setting. For women participating in the Expanded Food and Nutrition Education Program (EFNEP), peer

support provided by EFNEP educators at home visits had an impact on breastfeeding duration. Women receiving home visits, on average, doubled the breastfeeding duration goals they had set at enrollment. Lastly, the implementation of employee policies in support of breastfeeding resulted in an increase in the overall breastfeeding rates from pre to post implementation (+9.35%), and an increase in breastfeeding after employees returned to work (+2%). Job position (academic vs hourly) remained a critical factor for women breastfeeding after return to work. Job position and associated privileges such as a private office or autonomy over one's schedule are not easily mitigated.

Given the overwhelming benefits of breastfeeding in providing optimal nutrition for infants, the changes in each program have the potential to contribute to long term health of the infants they serve.

BIOGRAPHICAL SKETCH

Joan received her Bachelors of Science degree from Cornell University. She then spent two years in Peace Corps in the Philippines where she was stationed at a rehabilitation site for malnourished children in Guihulngan, Negros Oriental. At the conclusion of her tour she travelled throughout Southeast Asia. Upon return to the states, she worked as a WIC nutritionist in upstate New York. She returned to school a year later to complete a Master's in Public Health (MPH, RD) from the University of North Carolina at Chapel Hill.

After graduate school she was employed as the State Nutrition Coordinator and then as Assistant Director for the WIC Program in the Commonwealth of Massachusetts. She returned to New York to work as a Regional Nutrition Specialist for the New York State Department of Health, Rochester Regional Office. While in Rochester she became a founding member of the Rochester Regional Breastfeeding Network, a non-profit organization that provided professional development for nurses, dietitians and nutritionists interested in breastfeeding issues. She subsequently worked for the Monroe County Health Department as the Project Coordinator for a CDC funded Fetal Alcohol Syndrome research project.

She moved to Albany to become the State Operations Director, then State WIC Director. Her last position with the NY State Department of Health was Director of the Bureau of Supplemental Food Programs which included oversight of 75 staff across the state, implementing the Commodity Supplement Food Program in addition to the WIC Program. She completed her PhD studies and dissertation while employed full time as the Expanded Food and Nutrition Education Program (EFNEP) Coordinator with Cornell Cooperative Extension at Cornell University.

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LIST OF ABBREVIATIONS

CDC – Centers for Disease Control and Prevention

CLC – Certified Lactation Counselor

C-Section (c sec) – Cesarean Section

BFHI – Baby Friendly Hospital Initiative

BF – Baby Friendly

BMI – Body Mass Index

BFRW –Breastfed after Return to Work

EFNEP- Expanded Food and Nutrition Education Program

WIC – Women, Infants and Children: The Special Supplemental Nutrition Program for Women, Infants and Children

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CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW

Introduction

Never before in the history of science has so much been known about the complex importance of breastfeeding for both mothers and children[1].

Quantifying the scientific importance of breastmilk and breastfeeding is an important first step in the effort to promote, protect and support breastfeeding as the premier infant feeding choice. The complex nature of the breastfeeding *experience* is much more difficult to describe as it is a bio-psycho-social process imbued with a multitude of cultural influences. The decision to breastfeed is not a binary choice between mother's milk and a breastmilk substitute. It is a complex lifestyle choice that affects the life course of the family; when or whether the mother returns to paid employment, how the mother and infant interact and how long they can be separated, and the role of other caretakers and family members. Once breastfeeding is chosen, the mother, as sole provider of infant nourishment, is the person responsible for the baby's survival. Others may change, bathe, play with, and entertain the baby, but the presence of the mother, or her milk, is necessary every two to three hours to satisfy baby's needs for growth and development.

In the contemporary US context, breastfeeding is a phenomenon of middle and upper income women. Family or institutional structures or supports for low income breastfeeding women are much less frequently available. The papers in this dissertation examine aspects of breastfeeding support programs that are available for low income breastfeeding women in three different organizational settings in the US.

Literature review

Breastfeeding is one of the most effective ways to ensure child health and survival[2].

The research evidence demonstrating the unique beneficial properties of breastmilk and breastfeeding as compared to all infant feeding substitutes is indisputable. Infant survival and resistance to illness and disease is markedly improved by breastfeeding exclusively at birth. Breast fed infants have fewer clinic visits during the first year of life[3], fewer reported instances of otitis media[4], upper respiratory and urinary tract infections, atopic diseases and sudden infant death syndrome[5] than alternatively fed infants. Breastfeeding provides a protective effect on incidence of dental caries, and development of obesity and diabetes in later life[6]. Cognitive development and educational achievement is enhanced among breastfed infants[7].

The dramatic protective benefits of exclusive breastfeeding on mortality and morbidity in the third world have generally been attributed to environmental conditions that render bottle feeding unsanitary and unhealthy. However, controlled trials conducted in Europe[8], and the US[9] have been able to demonstrate protective benefits of breastfeeding in reducing gastrointestinal tract infection, atopic eczema, and otitis media in first world settings. The unique protective immunological constituents of breastmilk and the unique benefits of breast feeding are superior to all substitute feeding products regardless of the setting[10].

The evidence demonstrating benefits to women who breastfeed their infants has expanded from short-term return to prenatal weight status[11], to longer-term protection against the development of breast cancer[12], ovarian cancer[13] and osteoporosis[14].

More recently published systematic reviews and meta-analyses exploring the short- and long-term benefits of breastfeeding on both infant and maternal health have clarified and codified our understanding of these benefits[15-18].

If breastfeeding did not already exist, someone who invented it today would deserve a dual Nobel Prize in medicine and economics. For while "breast is best" for lifelong health, it is also excellent economics. Breastfeeding is a child's first inoculation against death, disease, and poverty, but also their most enduring investment in physical, cognitive, and social capacity[19].

Breastfeeding is associated with decreased infant mortality and morbidity requiring fewer doctor and hospital visits, decreased parental absenteeism from work, and decreased social costs. Collectively, health care savings, calculated based on 90% of women breastfeeding as recommended, would amount to $13 billion in the US alone[20].

Breastfeeding has been described as environmentally friendly, requiring no inputs of energy/fossil fuels for manufacture, shipping, storage or preparation. It generates no more waste than what would otherwise be generated in supporting the diet of the mother. There is no cost or expense to parents associated with buying milk substitutes, bottles, and related paraphernalia. The average household savings on formula for a breastfed infant has been estimated at $1200 to $1700 per year[21]. To underscore the importance of this information, some pro-breastfeeding organizations have re-oriented their breastfeeding promotion strategies from the positive benefits of breastfeeding to the negative consequences of not breastfeeding.

There is universal agreement on the benefits of breastfeeding. Both international and domestic policy statements emphasize the nutritional importance of breastfeeding and emphasize exclusive breastfeeding for maximum benefit for mother and baby[22]. Breastfeeding rates among the US population, however, remain below that of other industrialized counties, and the Healthy People 2020 goals[23]. Analysis of breastfeeding trends demonstrate variability by a variety of individual characteristics including: maternal age, education, race/ethnicity, marital status, smoking, time of entry into prenatal care, participation in the Medicaid program, participation in the WIC Program, geographic location and economic status[24].

Among the US population, rates have increased after reaching their lowest point in the early 1970s. Most recent data show promising trends, including achievement of the 2020 breastfeeding initiation goal in 43 states. However, exclusivity and duration benchmarks have not been met. And, the disparity in breastfeeding initiation and duration between high and low income women has not appreciably improved. Low income women are less likely to breastfeed, regardless of race, geographic setting or participation in health care[25].

At present, women more likely to breastfeed can generally be described as: middle and upper income, some education after high school, Hispanic or non-Hispanic white, non-smokers, over 30 years old, and living in the west and northwest. Women least likely to breastfeed can generally be described as: low income, smokers, no post high school education, non-Hispanic black, less than 30 years old, and live in the south[26]. The most recent data indicate lowest breastfeeding rates are among low income women regardless of other characteristics[27].

Breastfeeding may be the biological norm, but in Western culture it is not the social norm. Although intention to breastfeed is high, new mothers emerge into a formula-feeding culture where formula milk appears as the solution to the public harassment, negative attitudes, and lack of support that breastfeeding women face[28].

While seemingly a simple decision about how to feed a newborn, the decision to breastfeed is an immensely complex and emotional choice faced by mothers and their families as they contemplate their lives as parents[29]. Low income women face a number of social, cultural, financial and psychological hurdles that render this decision even more challenging[30]. It is well-documented that barriers to successful breastfeeding include embarrassment, lack of family, peer or other social supports, and lack of timely assistance when problems arise. Economic pressure to return to work in both dual and single parent households, limited family leave benefits, and the requirements of welfare to work, health care provider attitudes, hospital practices and the availability of community supports influence both initiation and duration.

The underlying context of low income is a key barrier to breastfeeding. Breastfeeding initiation rates remain lowest among low income women[31].

Theoretical framework – Social-Ecological model

The Social-Ecological Model contends that the environment has a substantial influence on individuals' decision making and subsequent behavior[32]. Individuals function within systems, impacted by environment and social context. Given that low income women are least likely to breastfeed, and least likely to breastfeed for any appreciable duration, examination of aspects of their experiences relative to aspects of community, work-related, and health care supports must be examined more closely.

Peer counseling has been shown to effectively increase breastfeeding duration among low income women[33]. Longstanding community-based peer support systems such as La Leche League, have a limited history of establishing groups among low income or minority women. Despite a history as a credible and reliable resource for breastfeeding women, there is a notable absence of these groups in low income neighborhoods. Peer counseling programs, such as those funded through the WIC Program, have slowly expanded with increasing emphasis on breastfeeding and funding provided via USDA. WIC peer counselors only provide support to women enrolled in the WIC program.

Limited paid maternity leave, lack of support from family, difficulties finding day care providers are challenges for even the most motivated woman. Pressure to return to work is experienced by women at all economic levels. Early return to work results in early weaning[34]. Worksite wellness policies supportive of breastfeeding, including accommodations for a private pumping room, facilities for milk storage, flexible hours, job sharing and a supportive

atmosphere, have been shown to increase breastfeeding duration[35]. However, the extent to which low wage workers benefit from these policies is not clear.

Health care providers can positively influence breastfeeding outcomes[40]. Knowledgeable practitioners, supportive staff, and institutional policies underpinning breastfeeding as the norm have been shown to positively influence breastfeeding initiation and duration. The Baby Friendly Hospital Initiative (BFHI), a World Health Organization/United Nations International[41] Children's Emergency Fund (WHO/UNICEF) sponsored world-wide initiative to improve maternity care around breastfeeding, has had an impact on hospital breastfeeding rates. The initiative is composed of ten evidenced-based practices to ensure optimal support for women in the immediate postpartum period[42]. It has been shown to lengthen the duration of both exclusive and overall breastfeeding and to increase rates of breastfeeding in poor and minority US populations[43].

There are 413 hospitals in the US that have implemented the 10 steps in the BFHI protocol; approximately 20% of US births occur at these facilities. While prevailing maternity care trends and best practice protocols would result in the automatic incorporation of some steps, formal inclusion of all 10 steps remains difficult in the US context[44].

The 10th step of the baby friendly initiative: "foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic" has been the least developed of the 10 Baby Friendly steps. Lack of support outside of the hospital in spite of the aforementioned WIC peer counselor program has been reported as a barrier for low income (WIC) women[45].

Low income women are less likely to initiate breastfeeding, exclusively breastfeed or continue to breastfeed as long as upper and middle income women. Their children are less likely to have the advantages of a superior milk, or the benefits of the breastfeeding experience. The three studies that follow examine breastfeeding experiences of low income women from three environmental perspectives: delivery at a Baby Friendly hospital, participation in a nutrition program for low income women, and working in an institution where breastfeeding support policies were recently adopted.

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CHAPTER 2: BREASTFEEDING EXPERIENCES OF LOW INCOME PRIMIPAROUS WOMEN DELIVERING AT AN URBAN BABY FRIENDLY HOSPITAL

ABSTRACT

The purpose of this study was to gain an understanding from the perspective of first time, low income mothers of support for breastfeeding in the context of a Baby Friendly Hospital delivery, and track their progress after hospital discharge. The Baby Friendly Hospital Initiative (BFHI) is a World Health Organization/United Nations International Children's Emergency Fund (WHO/UNICEF) sponsored world-wide initiative to improve maternity care in support of breastfeeding. Thirty low income primiparous women who intended to breastfeed were interviewed prenatally and postnatally to ascertain their reaction to the 10 steps of the Baby Friendly protocol, and document their breastfeeding experiences. The self-reported breastfeeding rate at hospital discharge was 73%, and at four weeks postpartum was 60%. Women who breastfed to four weeks had a clearly stated prenatal breastfeeding duration goal, the presence of supportive family members, and a reasonably uneventful post-delivery recuperation. Conversely, women less likely to breastfeed to 4 weeks provided vague prenatal breastfeeding goals, experienced family relationship stress, and they or their infant experienced a health challenge. Obese and overweight women were least likely to initiate or sustain breastfeeding. Nine of ten steps of the BFHI were confirmed. Step 10 was not fully realized. Peer Counselors from WIC (Women's, Infants, and Children's' Nutrition Program) were the only community support mentioned; no referrals to other programs or services were mentioned. Additional efforts to create and sustain support structures which extend beyond the confines of the hospital into the community (Step 10) are necessary to fully achieve breastfeeding goals for the nation and are particularly needed by low income women.

INTRODUCTION

The Baby Friendly Hospital Initiative (BFHI) is a World Health Organization/United Nations International Children's Emergency Fund (WHO/UNICEF) sponsored world-wide initiative to improve maternity care in support of breastfeeding[1]. The initiative is composed of ten evidenced-based practices to ensure optimal support for women in the immediate postpartum period (See Text Box 1). It has been shown to lengthen the duration of both exclusive and overall breastfeeding and to increase rates of breastfeeding in low income and minority US populations[2].

There are 446 hospitals in 46 states the US that have earned BFHI status. This means that all ten steps have been implemented and WHO has reviewed and bestowed BFH status on that hospital. While prevailing maternity care trends and best practice protocols would result in the automatic incorporation of some steps, formal inclusion of all ten steps remains difficult in the US context[3].

Text Box 1

The 10 Steps for BFHI

1. Have 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 a half 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. Practice rooming-in to allow mothers and infants to remain together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital

The tenth step of the baby friendly initiative: "foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic" has been the least developed facet of the ten baby friendly steps. Models of community support that can be

replicated are few. Building community capacity to provide consistent support, timely responses and trustworthy information for new mothers renders this a very challenging step. Reliable community models are needed for extending postpartum breastfeeding support from the hospital setting into the community.

There are 22 designated Baby Friendly hospitals in New York State. Rochester General Hospital is one of four maternity units in the city of Rochester that were available during the time of the study. Currently the other maternity centers in Rochester, (Strong Memorial, and Highland Hospital) have established breastfeeding support programs that incorporate some aspects of the baby friendly initiative.

The purpose of this study was to gain an understanding of the perceptions of community support for breastfeeding of first time, low income mothers in the context of a Baby Friendly Hospital delivery. How do low income women delivering at a Baby Friendly Hospital experience breastfeeding support? In addition, this study aimed to examine post-discharge support (What formal or informal community support systems are in place for low income breastfeeding women, and what other institutions, professionals, or volunteer groups are sought out for guidance and support?) and to identify opportunities to establish new or bolster existing support mechanisms (What priority areas should be considered to improve community support for low income breastfeeding women living in Rochester, New York?).

METHODS

A prospective mixed methods study using a concurrent nested design was implemented. In this design, quantitative data collection was embedded in the qualitative data collection process at two points in time[5]. Interview subjects were the source of both quantitative and qualitative data. This method has several strengths. Quantitative data can readily shed light on the qualitative information shared by the participants. In the context of this study, for example, reasons for placement in the newborn intensive care unit (NICU) may not be completely understood by study participants, but they could describe details that provide critical clues as to the nature of the situation.

Population and Study Area

Primiparous women, residing in the city of Rochester, who were at least 18 years old and low income were recruited based on their stated intention to breastfeed and deliver at Rochester General Hospital. Women were recruited at Monroe County Health Department Supplemental Nutrition Program for Women, Infants, and Children (WIC) Program, Waring Road and West Main Street locations, and at the Healthy Start Program at West Main Street in Rochester. The West Main Street WIC site and Healthy Start Program are co-located. Income verification is necessary for participation in both WIC and Healthy Start programs (<185% of poverty level for WIC, and <130% of poverty level for Healthy Start), therefore, all women recruited at these locations were considered to be low-income. Approval for this study was granted by the institutional review boards of Unity Health Systems, the New York State Health Department, Division of Nutrition WIC Program, and Cornell University.

Data Collection and Key Variables

Women were approached at prenatal classes. After a short explanation of the study procedures to the group, women interested in participating in the study completed the informed consent form. All initial interviews at Healthy Start were face- to- face interviews conducted privately in a room set aside for this purpose. Phone contact was made after the due date to schedule the second interview. At the WIC sites, due to space constraints, no interviews were conducted at those locations. All WIC interviews (pre- and post-) were conducted as phone interviews. A total of 8 interviews were conducted in person, 52 interviews were conducted via phone call. After the second interview, all study participants received a $25 gift card.

Interview questions were drawn from a number of existing survey instruments: the Obstetric Maternity Experiences Survey[5], Care in Obstetrics: Measure for Testing Satisfaction or COMFORT scale[6] and Breastfeeding Self-Efficacy Scale[7]. Interview guides were designed to capture reactions and impressions of preparation for breastfeeding during pregnancy, breastfeeding guidance while in the hospital, and support for breastfeeding after discharge. The prenatal questionnaire probed for baseline data on the intention to breastfeed, and family and community supports (Appendix 2.1). The postpartum interview captured information on the delivery experience, hospital stay, postpartum breastfeeding needs, sources of support received, and ideas for improving support systems (Appendix 2.2). The interviews also captured self-reported quantitative data including maternal height, weight, pregnancy weight gain, delivery date, and infant weight and length. Both interview guides were reviewed by the deputy editor of the journal Breastfeeding Medicine who is a pediatrician at the Rochester General Hospital, an associate professor of clinical nursing at the University of Rochester School Medicine and Dentistry, and a project coordinator (holly) All three have conducted breastfeeding research in

Rochester. Interviews guides were piloted to test the wording and flow of questions, and ease of administration.

Interview questions were designed to solicit information and observations regarding expected BFHI procedures, and the reaction of women to these procedures. Variables of interest are listed in Table 1.

Table 2.1 Prenatal and Postpartum Variables of Interest

Source	**Variable**	**Background**	**Importance**
Prenatal Interview	Breastfeeding intent	Intention is highly predictive of behavior[8].	Key inclusion criteria.
	Persons influencing the decision to initiate breastfeeding	Women with support from family and significant others are more likely to breastfeed[9].	The social environment influences breastfeeding success.
	Pre-pregnant Body Mass Index	Overweight and obese women are less likely to breastfeed[10].	Support for overweight and obese women may require unique strategies and/or personnel.
	Race, ethnicity	Breastfeeding rates vary by racial and ethnic groups.[11]	Key inclusion criteria.
	Age	Very young women are less likely to breastfeed[12].	Little known about breastfeeding in very young women.
Source	**Variable**	**Background**	**Importance**
Postpartum Interview	Breastfeeding initiation	Initiation shortly after birth is predictive of breastfeeding success[13].	Key outcome measure.
	Breastfeeding status at 6 weeks	Exclusive breastfeeding to 6 months is the goal; women making it to 6 weeks are more likely to make it to 6 months[14].	Key outcome measure.

Birth weight /length	Infant health status at birth affects their ability to nurse[15].	Poor growth may be an indication of other health problems and interfere with breastfeeding.
Maternal health	Maternal illness is a barrier to breastfeeding[16].	Poor health may interfere with breastfeeding, other activities.
Support systems, family, friends, community	Significant others influence duration of breastfeeding[17].	Little information on social influences on breastfeeding success are known in this context.
Participation in supportive services	BFHI influences breastfeeding success[18].	Baby friendly community supports should be in place for these women.
Return to work, school	Early return to work or school is predictive of weaning[19].	Little information is available regarding return to work or school in this population.

Recruitment Issues and Final Sample

The significant subgroups of interest were women in different pre-pregnancy weight categories (normal and overweight/obese pre-natal BMI) and racial/ethnic groups (Black, White, and Hispanic), with a target of 15 women per subgroup. The total desired number of subjects was 90. The participant recruitment process for this project was very long and time consuming. Sample recruitment began in December 2009, and continued through January 2012. As per NYS Division of Nutrition WIC Program requirements, all recruitment was conducted in person by the principal investigator. No prescreening for pregnancy status, or hospital of delivery was allowed resulting in prolonged case identification. Clinic staff were not allowed to prescreen women scheduled for WIC appointments for any study inclusion criteria. As WIC program participants can send their proxies to pick up checks and sit-in on required educational classes, proxies frequently attended in the place of participants for nutrition education and check pick-up. Many (most) of the proxies were mothers of the prenatal WIC participants; some of these women

commented that they hoped their daughters would breastfeed, but could not sign the consent for them. These challenges resulted in many unproductive trips to the recruitment sites.

Enrollment of Caucasian women was challenging given the population characteristics of Monroe County; recruitment of women with normal BMI proved equally difficult. Despite the prolonged case finding to achieve an even distribution of race and BMI categories, an uneven distribution of both race/ethnicity and BMI was realized. Given the time investment necessary to achieve the planned BMI distribution of the sample, recruitment was stopped when 30 sets of prenatal/postpartum interviews were completed.

Pregnant women who heard the description of the study were universally positive, asked relevant questions about the logistics of the interviews, phone call recording, use of data, and possible publication of results. There were only a few refusals from women at the recruitment sites. The majority of refusals were attributed to the uncertainty of their future living situations in conjunction with likely changes in home phone and cell phone numbers.

Phone calls initiated from the principal investigator's office register as "restricted" on caller identification systems. Calls from restricted numbers in the eyes of participants are usually undesirable calls – either telemarketers or bill collectors. Fortunately, one woman shared her concerns about the caller ID early in the study process. All subsequent calls were made from a personal cell phone, both to increase respondent success, and because that allowed flexibility to make calls at any point in the evening which proved to be a much more convenient time for new mothers to talk.

Postpartum phone calls were scheduled based on due dates plus four weeks. This was a reasonably successful strategy. Challenges reconnecting postpartum included changed phone numbers, limited minutes on track phones, and finding convenient times to talk when mothers were not busy with home activities. In many instances, the first contact postpartum was used to set an appointment to call back when they could chat for an extended period of time.

Maintaining privacy during phone conversations was initially a concern as the influence of others within earshot of the conversation could influence how questions were addressed and/or answered at all. During the prenatal calls there wasn't much discussion of personal or private issues, women were comfortable discussing their breastfeeding preparation and plans. Postpartum discussions often included a description of labor and delivery, breastfeeding trials and other descriptions of more personal situations. Most postpartum calls were conducted when participants were at home as they sat with their babies. In a few cases they had arranged for baby sitters and were at a location by themselves anticipating a longer interview.

A total of 43 pregnant women consented to participate in the study. Thirteen were lost to follow-up: 3 were no longer interested when contacted by phone, 10 were lost due to wrong phone numbers or phone numbers no longer in service. Thirty pre-post interview sets were completed. Half the group was recruited from the east side of Rochester (Waring Road location); and half from the west side of Rochester (West Main Street location).

Data Analysis

Qualitative research provides a mechanism for discovering from participants how events occur and what personal meaning these events have in their lives. Interview data from transcripts were analyzed to understand how breastfeeding and related events unfold from the perspective of

the participant. Qualitative analysis of interview transcripts was completed using a software package developed for this purpose: Atlas, ti (Scientific Software Development GmBh, Berlin, Germany). Transcripts were analyzed using the constant comparative method for emergent themes as is suggested by grounded theory[20]. Interview content was used to address the three research questions, and provided the basis for generating a description of the experiences of participants during the first few weeks postpartum.

Quantitative data were gleaned from the interviews to describe the sample: BMI, weight gain and birth weights, age, race, etc. Transcriptions were then analyzed to assess whether there was evidence of hospital implementation of the 10 Steps. Lastly, the interviews were analyzed to discover emergent themes in their descriptions of their breastfeeding experience from delivery to the point of the post-partum interview. To insure the trustworthiness of qualitative data, a series of meetings with staff at both Healthy Start and the Monroe County WIC Program were conducted to discuss findings and obtain their views on the nature and substance of findings. Triangulation of data from these sources served to establish credibility of findings.

RESULTS

Characteristics of the 30 women and their infants completing the study protocol are summarized in Table 2. Individual study participant characteristics are provided in Appendix 3. The average age was 21.5 years (range 18 – 28). The group was 46.7% Black, 33% Hispanic and 23.3 % white. The average pre- pregnant weight was 79.1 kilograms (range 51.7 – 127.0 kg), the average pre pregnant BMI was 30.8 (range 18 – 52.9kg). The women were on average 161 centimeters tall (range 152.0 – 179.1 cm). The average pregnancy weight gain was 16.8 kilograms (range 8.6 – 29.5 kg).

Table 2.2 Study Characteristics by Breastfeeding Experience

Characteristic	All women	No BF	BF at Discharge	Stopped before 4 weeks	BF at least 4 weeks
n	30	8	22	4	18
Mean Age (y) Standard Deviation	21.5±2.5	21.6±3.3	21.5±2.2	20.5±1.3	21.6±2.4
Race White	7	1	6	0	6
Black	14	6	8	2	6
Hispanic	9	1	8	2	6
Pre-pregnant weight	79.11	84.45	77.16	87.54	74.89
Standard Deviation	19.77	13.38	21.55	13.83	22.5
Mean Height (cm)	161.0	163.3	160.3	160.7	160.0
Standard Deviation	5.74	7.62	8.47	2.05	4.9
Body Mass Index	30.8	32.78	30.1	33.45	29.3
Standard deviation	7.6	3.96	8.5	4.63	9.0
Mean Weight (kg) Gain	16.82	15.88	17.14	18.14	16.92
Standard Deviation	5.49	2.63	6.21	8.75	5.85
Mean End[1] Weight	96.07	100.38	94.53	104.55	92.32
Standard Deviation	20.5	14.74	22.32	14.97	23.49
Mean Postpartum Weight Standard Deviation	90.67 17.28	92.67 10.16	89.99 19.32	100.58 14.33	87.18 19.73
Infant Status					
Mean Birth Weight	3433.12	3416.12	3438.8	3614.56	3401.94
Standard Deviation	351.5	260.81	308.54	351.53	365.71
Mean Birth length	20.1	20.4	19.95	20.8	19.67
Standard Deviation	1.01	0.89	1.15	1.18	0.86
Gender F	14	3	11	1	10
M	16	4	11	3	8
Recruitment Site					
W. Main St	15	3	12	2	10
Waring Road	15	5	10	2	8

[1]End weight = last reported weight prior to delivery

Infant birth weights averaged 3343 grams (range 2806.6 to 4082.2 grams). Twenty-four (80%) births were vaginal births, six (20%) were cesarean section births. Infant gender was

53.3% male (16) and 46.7% female (14). One infant was admitted to the NICU after birth. Two infants were treated for jaundice after hospital discharge and before the second interview.

Twenty-five women (83.3%) attempted to breastfed their infants in the hospital, 22 (73%) were breastfeeding at hospital discharge. Eighteen (60%) women were still breastfeeding at the time of the postpartum interview. The average reported breastfeeding duration of the four that stopped breastfeeding before the second interview was 19.9 days (range: 3 to 28 days).

The prenatal BMI status was 56.7% obese, 20% overweight, 20% normal and 3.3% underweight. Due to the small number of underweight and normal weight women, for analysis the underweight and normal weight (UN) women were combined and overweight and obese (OO) women were combined. The only underweight woman was white. All but one black woman was OO. Table 2.3 compares underweight and normal group to the overweight/obese group; pre-pregnant BMI, pre-pregnant weight and reported weights at the end of pregnancy were significantly different ($p<.0001$). The OO group included more blacks and Hispanics ($p<.05$). The breastfeeding initiation and drop-out rate before the second interview between UN and OO women was significantly different ($p<.05$).

Table 2.3 Study Participant Characteristics by Pre-Pregnant BMI

Characteristic	Normal/Underweight	Overweight/Obese	P value
N	7	23	
Mean BMI, Standard Deviation	21.5±1.98	33.63±6.22	P<.0001
Mean Pre-pregnant Weight, SD	56.11±4.90	86.14±16.96	P<.0001
Mean Height, SD	161.54±5.0	160.78±6.0	ns
Mean Weight Gain, SD	17.10±6.17	16.69±5.35	ns
Mean End[1] Weight, SD	164.2±18.1	226.3±40.8	P<.0001
Mean Baby Weight, SD	3324.83±338.49	3467146±363.16	ns
Black White Hispanic	1 4 2	13 3 7	*
Mean Age, SD	22.1±2.7	21.3±2.5	ns
Number Breastfed	7 (100%)	15 (65.2%)	P<.05

[1]End weight is the last reported weight prior to delivery
*multiple cells with <5 subjects

Table 2.4 Characteristics of Mothers and Infants Breastfeeding at the 2nd interview vs those breastfeeding at Birth

Characteristic	BF at birth N=22	BF at 2nd Interview N=18	P value
Mean Age (y) Standard Deviation	21.5±2.2	21.6±2.4	ns
White Black Hispanic	6 8 8	6 6 6	ns
Mean Pre-pregnant wt. Standard Deviation	77.16±21.54	74.89±22.50	ns
Body Mass Index	30.1±8.5	29.3±9.0	ns
Mean End[1] Weight Standard Deviation	94.53±22.32	87.18±19.73	ns
Mean Postpartum Weight Standard Deviation	198.4±42.6	192.2±43.5	ns
Mean Birth Wt. Standard Deviation	3440.3±368.76	3401.94±267.2	ns
Mean Birth length(cm) Standard Deviation	50.67±2.91	49.78±2.19	ns
Infant Gender F	11	10	ns

Eighteen (60%) of the women continued to breastfeed at the second interview. There were no significant differences in any of the variables (pre-pregnant BMI, race/ethnicity) for breastfeeding at delivery or at the second interview (Table 2.4).

Evidence of the Implementation of Baby Friendly Hospital Steps

The contents of interview transcripts were analyzed for evidence of the implementation of the 10 step BFHI protocol according to the women's reported experiences. In addition, hospital lactation consultants discussed implementation of hospital protocols with the principal investigator over the course of the study period.

BFHI Step #1. *Written Policy* and Step #2 *Train all staff* were confirmed with hospital staff via principal investigator interview.

Step# 3. *Inform women of the benefits and management of breastfeeding.*

Women scheduled to deliver at RGH are required to attend a tour of the birthing facilities, and attend a prenatal class. All women spoke highly of this experience and the importance of including breastfeeding in the discussion of post-delivery care. A representative comment on the tour of the facility:

A: Yes, that (Rochester General Hospital tour) was a good thing...They showed us the delivery rooms, and equipment, and talked about rooming in with the baby and what to expect when you're in labor...they gave us, they let us walk around and see the equipment, you know and it wasn't busy so they talked to us for a long time, yea it was good. (Participant #4)

A: The class I took at Rochester General gave me the most information.

Q: Ok. And what was it about that information that was so good?

A: It was just the whole two hours was dedicated to breastfeeding. They talked about like which kind of pumps they recommend and showed us slides and I just felt like that was the most information I received about breastfeeding, was from that class. (Participant #7)

Step # 4. *Help mothers initiate breastfeeding within a half hour of birth*.

There was ample evidence that all mothers were assisted as soon after birth as was practical, and instruction provided by hospital staff was helpful and immediate. Getting the baby to breast, finding comfortable methods to hold the baby were described by many. Adherence to the 30 minute window was difficult to determine as perception of time among this group was questionable. Descriptions of breastfeeding attempts in the delivery room or shortly thereafter, however, were typical.

> *I was so tired, I was not expecting the nurse to like ask me if I wanted to right there in the delivery room. I was like, are you sure, is it ok to do that now? And, they were like, no this is a good time... and it was good, cause they had me in the recovery area for a long time cause I guess they wanted to make sure everything was ok...I think it was the best thing, cause I might not have tried it if I was alone, like I would have said, no, this isn't gonna work, I can give the bottle, that will work better. But, like I said, the nurse said, oh, you go ahead, the baby is healthy and strong and it will be fine...and it was. (Participant # 28)*

Step # 5. *Show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants.*

The immediate concerns of establishing let down, and making sure the baby established latch were addressed. Ensuring that mother and baby were comfortable and successfully establishing a routine were the concepts most frequently discussed. Issues related to long term needs were not recounted by study subjects. There was no evidence of any discussion of how to sustain milk supply, or how to maintain lactation when separated such as pumping and storing milk during the hospital stay. Pumping was discussed, however, during the RGH prenatal tour of the birthing facility required prior to delivery; and by WIC peer counselors before and after delivery.

Step # 6. *Give newborn infants no food or drink other than breast-milk, unless medically indicated.*

As reported by mothers, here was only one instance where water was offered/recommended for a newborn. Based on the postpartum interview, the mother was not aware of a medical problem per se, but clearly nursing staff were concerned for mother and baby, evidenced by frequently checking their status.

A: At first, I thought she was just too tired to be hungry...not much happened, I mean she wasn't much interested. It wasn't until the next morning that she really tried to nurse or anything.

Q: Did the nurses at the hospital help you with that?

A: um, yea, they wanted to give her water to get her to pee...she wasn't much interested in that either. But, then you know, she was sleepy and they kept coming in to check on her and me. It kinda made me wonder if something was wrong...

Q: Besides water was there anything else they suggested?

A: um, yea, they said to try to offer the breast every few hours to see if she would take anything, and if she didn't end up nursing at all they would give her a bottle, which I guess was ok, cause she's got to eat something...but in the end she got her rest overnight and the next morning she found the nipple and wow, she knew what to do, and it was ok. (Participant #13)

There was also a case where formula was provided to the baby. The mother described taking medication, but whether breastfeeding was contraindicated and formula medically necessary as a result was not determined.

Q: So while you were in the hospital, what else, if anything did you feed her?

A: Some formula for the night feedings. Two times, I think two times at night they couldn't wake me up so they used formula. You know the little, very little bottles....we have some at home just in case.

Q: You must have been very tired or else you're a very sound sleeper.

A: Yea, yea, I took, I had a bad migraine and they gave me something to take care of that and it put me to sleep, and I guess that was it... (Participant # 28)

Step #7. *Practice rooming-in: allow mothers and infants to remain together – 24 hours a day.*

Rooming in was universally practiced, with the one exception of the baby admitted to the NICU.

Step #8. *Encourage breastfeeding on demand.*

Rooming-in by design is intended to allow unlimited access to the baby and therefore facilitate breastfeeding on demand. Whether staff 'encouraged' or specifically stated that breastfeeding on demand was intended or just assumed to be the norm was not determined. For some of these first time mothers, the idea of rooming-in was novel.

> *I never thought about it before, I thought they always put the baby in the nursery, like, all the babies together. But, I think that would nice having to see the baby, to have the baby near so I could see it all the time. (Participant #27)*

Step #9. *Give no artificial teats or pacifiers to breastfeeding infants.*

There were no reports of pacifiers or any other items provided to infants.

Step #10. *Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital*

Mothers were provided an 800 hotline phone number to call the hospital with questions after discharge. There was no report of a specific referral to a support group or other community resource.

Evidence of other institution-initiated contacts and community support post delivery

In addition to the BFHI hospital protocols there was evidence of three types of formal breastfeeding support experienced by this group postpartum: a hospital visit, home visit and postpartum phone calls by WIC Breastfeeding Peer Counselors. Eleven women received no

additional contact; 12 received one contact, 7 received more than one contact (Table 5). A total of 31 additional contacts were provided to 19 women. Twenty–one contacts (67.7%) were provided by a WIC peer counselor, 19.4% provided by RGH staff and 12.9% by public health nurses.

Table 2.5 Formal Community Contacts Post Discharge

# contacts	0 contacts	1 contact	2 contacts	3 contacts	4 contacts	Total Contacts	**%**
# women	11	12	3	3	1		
Hospital visit by WIC staff		2	0	3	0	5	16.1
Home visit by WIC staff		0	1	0	1	2	6.5
Home visit by PHN		1	0	2	1	4	12.9
WIC Phone call		8	3	2	1	14	45.2
RGH phone call		1	2	2	1	6	19.4
Total Contacts		12	6	9	4	31	100

The Breastfeeding Experience

There were several themes that emerged from the interviews: positive prenatal breastfeeding messages are being heard; goal setting is an important feature of breastfeeding success; women that discontinue breastfeeding wish they had persevered; mothers of the study subjects play a critical role in postpartum support; hospital lactation consultants and peer breastfeeding counselors are appreciated for their sincere and informative approach to breastfeeding education; health care providers are missing a teachable moment; community-based breastfeeding support systems are lacking; and postpartum women have potential to be the best promoters of breastfeeding regardless of their experience.

Loss of a teaching opportunity

Expectant mothers are frequently asked how they will feed their newborns – at WIC and Healthy Start, but also at health care provider appointments, by public health nurses, and family members. The study question – *has anyone talked to you about breastfeeding*? - was answered 28 of 30 times as "yes". Unfortunately, at prenatal OBGYN visits this question did not lead to a more substantive discussion about breastfeeding. If the answer is "yes, I plan to breastfeed", the conversation stopped there, leaving these first time mothers disappointed and confused.

> *They just ask and then assume...we know what to do (Participant #12)*

> *At the ob., they just asked me – they have flyers and I guess they might have a class there but they didn't do anything....She just marked in the chart – I guess they were just checking to see if I was interested, and, that's it. (Participant #20)*

Sharing additional useful information during the prenatal visit is not commonly occurring. A valuable teaching opportunity is being lost either due to provider indifference, or

assumptions about what women already know. Either way, additional follow up questions and/or advice that benefit these women is not provided.

Importance of goals

Inability to articulate a breastfeeding duration goal was negatively associated with breastfeeding duration. When asked how long they planned to breastfeed, 9 of 30 responded with a qualitative response *such as "a couple of weeks, as long as he wants, until he doesn't want to anymore, not sure until I try, as long as it works, have to try it first."* The women providing vague qualitative responses were less likely to breastfeed, or less likely to breastfeed to the second interview. Six of the eight women (75%) who did not breastfeed at hospital discharge provided vague answers (Table 2.6).

Table 2.6 Goals and Circumstances of Women not Breastfeeding at Hospital Discharge (N=8)

ID#	Mothers status	Infant status	Prenatal Breastfeeding Goal
1			***As long as I can***
9			***Have to try it first***
23			***First few weeks***
5	C-section	*1. NICU admission*	***Haven't thought about it***
30	C-section		***I want to try***
21		*Baby not interested*	4 weeks
25		*Baby not interested*	***..as long as it works, maybe 4 weeks –***
16	Transfusion	*Low Apgar score*	6 months

Similarly, two of the four the women that discontinued breastfeeding before the second interview provided vague descriptions of their breastfeeding plans: *I want to try,* and *until the baby is OK* (Table 2.7).

Table 2.7 Goals and Circumstances of Women Discontinuing before the Second Interview (N=4)

ID #	Mother's issues	Infant issues	Breastfeeding Goal	Institutional Support	Family support/issues
24	Sore, blisters	NA	***Until the baby is ok***	No contact; no problems at WIC check pick up, did not pursue other support	Significant other
29	Exhausted	NA	***Want to try***	WIC hospital visit	Significant other
12	Exhausted	Jaundice	***6 weeks***	WIC call; Mom called RGH – no answer	Grandmother, split with significant other
8	Engorged	Non-stop breast feeding	***6 weeks***	RGH phone call	Grandmother, great grandmother

Conversely the women breastfeeding at the second interview had a more definite time line or duration goal (Table 8). The majority were committed to trying breastfeeding, and optimistically held a belief that they would be successful.

> *I will be breastfeeding. It's supposed to be better, it's the best for the baby and they're supposed to get sick less, be less with stomach problems. It's something I've been thinking about, and I think it would be good. (Participant #7)*

Some in this group were frankly surprised that there was a question about infant feeding choice. The quote below represents several women who were convinced breastfeeding was the right thing to do and they would not consider anything else.

> *I know it's a big thing, a big push in the classes for all the girls to breastfeed, but it's just natural. It's not a big deal to me – they make it like this big thing. It's not. OK? It's what you do. (Participant # 18)*

Table 2.8. Goals and Circumstances of Women Continuing to Breastfeed to 2ND interview

ID #	Mother's issues	Infant issues	Breastfeeding Goal	Institutional Support	Family support
2			***12 months***	WIC call	Mom
3	C-section		***24 months***		Husband
4			***1 month***	WIC call	Mom
6			***As long as it takes***		Boy friend
7	C-section			WIC Hospital visit RGH call	
10			***3 months***	2 WIC visits	Husband, extended family
11			***12 months***	WIC call	Mom, sister
13			***6 months***	WIC call	Mom, sister
14			***6 months***	WIC Hospital visit RGH call	Baby Father
15	C-section		***for a while***	WIC call	Mom, sister Baby Father
17			***12 months***		Husband
18	Engorgement	Jaundice	***6 months***	Readmitted	
19	Gestational Diabetes		***Depends on baby***	WIC call RGH call	Husband, Mother in law
20	C-section			WIC call 2 WIC visits RGH call	Mom Baby Father
22			***12 months***	WIC Hospital visit	Husband, Mom
26			***9 months***	WIC call	Husband, Mom
27			***6 months***	WIC call	Mom
28	Migraines		***6 months***	WIC Hospital visit	Mom

Unexpected events derailed plans

Unexpected events affected postpartum plans: difficult delivery, slow recovery, unexpected cesarean section, infant jaundice, and domestic issues or split with their significant other, household moves or relocations were all challenges faced by this group. However, women experiencing a life-plan altering event who discontinued breastfeeding expressed both regret that

they could no longer breastfeed, and a sense of accomplishment that they had gotten as far as they had. The women below share a sense of lost opportunity and regret, the third woman was hoping to breastfeed for 6 months, but pleased with achieving 4 weeks.

> *I don't think that was it, you know, every baby is, every baby takes to things their own way. He just wasn't interested, I coulda tried more times, and we coulda made him, maybe? But I don't know how you make a baby do anything, they should be hungry, right? That just wasn't happening... My mom, my boyfriend, was all like, whatever you need to do, you got a healthy baby, that's the important thing. (Participant #21)*

> *But now, I wish that I would have stuck with it because it was hard then, but now I see it would have got easier. Now she's more alert- like how she's alert now it would easier... If I had kept breastfeeding my milk supply would increase even if I still had to supplement her, I wish I would have stuck with it.*
> *And, I feel bad for stopping, but I tried. She still remembers and still tries to, you know…she still remembers …"That's the good milk mom, that's what I'm remembering"... (Participant #7)*

> *I'm really glad I breastfed for 4 weeks. I worried about how much he needed and maybe I needed to add formula earlier, but I'm glad I did it. (Participant #8)*

Q: so, you had a pretty tough delivery, but, when you think about the help you got for breastfeeding, can you think of anything that might have been more useful or helpful to you either during your pregnancy or at the hospital?
A: I, I don't' think so.
Q: Any kind of information that might have been delivered differently, or other information that would have been helpful?
A: no, I was kinda on the fence about myself, what I would do – to see how the baby would react ... So, it's kinda like, this is what happened and I don't think - to change anything, no, I had the information from wic,
Q: Did the WIC peer counselor call you after you delivered?
A: yea, she was there in the hospital, she saw the tubes hooked to me. She was, she wanted me to try, sure, but, she understood, too. (Participant #9)

Importance of family

There was a tremendous range of family reactions to the idea of breastfeeding. There were situations in which breastfeeding was an expectation:

It's not unusual in my family to do this. ..Everyone breastfeeds for a year or almost a year. But, with other foods after a little while, and some foods after three months with the breast milk. (Participant #13)

Do you have support in your home or in your neighborhood for breastfeeding?

A: Yeah, my mom.

Q: Did your Mom breastfeed?

A: No she didn't. She says -you best do it. But I was like, if I'm ready, I'll do it. I told her I'm gonna do it for a month and see how it is first. (Participant #4)

There were also situations where family members were blatantly promoting bottle feeding and discouraging breastfeeding:

They want me to formula feed, but I go against their decision. (Participant #6)

Breastfeeding? They... we never really talked about it. I was always shy to talk to my mom and my aunts about it but they told me a little secret to getting the baby to stop breastfeeding. That's what they did… they were against breastfeeding. (Participant #3)

I have a lot of support, but there are some people. .don't think I can do it – but that is the best motivation; they think I don't have enough motivation. (Participant #11)

Despite this range of family reactions, the majority of women identified their family most often as their source of postpartum support in general and breastfeeding support in particular. The critical family members were mothers, grandmothers, aunts and sisters. "Support" took many forms: from material, psychological, and social. Several of the single women went to stay with their mothers, or temporarily reside in their mother's house until such time that they could return to work or make other arrangements. Most of the study subjects lived in close proximity to their mothers, so in person contact was frequent. Chores of everyday living – meal preparation, laundry, house cleaning, babysitting and picking up WIC checks, all lessened the toll of caring for a newborn and managing a household.

R*ight now I take naps all day long, I can't stay awake for very long...and I just can't get caught up...I mean, if it wasn't for my mom, I wouldn't be able to do anything....eat, do*

laundry.. It would like be unbearable here, you know. I don't know what I would do without that help. (*Participant* #27)

Yea, we are living with my mom now until we can find a place of our own, yea, it's ok for now, cause she helps me... with like she changes her, and helps when I get tired, I mean, babies are demanding, like they don't work on the same schedule we do – I, sometimes, I just don't get enough sleep, I get so tired, and she cooks – she's a good cook and she loves to cook for me and my husband. So, I, yea, we are ok for the short term. (Participant #26)

Most importantly, these female family members provided breastfeeding guidance and tips for caring for newborns that was timely, helpful and reassuring. Breastfeeding women were more likely to call their mothers with problems and questions than other sources; and were most likely to be relied on in the most difficult situations. The experience of the following women, immediately after discharge from the hospital and then as the weeks progressed was illustrative of this critical support.

A: At the beginning of the time I was sore, I called the hospital hot line-but, nobody was there. It was an answering service. I didn't even leave a message. At the time I called it was like – no, I'm not leaving a message - I need help now –I called my mom.

Q: Did you call at night...was it after 5 o'clock?

A: Well, yea – it was midnight.
I was trying to get, to pump, but it hurt, and then I tried to get him to breastfeed, that didn't work either...he was fussy, I was so tired, and it hurt...I kept trying the things I remembered them talking about...
I tried to get into a routine to get up in the morning and sleep at regular times with – more like naps – when the baby slept. But, you know, he started to be up more and sleep less....so I could never get a nap like they suggested...I tried to get a baby sitter to get some sleep, my mom even came over at night so that I could sleep through the night...but I was breastfeeding, so I needed to get up anyway... ...it happened so fast, my boyfriend moved out, then I was back and forth to the hospital, and I don't know how I would have been able to have another appointment with somebody – even if they came to the house....who knows maybe that would have helped. If I hadn't had my mom here it would have been different. I ended up calling my mom. She's pretty calm. She told me to warm up a bottle and at least get him to take something to get him back to sleep, take a nap myself and then try to pump a little and maybe give that milk to him at the next feed. She was trying to help me stay breastfeeding.... (Participant #12)

Value of Lactation Consultants and Peer Support

Study participants appreciated and valued the expertise of the hospital-based lactation consultants. In many instances the presence of a knowledgeable and supportive person clearly made a difference for initiation and duration. For some women the initial breastfeeding experience could have ended badly if not for the presence of the lactation consultant; or it might not have been attempted at all.

> *Yea, it took maybe 45 minutes to get her to feed, it seemed like a long time, and I was ready to just say, get the bottle and try it later, but she did get the hang of it. I don't really know how much she coulda had...but at least we did it.*
> *The next time the nurse was there, she helped with how to sit up and hold her a little differently. We tried three or four ways to hold her- cause she was heavy on my arms, I wasn't used to holding her up like that.....it's better now. I would say, you know, all the nurses asked me questions, and they were really good, I mean all of them were very nice to me.* (*Participant* #29)

WIC peer counselors were consistently mentioned as the staff most likely to contact the study subjects in the hospital or at home to inquire about how breastfeeding was going. Peer Counselors were tasked with holding a breastfeeding class for every pregnant woman enrolled in WIC. By their due date, every pregnant woman should have been seen by a peer counselor, participated in a breastfeeding class, and be on a schedule for a postpartum hospital or home visit. This system was remarkably well-executed. Their success, however, was a testament to their ability to follow through in the hospital and at home as needed:

> *The person who helped me with breastfeeding was my um the WIC peer counselor. She's the reason I did it for 2 weeks. She was telling me that is was going get easier , and she, she knew that like how I felt that I couldn't move and I was in pain, and she said yea that makes it hard. She was the one who told me to use the pillows, like I used to- if I was sitting on the edge of the bed like, she would stack a whole bunch of pillows and lay her (the baby) like this on the edge of the bed. She was the main help -like she came to my house, she brought me a breast pump, and she was most helpful. She was the one who really tried to help me stick with it. (Participant #7)*

Community-based breastfeeding supports

The void of 24-hour breastfeeding support was clearly evident. The extension of support from the hospital consisted of handing out an 800 breastfeeding hotline number. As reported by many women seeking help after hours, this number was not staffed 24 hours a day; it was possible to leave messages 24-7, but real time support ended after usual business hours.

Q: *Did you use the hotline or any of the 800 numbers that the hospital gave you?*

A: Well, I tried at one point, but nobody answered. They say it's a hot line but nobody was there in the night, I mean that's when I needed them, you know.

I got help during the day. It was at night that everything seemed to go wrong and nobody was around. (Participant #3)

While not an area identified initially for exploration as a source of support, one woman mentioned the possibility of support at school (GED program). But, this was clearly not an acceptable option for her...

Q: Thinking about this whole breastfeeding experience, is there anything you think that could have been done or said that would have convinced you to start breastfeeding from the beginning?

A: No, I mean, the thing is, I gotta go back to school. I can't take a baby into school and be a student. I know they have programs for that, but I don't want to be part of that – I don't want to be part of that group...and it's no place for a baby. (Participant #9)

Also lacking was a community support group for these women. They had the opportunity to call and set appointments to talk with the peer counselor, but a defined support group referral or possibility of meeting with an organized group of breastfeeding women was never mentioned as a possibility. In fact when asked what could be put in place to help women in the future, that idea was suggested by one of the study participants.

Q: What do you think other mothers might benefit from that isn't in place now?

A: A place for them to be themselves – to relax and breastfeed...not like the doctor's office, everyone is sick there, and not like the hospital in front of more sick people, but a place for other mothers, especially a place to speak in Spanish that's more like home but with other mothers.

Q: Is there a place like that that you can go?

A: No, but I think that would be very nice for mothers, especially mothers with very small children. (Participant #22)

Promoting breastfeeding

The breastfeeding experiences of these women could be summed up as *positive but frustrating*. It was very positive for the women who were successful breastfeeding until the second interview regardless of their ultimate breastfeeding goal. Achieving this benchmark, and talking about it with someone not otherwise involved in their medical care was a point of pride. Regardless of the difficulties with labor, delivery and challenges of the first few weeks, these women were satisfied that even if the baby weaned soon, they had a good start.

The women that called in the middle of the night, never got a call back, and then were challenged to handle a difficult situation on their own. Their perception of an 800 number hot line, was that someone would be there to talk to when they called. They expressed great frustration as their understanding was that the "800" number would be a lifeline of support when in fact, that was not the case.

Despite their circumstances, the women in the study had very similar advice to share when asked what they would tell others.

Q: If other pregnant women were to ask you about breastfeeding, what would you tell them?

A; To try it, just you know, try it. There's nothing too difficult, the baby gets it…or if it doesn't, you always have the bottle, the formula. I don't know, maybe I'm lucky…it went fine… (Participant #25)

Q. *In your opinion what should we be telling other young women about breastfeeding so that more mothers breastfeed?*

A: *I think that they should just try, that's the most important thing, and they should just try.*

Q: *Would it help to have more or different kinds of breastfeeding classes?*

A: *The breastfeeding class is good, but some girls have made up their minds already...so it's tough for the counselor.*

Q: *Do you think the class should be different?*

A: *No, not really, it should be mandatory – like it is, and maybe before the new moms get formula, they should have to try to breastfeed...*

Q: *Do you think that would work?*

A: *Not really...but if they try and it works out, then, more would breastfeed. I know some of these girls - are really girls, they are young...so each one has to work out what they will do... (Participant #17)*

DISCUSSION

In this convenience sample of low income women delivering in a designated Baby Friendly Hospital, the self-reported breastfeeding rate at four weeks postpartum was 60%. What distinguished women who breastfed through the second interview was a clearly stated prenatal breastfeeding duration goal, the presence of supportive family members, and a reasonably uneventful post-delivery recuperation. Conversely, women less likely to breastfeed through the second interview provided vague prenatal breastfeeding goals, experienced family relationship stress, and they or their infant experienced a health challenge. The assistance of WIC peer counselors and their ability to make home visits as well as visit in the hospital was essential for supporting many to continue to breastfeed to the second interview. While WIC participants have peer counselors that help mitigate problems and answer questions, most women rely on female family members, primarily their mothers, for breastfeeding guidance and support. The assistance of hospital lactation consultants in initiating breastfeeding immediately after delivery was critical

for many women and may have prevented many from bottle feeding immediately. Evidence of a system of referrals of women to community –based programs in accordance with the 10th step of the BFHI was not realized.

Overweight/obese women were significantly less likely to breastfeed, and the duration of breastfeeding was significantly less than that of normal weight women. Breastfeeding initiation and duration rates vary significantly by ethnicity, with fewer black and Hispanic women initiating and continuing breastfeeding than white women. These results are consistent with national trends and national WIC data. The breastfeeding initiation rate of 73% approaches the Healthy People 2020 goal (81.9%), the NY State 'ever breastfed' rate (80%), and is consistent with breastfeeding rates reported for all women in Monroe County.

The postpartum hospital experience of women in this group was reflective of the Baby Friendly Hospital protocol to the extent that their descriptions are self-reports and were not reviewed against medical records. Their experiences post discharge however, revealed no systematic community referral systems or support structure as would be expected given Step #10 of the BFHI. Three women received phone calls from the hospital to inquire about medical conditions: Participants #7 and #20 – Cesarean sections, and Participant #19 – gestational diabetes. With the exception of the 'warm' line, there was no mention of other hospital generated referrals or community support mechanisms. Participation in the WIC Program was a critical link to the breastfeeding peer counselors and was the only substantive community support. Hospital and home visits, as well as phone calls by peer counselors provided needed moral support, encouragement and practical advice for these women. These attributes of peer counselor support confirm what other studies have reported regarding what low income women value about their peer counselors[23.] Delivery in a BF Hospital with trained and supportive

lactation consultants may have prevented several women from succumbing to the use of infant formula.

Study strengths and limitations

This study sought to investigate the experiences of low income, first time mothers interested in breastfeeding who were scheduled to deliver at a Baby Friendly Hospital. Their accounts were reviewed to assess BFH adherence to protocols, and investigate community support for breastfeeding post discharge. Discussion of breastfeeding experience is complicated by the many interpretations/definitions of "breastfeeding". In conversations with study participants "breastfeeding" was defined as the act of putting infants to the breast – regardless of whether other foods or beverages were offered to the baby. Parsing out the differences between partial, exclusive, mixed feeding was not the focus of study questions and not pursued in every interview. For the purposes of this study mothers were considered breastfeeding if they fed the baby from the breast at least once per day. Quantitative data were based on information provided via interview. No patient records or other primary sources of information were reviewed to verify these data.

The women enrolled in WIC and Healthy Start programs are required to attend a series of educational classes during pregnancy. Thus, the group of women in this study were well informed about breastfeeding and had a variety of sources of breastfeeding information before the baby was born. The requirements of both programs may result in a group of exceptionally compliant women, motivated by tangible program benefits or the information they were receiving. For these reasons this study group may not be fully representative of the experiences of low income women living in Rochester.

A notable strength of this study includes the process whereby the principal investigator explained the study protocol in person with the endorsement of program staff. This face to face interaction allowed an opportunity to establish a sense of comfort if not trust between the investigator and participants prior to the fact finding phone interviews. Efforts to establish a personal but professional relationship may have contributed to more honest and unfiltered conversations. The study was guided by a social ecological model of human behavior, taking into account the birthing environment and community support. Lastly, this study may be the first of its kind to capture the accounts of women delivering in this Baby Friendly Hospital.

CONCLUSION

Many beneficial effects of the BFHI efforts of WHO/UNICEF have been realized internationally. In the context of the United States, approximately 21% of hospitals have implemented the ten steps and associated protocols for BFHI. The presence of lactation consultants was critical for ensuring mothers initiated breastfeeding immediately after birth and remained breastfeeding through hospital discharge. However, previously reported weaknesses in implementing community support as required for BFHI step #10 was confirmed in this study[21, 22]. Post-partum community support was provided by WIC Peer Counselors operating independently of the BF Hospital. Additional efforts to create and sustain support structures which extend beyond the confines of the hospital must be made to fully achieve breastfeeding goals for the nation and are particularly needed by low income women. Such an approach is consistent with a social ecological systems approach in that multilevel environmental supports help facilitate adoption of healthy behaviors.

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APPENDIX 2.1

Interview Instrument I – Prenatal Interview Guide

Breastfeeding plans

How do you intend to feed the baby?

Breastfeeding alone

A combination of formula and breastfeeding

For how long do you intend to breastfeed?

Exclusive

Combination

What breastfeeding orientation/teaching have you received?

Are you scheduled to participate in a breastfeeding class?

How would you rate your preparation for breastfeeding on a scale of 1 – 10, with 10 being completely prepared, and 1 being not at all?

Perception of hospital experience

Tell me about your plans for breastfeeding in the hospital...

How long after the baby is born do you plan to put the baby to the breast?

Do intend to have the baby room-in with you?

Who has influenced your infant feeding decision?

Prompt *Nurse*

Doctor

Lactation consultant

La Leche League

Significant other

Other family member

Anyone else?

Did you feel you have enough help to breastfeed?

What type of assistance do you think you will need?

Prompt *how to hold baby*

When to introduce other foods...

Pumping

What particular guidance have you received from your prenatal providers?

Prompt

Breastfeed whenever my baby wants to nurse

Skin to skin contact immediately after birth

Not to give any other food or drink

Use of pacifier

On what topics would you have liked more information about?

Prompt

Returning to work or school

Baby illnesses

Weaning

Introducing solid foods

Has your healthcare providers given you information about community breastfeeding support resources for ongoing help? What resources -

Prompt

Mothers support group

La Leche

Phone number of LC

Overall how satisfied are you with your breastfeeding information you have so far?

APPENDIX 2.2 Post-Partum Interview Guide

Interview Instrument II – Postpartum Interview Guide

Breastfeeding plans

Prior to giving birth, how did you intend to feed the baby?

Prompt *Breastfeeding alone*

A combination of formula and breastfeeding

Prior to giving birth, for how long did you intend to breastfeed?

Prompt *Exclusive*

Combination

Prior to giving birth, what breastfeeding orientation/teaching did you receive?

Prompt *Putting baby to breast*

Feeding schedule

Pumping

How would you rate your preparation for breastfeeding on a scale of 1 – 10, with 10 being completely prepared, and 1 being not at all?

Perception of hospital experience

Tell me about your breastfeeding experiences in the hospital...

How long after the birth was the baby first put to the breast?

Did your baby room-in with you? What arrangements were made to bring baby to you for feeding?

Did your healthcare providers help you or offer to help you start breastfeeding?

Which hospital staff provided breastfeeding help or assistance?

Prompt *Nurse*

Doctor

Lactation consultant

La Leche League

Significant other

Other family member

Friend

Anyone else?

Did you feel you had enough help with breastfeeding?

Were staff available to you when you needed assistance?

Prompt: *Staff were available 24/7*

Staff were available during the day/night or only at certain times

Staff were not available when I needed help

What type of assistance was provided by staff?

Prompt *I was shown how to breastfeed by baby*

I was encouraged to breastfeed without giving my baby and other foods or liquids, bottles, or pacifiers

Did you feel you had the right kind of assistance?

Did anyone observe you breastfeeding?

What particular guidance do you remember receiving from the hospital staff?

Prompt *Breastfeed whenever my baby wants to nurse*

Skin to skin contact immediately after birth

Not to give any other food or drink

Use of pacifier

On what topics would you have liked more information about?

Prompt *How to manage* r*eturning to work or school*

Baby illnesses

Weaning

Introducing solid foods

Did your healthcare providers give you information about community breastfeeding support resources for ongoing help? What resources -

Prompt *Mothers support group*

La Leche

Phone number of LC

Was a follow up baby visit scheduled before you left the hospital?

Overall how would you rate the time spent with hospital staff?

Overall how satisfied were you with your breastfeeding experience in the hospital?

Post-discharge Support

Since baby was born, has baby needed to see a doctor or other healthcare provider for a problem or illness other than a routine check-up?

Overall, how easy or difficult was it to see a healthcare provider for baby?

If yes, why was it difficult?

Not counting the birth, has baby stayed in a hospital overnight since he was born?

Since being home, who have you turned to for breastfeeding guidance or with questions?

Prompt: Mother, Mother in law

Other family

Friends

Lactation consultant, doctor, nurse

WIC Program

Peer support

Hospital support line

Other

Since being home have you used any of the resources suggested by hospital staff?

Prompt: "Warm line" phone support

WIC Program

Other

What types of breastfeeding issues did you seek assistance for?

Prompt Infant issues – fever, colic, weight gain, fussiness, gas...

Maternal issues – engorgement, pain, fever, depression, let down

Were you able to contact someone when you needed help?

How helpful was the information you received? On a scale of 1 – 10, rate the help from 1 not at all helpful to 10, very helpful.

Would you recommend this resource to other women?

Do you feel that you've had enough help for your breastfeeding concerns?

What additional assistance would be helpful?

What other types of support would you take advantage of if available?

Prompt: *24 hour hotline*

Knowledgeable staff at pediatrician/obgyn office

Peer counselor available by phone

Support group in the neighborhood

If possible, would you prefer assistance in your home, or at some other location?

What other types of breastfeeding issues would you seek assistance for?

Prompt *Infant issues – fever, colic, weight gain, fussiness, gas...etc.*

Maternal issues – engorgement, pain, fever, depression, .etc.

With whom would you feel most comfortable talking about your breastfeeding issues?

Prompt *Are there some issues that you would not raise with peers or in a group?*

Are there some issues you would only raise with a nurse or doctor?

What is your long term breastfeeding goal?

Prompt: *Duration*

Exclusivity

What other suggestions do you have about breastfeeding support for women such as yourself?

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APPENDIX 2.3 Study Participant Descriptions

	Participant	Age	Pre-pregnant BMI	Race/ Ethnicity	Delivery Type	Birth Weight lbs.	Infant	Any BF in hospital	BF at discharge	BF 2nd Interview
HS	2	21	28.3	H	v	7 lbs 6oz	F	✓	✓	✓
HS	3	26	31.1	B	c sec	6lbs 12zo	M	✓	✓	✓
HS	4	24	21.5	B	v	7lbs 4 oz	M	✓	✓	✓
HS	6	21	20	W	v	8lbs 14oz	F	✓	✓	✓
HS	7	20	43.6	B	c sec	8lbs 12oz	F	✓	✓	✓
St M	10	27	23.5	H	x	7lbs 3oz	F	✓	✓	✓
St M	11	20	40.7	H	v	9lbs		✓	✓	✓
St M	13	21	18	W	v	6lbs 10 oz	F	✓	✓	✓
St M	14	23	23.4	W	v	6lbs 14 oz	M	✓	✓	✓
St M	15	22	27.8	H	c sec	8lbs 7oz	M	✓	✓	✓
WR	17	18	29.8	B	v	8lbs 1 oz	M	✓	✓	✓
WR	18	21	52.9	H	v	7lbs 2oz	M	✓	✓	✓
WR	19	20	21.5	H	v	7lbs 4oz	M	✓	✓	✓
WR	20	22	35.9	W	c sec	6lbs 9oz	F	✓	✓	✓
WR	22	19	22.7	W	v	6lbs 11oz	F	✓	✓	✓
WR	28	24	30	B	v	6lbs 11oz	F	✓	✓	✓
WR	26	20	28	B	v	7lbs 1oz	F	✓	✓	✓
WR	27	21	29.3	W	v	7lbs 14oz	M	✓	✓	✓
HS	8	19	40.1	B	v	8lbs 2 oz	M	✓	✓	0
St M	12	20	33.1	B	v	8lbs 12oz	M	✓	✓	0
WR	24	22	30.6	H	v	6lbs 13oz	F	✓	✓	0
WR	29	21	30	H	v	8lbs 3oz	M	✓	✓	0
HS	5	25	33.8	B	c sec	6lbs 3oz	F	✓	0	0
WR	30	22	35.1	B	c sec	7lbs 2oz	F	0	0	0
WR	25	19	34.8	H	v	7lbs 10oz	M	✓	0	0
WR	23	21	31.8	B	v	7lbs 6oz	M	0	0	0
WR	21	18	37.4	B	v	7lbs 11oz	M	✓	0	0
WR	16	19	27	W	v	7lbs 6oz	M	0	0	0
HS	9	21	25.7	B	c sec	8lbs	F	0	0	0
HS	1	28	35.4	B	v	8lbs 14oz	M	0	0	0

CHAPTER 3: PROGRAM INTERVENTIONS TO SUPPORT WOMEN CHOOSING TO BREASTFEED:

EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM

ABSTRACT

Breastfeeding initiation and duration rates among low income women continue to lag behind other groups. As peer support has been a successful strategy for breastfeeding promotion in other low income settings, this study examined breastfeeding initiation and duration among low income prenatal women participating in the Expanded Food and Nutrition Education Program (EFNEP). Breastfeeding outcomes were compared across two treatment protocols (home support and outreach) and usual care. Compared to usual care, the combined treatment arms achieved a significantly higher breastfeeding initiation rate, 42.95% vs 1.54% ($p< 0.0001$). Breastfeeding initiation was not significantly different between the Home support and Outreach groups (74% Home group vs 65% Outreach group, $p=0.58$). Among women in the Home protocol who delivered during the study, self-identified breastfeeding duration goals were exceeded by 200% (5 vs 2.5 months). Among women in the Home protocol who were breastfeeding at enrollment, duration goals were exceeded by a similar margin (6.4 vs 3.8 months). Women in the Outreach group achieved their breastfeeding duration goals. The success of the participants in the Home group underscores the value of home visits for providing breastfeeding support. This protocol was delivered within typical EFNEP program delivery timeframes.

INTRODUCTION

The benefits of breastfeeding are well established. Breastfed infants have fewer clinic visits during the first year of life, fewer reported instances of otitis media, upper respiratory and urinary tract infections and atopic diseases than bottle-fed infants[1]. Breastfeeding provides a protective effect on incidence of dental caries, and development of obesity and diabetes in later life[2]. Evidence that cognitive development is improved among breastfed infants is also emerging[3]. Benefits to breastfeeding women include protection against breast cancer, ovarian cancer and osteoporosis. A quicker return to prenatal weight status has also been reported[4].

Despite these benefits, breastfeeding rates in the US remain below the Healthy People 2020 goals: 81.9% initiation and 25.5% exclusively breastfed to 6 months[5]. Improvements in breastfeeding initiation and duration rates have been realized in the last few years, but initiation and duration rates among low income women continue to lag behind other groups. National efforts to address the needs of low income women have included designated funding for peer support through the Special Supplemental Nutrition Program for Women, Infants and Children (WIC). Peer support has been a successful strategy for breastfeeding promotion in other low income settings[6].

In the peer support model, peer counselors are usually indigenous community members without formal health training. They are recruited from the communities they represent, based on their interest in working on public health issues. Peer counselors have been used to assist in a variety of public health tasks such as basic data collection activities, dissemination of basic health messages, and distribution of medicines[7]. They may work under the supervision of public health professionals, but on a routine basis work independently in the community. Depending on the setting, they may be referred to as community health workers, lay health workers, health aides, and a variety of similar titles. The term peer counselor is used more commonly with breastfeeding interventions and implies some level of training and support, as is the case with the WIC Peer Counselor, and/or a training certificate has been earned based on a

combination of workshop training and experience (Healthy Children's Center for Breastfeeding[8]. Peer breastfeeding counselors have been shown to be uniquely qualified and effective in providing breastfeeding support to high risk, low income women[9].

The Expanded Food and Nutrition Education Program (EFNEP) is a United States Department of Agriculture (USDA) program[10] that provides nutrition education to low-income families. The program is delivered through the Cooperative Extension system. EFNEP lessons are delivered by indigenous paraprofessional educators that live in the communities they serve. In New York State (NYS), these staff, referred to as frontline educators, are employed by county-based Cornell Cooperative Extension associations. They are trained in adult learning principles, basic nutrition concepts, and education strategies and skills.

Program emphasis is on behavior change in the areas of food resource management, diet quality, food safety, nutrition practices and physical activity. Nutrition education is typically provided in a series of six to eight classes delivered once per week; resulting in a six to eight enrollment period. These hands-on interactive sessions include a food activity (food preparation or food tasting) and brief physical activity. When participants are enrolled into the program, they complete entry paper work including a 24-hour dietary recall and a pre-education questionnaire. At the end of the series of lessons, participants complete an exit dietary recall and post education questionnaire. A pre/post comparison of questionnaire responses is used at the state level to document program effectiveness.

Educational sessions occur either individually or in groups. The majority of adults (80%) receive education in group sessions. Groups meet at community sites such as libraries, community centers, or Extension offices. Individual educational sessions occur in the participants' homes. The ability of staff to meet participants in their homes provides an opportunity to deliver education in a comfortable setting while eliminating potential barriers such as transportation, lack of appropriate child care, and time. This

home visit program delivery strategy is unlike most community nutrition education or peer breastfeeding support programs. Specifically, while peer support for breastfeeding is provided by WIC programs, home visits are not universally included in their scope of practice or protocols.

In counties where EFNEP staff have an interest in working with a specific segment of the target audience, whether it be youth, pregnant women, or breastfeeding women, the enrollment of these groups is greater. Typically staff develop an affinity for nutrition content and/or subjects in which they have firsthand knowledge or have experienced themselves. Some staff seek out training in specific areas of interest. In counties with higher enrollment of breastfeeding women, staff had sought and received training, and/or have breastfed themselves. State level nutrition EFNEP leaders surmised that with a more deliberate approach to staff training on breastfeeding support issues, more staff could provide needed support to low income EFNEP women interested in breastfeeding, and improve breastfeeding rates among this population. Given the program flexibility to conduct education in the homes of participants, this program delivery strategy could be emphasized as a means for supporting participants' breastfeeding goals.

NYS EFNEP has a long-standing interest in working with staff to address breastfeeding issues[11]. Previous research has informed the approach described herein for both the breastfeeding program delivery and staff training in NYS. Working with the relatively short program participation time frame (6 – 8 weeks), and the low prevalence of breastfeeding among low income women, the focus of this study was to support pregnant women who expressed a desire to breastfeed, and provide ongoing support to women already breastfeeding. With this approach, staff could direct energy toward willing participants, rather than on convincing participants to try something they were not yet invested in. Staff participation in the breastfeeding support program was voluntary and included a unique opportunity for training and supervisory support that were otherwise not available. These features of the breastfeeding support program address the intrinsic rewards that EFNEP staff value, and in turn reinforce their

commitment to the program[12]. The overall goal of this study was to evaluate the impact of EFNEP staff training and home visits by frontline EFNEP educators on enrollment of pregnant and breastfeeding women and breastfeeding initiation and duration among EFNEP program participants interested in breastfeeding.

Specific Research Questions

1. What is the impact of providing breastfeeding training to NYS EFNEP staff on enrollment of pregnant and breastfeeding women among the population of low-income women served by EFNEP?

   Hypothesis for research question 1: Training staff will lead to greater recruitment of pregnant and breastfeeding women into EFNEP.

2. What is the impact of Home visits compared to Outreach in supporting EFNEP participants reach their breastfeeding goals?

   Hypothesis for Research Question 2: Women receiving in-Home visits by EFNEP peer educators support will be more likely to achieve self- identified breast feeding goals than women receiving education in group settings.

METHODS

Overview of Design

During the 2004 EFNEP program year, one of three treatment protocols was implemented by county nutrition programs: Outreach, Home support, or usual care, described further below. County nutrition program supervisors selected one of the three treatments based on their confidence that their frontline staff could meet the demands of additional training and paperwork required for the treatment arms of the study. Protocols were implemented at the county level; outcome data were collected and

analyzed at the individual level, and compared across the treatment groups. Institutional Review Board approval was granted by Cornell University for this project.

Description of Treatment

Table 3.1 displays Intervention activities by treatment group, number of counties in each treatment and the staff training associated with each treatment.

Table 3.1. Intervention Activities and Staff Training by Treatment Group

Treatment Group	Intervention Activities	Staff Training
Home support (n=9)	Conducted specific recruitment and education of prenatal and breastfeeding women, and routine education for families with young children	Certified Lactation Counselor (CLC) training for educators and supervisors
Outreach (n=12)	Conducted specific recruitment of prenatal and breastfeeding women, and routine education for families with young children	CLC training for educators and supervisors
Usual/Routine care (n=15)	Conducted routine recruitment and education for eligible families with young children	No additional staff training for educators or supervisors

Home Support Group In the nine counties in this group, EFNEP staff were deployed to conduct in-Home, one-on-one prenatal and postpartum breastfeeding education, with an additional goal of visiting every postpartum woman within one week postpartum. Nine counties implemented the Home Support protocol. The goal of Home Support was to provide timely information and support to low-income women who chose to breastfeed. In this protocol, frontline educators who had been trained in breastfeeding support worked with prenatal and postpartum women to help them meet their breastfeeding goals. Timely support was defined as a Home visit in the first week postpartum, or as soon

as possible after birth to provide breastfeeding support. Counties in this group also focused efforts on networking with community partners to increase enrollment of pregnant and breastfeeding women.

Outreach Group Counties in this group focused efforts on networking with community partners such as health care providers serving prenatal women to specifically increase enrollment of women who were pregnant or breastfeeding. Breastfeeding education was provided as appropriate to enrolled women. Home visits were not part of this protocol. Twelve counties implemented this protocol. The goal of the Outreach protocol was to increase the enrollment of pregnant women and breastfeeding women and to provide them with research-based, prenatal and postpartum breastfeeding support and information.

For these two treatment interventions, one staff person in each county was identified as the lead educator for breastfeeding activities; an additional or back-up educator was identified and trained to ensure timely response to breastfeeding women in the event the lead educator was not available for immediate assistance**.** All of the lead and back-up educators and their supervisors, attended a three-day Certified Lactation Counselor (CLC) training[13]. This training provided background and skills to effectively deliver breastfeeding education. The training emphasized practical applications of evidence-based knowledge. Upon completion of the training, all staff received CLC certificates.

A breastfeeding curriculum was developed and piloted in the year prior to the study. This curriculum was then used by the counties in the Outreach and Home treatment arms during the study period. The development process was participatory, involving nutrition educators, CLC trained lactation consultants, and NYS staff. In total, 10 lessons were created: Women's Health, Breastfeeding is the Norm, Breastfeeding Preparation, Positioning for Breastfeeding, Breastfeeding Baby, Pumping and Storing, Confronting Barriers, Breastfeeding in Public, Breastfeeding for Working Mothers, Starting Solid Foods. Each was created with adaptations of the content for delivery to prenatal or postpartum women. Lessons were designed to include adult learning principles, a dialogue approach, and interaction

among participants. Each lesson provides practical, useable information. This breastfeeding curriculum was used by the Outreach and Home support arms during the study period.

Usual Care The remaining 15 counties provided nutrition education and Outreach processes in a manner consistent with usual EFNEP protocols during the study period. They continued to focus on recruiting families with young children (primarily mothers), teaching using curricula that targeted the four key program outcomes: food resource management, nutrition practices, food safety and food security. No specific breastfeeding training was provided to these staff, and no additional Outreach effort to health care providers serving prenatal women was conducted. Staff participated in routine subject matter trainings, program updates and technical assistance offered to all staff during the study year.

Data Collection

All study participants were enrolled into EFNEP according to usual procedures. Each participant completed enrollment paperwork, which included a consent form, a 24-hour dietary recall, demographic information and behavior checklist questions. At graduation or exit from the program, a similar set of forms was completed. Questions regarding participants' thoughts and plans regarding breastfeeding were included in place of the standard behavior checklist questions for women in the Outreach and Home Support protocols. Therefore, the paperwork burden necessary for program enrollment was similar for all three treatment groups.

The specific protocols for the Home (Appendix 3.1) and Outreach (Appendix 3.2) interventions were implemented from October 2003 through September 2004. Data collection continued until December 2004. Protocol and breastfeeding curriculum training was completed in August 2003 for the Outreach and Home support staff and included review of all breastfeeding teaching materials, scope of practice, implementation of the protocols, and data collection methods. Breastfeeding status was

assessed by staff at each contact. Initiation of breastfeeding among the participants that were pregnant when enrolled, subsequently delivered and breastfed was the behavior of interest.

Process Evaluation

Additional contact and tracking forms were developed for the Home Support protocol staff to capture details of Home visits and any other phone or in person contacts. Information that was required included: date, location, topics covered, anticipatory guidance, problems and barriers reported by the participants, and referral information. Additionally, supervisors were required to read and sign off on all contact forms. Periodic phone calls and site visits were conducted by the principal investigator as fidelity checks to ensure adherence to participant education protocols and data collection procedures. An email list was established for both intervention groups so that staff could discuss issues of common concern, and compare solutions to common problems. To ensure timely submission of contact documentation forms and adherence to protocols, technical assistance from the principal investigator was provided via conference calls and onsite visits. Monthly conference calls were conducted with county –based supervisors. Monthly progress reports were reviewed, data submissions were checked and any questions from staff were resolved. Phone calls were made by the principal investigator to a convenience sample of participants who completed the program to informally assess the quality of interactions between staff and participants, and assess participant satisfaction with their experience.

Data Analysis

Enrollment and exit data were electronically submitted from counties to Cornell University using the Nutrition Education Evaluation Reporting System version 5 (NEERS5), the federally required data system in use for EFNEP during the study period. As per the treatment protocols, contact documentation forms were faxed at regular intervals, and at exit all forms were copied and mailed to the principal investigator. Data extracted from contact documentation forms not otherwise available in NEERS5 were

merged for analysis. For the usual care protocol, only electronic data submitted via NEERS5 was available for analysis. For comparison between groups, breastfeeding initiation was defined as the number of enrolled pregnant women who subsequently delivered and initiated breastfeeding. For the two intervention groups these data were extracted from the contact documentation forms; for the usual care group the calculation of breastfeeding initiation was based on their status change from prenatal to breastfeeding. Data analysis was conducted using JMP, version 12. ANOVA comparison of means and Chi-square test of independence were used to test differences between treatment groups. A $p < 0.05$ was set a priori to determine statistical significance.

RESULTS

A total of 2218 women were enrolled into one of the two treatment protocols or were provided usual care (Table 3.2) during the study period. Groups were similar in racial/ethnic composition and household size. Significantly more women initiated breastfeeding in the treatment groups compared to the usual care (42.95% vs 1.54%; $p < .0001$).

Table 3.2. Characteristics of EFNEP Participants Enrolled During Study Period

Characteristic	**Breastfeeding Intervention Groups n=279**	**Usual care n=1945**	**p-value**
	n (%)	**n (%)**	
Pregnant at enrollment	149 (53.4)	1423 (73.3)	**<0.001**
White Black Other	188 (67.8) 33 (11.92) 56 (20.2)	1455 (74.4) 188 (9.7) 302 (15.53)	**0.04**
Household size (Mean, SD)	3.26 (1.50)	3.50 (1.6)	**0.02**
Initiated breastfeeding	64 (42.9)	22 (1.5)	**<0.001**

Research Question 1: Impact of Staff Training on Enrollment

Program enrollment changes during the study year compared to three previous years are displayed in Figure 3.1 and Figure 3.2. The total combined enrollment of pregnant and breastfeeding women increased by 12% relative to the mean enrollment over the previous three years (p=.05) (Figure 3.1). The number of breastfeeding women doubled, with an increase of 101% from previous years (p<0.0001) (Figure 3.2).

Figure 3.1 – NYS EFNEP Enrollment of Pregnant and Breastfeeding Women by Year

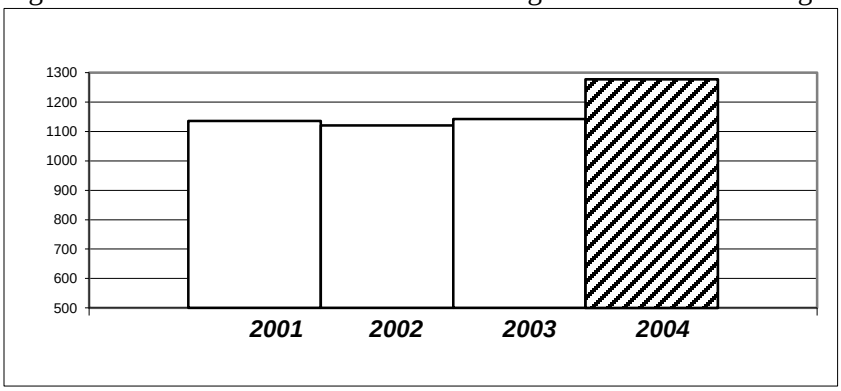
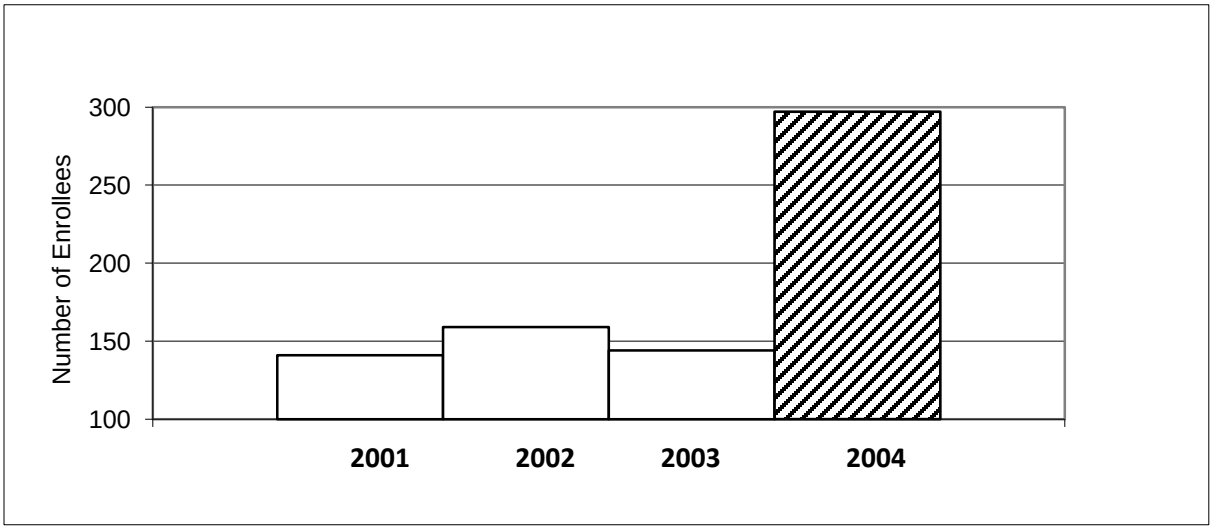


Figure 3.2 – NYS EFNEP Enrollment of Breastfeeding Women by Year



Research Question 2: Impact of Home Support as Compared to Outreach on Breastfeeding

A total of 293 women were enrolled into one of the intervention protocols during the study period. Fourteen were eliminated as not eligible for either protocol or for whom records were unavailable for review leaving a total of 279 in the sample. By the end of the study period, 23 women in the Outreach protocol delivered, 15 (65.2%) initiated breastfeeding. Sixty- six women in the Home support protocol delivered, and 49 (74.2%) initiated breastfeeding (Figure 3). These breastfeeding initiation rates are not significantly different (X^2 = 2.1284, DF=1, p=0.109).

Figure 3.3. Flow Diagram of Pregnant Participants by Intervention Groups

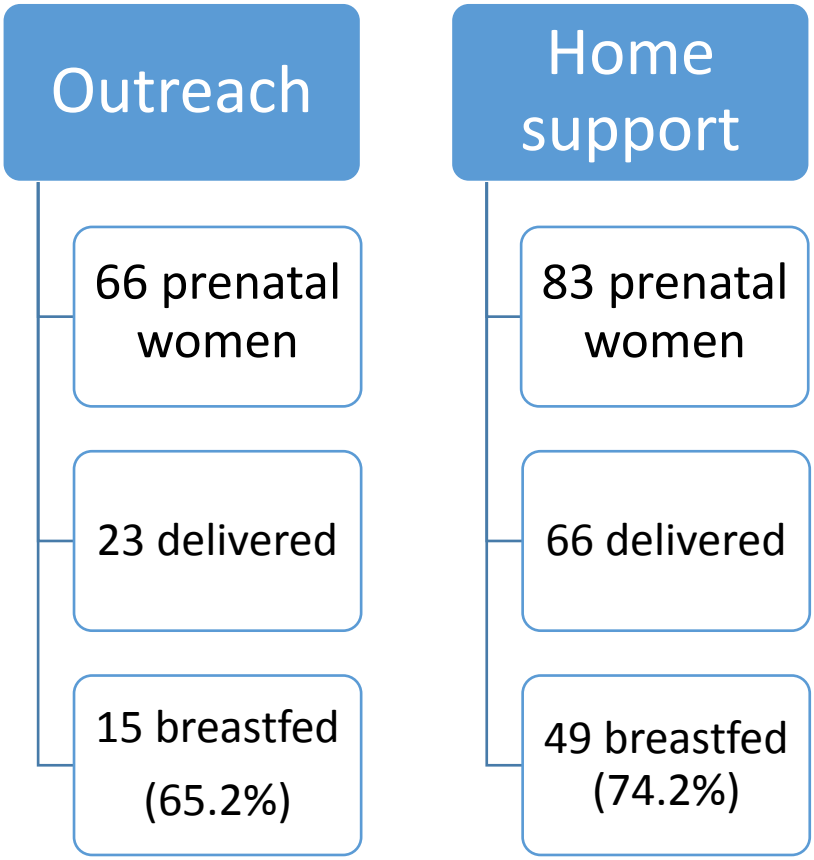


Table 3.3 displays the characteristics of the pregnant women in the two intervention groups. There were no significant differences between the groups by maternal age, race/ethnicity, number of children less than five years of age, or total household size.

Table 3.4 displays characteristics of women who were breastfeeding at enrollment. Among the breastfeeding women, the racial mix was significantly different between groups (p=0.047). The predominant racial/ethnic category "other" is comprised of women from Asian countries enrolled in the NYC program; the majority are Chinese (data not shown).

Table 33. Sociodemographic Characteristics of Pregnant Women by Interventions Group

Characteristic	**Outreach N=66**	**Home Support N=83**	**P value**
	N (%)	N (%)	
Age (Mean, SD)	23.27± 0.7	24.26 ± 0.6	0.31
White Black Other	38 (57.6) 8 (12.1 20 (30.30)	52 (62.2) 17 (20.73) 14 (17.07)	0.102
Children less than 5 in the household(Mean, SD)	0.59±0.09	0.51± 0.08	0.54
Total in the household (Mean, SD)	3.13± 0.17	3.0± 0.15	0.57

Table 3.4 Sociodemographic Characteristics of Women Enrolled Breastfeeding by Intervention

Characteristic	**Outreach** N=23	**Home** N=107	**P value**
	N (%)	N (%)	
Age (Mean, SD)	26.4± 1.4	25.5± 0.65	0.57
White Black Other	13(56.52) 2(8.7) 8(34.78)	86(81.13) 6(5.66) 14(13.20)	0.047

Children less than 5 in the household (Mean, SD)	1.3± 0.15	1.0± 0.07	0.14
Total household (Mean, SD)	3.7± 0.32	3.5± 0.15	0.43

As shown in Table 3.5, among women enrolled during pregnancy that subsequently delivered, both groups received a similar number of contacts and months enrolled in the program. Women in the Outreach protocol were significantly more likely to identify a breastfeeding goal, and as a group their duration goal was almost twice that of the Home group (5.34 vs. 2.85; $p < 0.0001$). The mean duration goal of the Outreach women who delivered was also longer (4.4 vs 2.4 months; $p = 0.007$). Among the prenatal women that delivered during the study, the Home group exceeded their stated breastfeeding duration goal by twofold; (5.0 versus 2.4 months; $p = .0004$). The mean Outreach group duration of 3.3 months versus plan of 4.4 months was not different ($p=0.065$)

As shown in Table 3.6, among women enrolled that were already breastfeeding, the average number of lessons was greater among the Outreach group (7 vs 4.5; $p<0.001$). There were no differences in the proportion of women with a breastfeeding goal. The Outreach group indicated a significantly longer duration goal (8.6 months vs 3.8 months; $p<0.0001$). The Home group exceeded their breastfeeding goals (6.4 vs 3.8, $p<0.0001$), the Outreach group effectively met their goal (8.7 vs 8.6 months).

Table 3.5 - Breastfeeding Plans and Outcomes for women recruited during pregnancy

Characteristic	**Outreach** N=66	**Home Support** N=83	**P Value**
	N (%)	N (%)	
Number of lessons (Mean, SD)	7.3 ± 0.50	6.8 ± 0.45	0.43
Months in program (Mean, SD)	5.18 ± 0.43	5.6 ± 0.38	0.40
Identified a BF Duration Goal at Enrollment	65 (100)	41(87.3)	0.001
Months planned to Breastfeed (Mean, SD)	5.34 ± 0.48	2.85 ± 0.39	<0.0001
Women who Delivered	N=23	N= 66	
BF Initiated BF not Initiated	15 (65.21) 8 (34.78)	49 (74.24) 17 (25.75)	0.58
Months planned to Breastfeed	4.4 ± 0.6357	2.4 ± 0.3356	0.007
BF Duration	3.27 ± 0.9264	5.03 ± 0.5462	0.11

Table 3.6 Breastfeeding Plans and Outcomes for women enrolled already breastfeeding

Characteristic	**Outreach N=23**	**Home N=107**	**P Value**
Number of lessons (Mean, SD)	7 ± 0.66	4.5 ± 0.30	0.001
Months in program (Mean, SD)	6.26 ± 0.75	4.4 ± 0.35	0.03
Identified a BF Duration Goal at Enrollment (N, %)	21, 95.45	92, 100	0.06
Months planned to Breastfeed (Mean, SD)	8.67 ± 1.08	3.82 ± 0.49	<0.0001
Breastfeeding Duration (Mean, SD)	8.75 ± 1.0749	6.4 ± 0.4984	0.053

The timing of the introduction of infant cereal and infant formula was also tracked for the two treatment arms. Neither group on average, waited even two weeks before introducing formula. Cereal was introduced between the second and third week. Given the early introduction of cereal and formula, exclusive breastfeeding was virtually nonexistent (data not shown).

DISCUSSION

With the emphasis on recruiting prenatal and breastfeeding women, a significant increase in their enrollment during the study period over previous years was achieved. The level of increase was unexpected. No data on previous targeted recruitment or Outreach strategies of this nature have been reported for NYS EFNEP. There appears to be a robust and previously untapped pool of expectant mothers who could benefit from and are interested in EFNEP programming on breastfeeding.

Compared to usual care, the combined treatment arms achieved a significantly higher breastfeeding initiation rate, 42.95% vs 1.54% ($p< 0.0001$). CLC training provided to staff in the treatment arms was a distinguishing feature of their staff development during the study period. Training reinforced by a closely monitored implementation protocol resulted in a substantially improved breastfeeding initiation rate. This is in keeping with evidence from other settings that staff training has been shown to be effective in achieving program outputs[14].

Related to the second research question regarding support to achieve a personal breastfeeding goal, the pregnant women in the Home group that delivered exceeded their prenatal breastfeeding goals. Among this group the mean goal was 2.4 months, however, as a group they breastfed for an average of 5.0 months. The pregnant women in the Outreach group that delivered set a breastfeeding goal of 4.4 months, and breastfed for 3.3 months. Among the women who were breastfeeding at enrollment, the Home group exceeded their goal of 3.8 months, and achieved a duration of 6.4 months. The Outreach group goal was 8.6 months and they achieved a duration of 8.75 months. The Home visit protocol was successful in helping women exceed their breastfeeding goals.

Breastfeeding initiation was not significantly different between the Home support and Outreach groups (74% in the Home group vs 65% in the Outreach group, p=0.58). The initiation rate for the Home group is similar to the national average of 74% (CDC, 2004)[15].

Table 3.7 Breastfeeding by Home Visits among women enrolled in the Home Group during Pregnancy

	Breastfed					
Home visit	**Y**	**%**	**N**	**%**	Total	P value
Y	45	89.4	4	8.6	49	
N	4	23.53	13	76.47	17	<0.001
Total	49		17		66	

The type of program contacts were significantly different by treatment protocol. The Home protocol emphasized the need for a Home visit immediately postpartum. Pregnant women were enrolled closer to their delivery dates and were visited very soon after hospital discharge, so overall they received fewer contacts. Women in the Outreach protocol were enrolled earlier in pregnancy, and received more educational contacts and thus received greater exposure to the EFNEP curriculum. While the supportive Home visit was a key feature of this protocol, recruitment of all participants has historically been a chronic challenge. That this specific group of women could be recruited in a timely fashion and seen according to the protocol timeline indicates significant achievements in networking with partner agencies to secure timely referrals, and/or as previously indicated, there exists a large untapped pool of pregnant women interested in receiving EFNEP program services, specifically breastfeeding support.

Self-efficacy is a crucial factor for breastfeeding success[16]; goal setting is a concrete step toward successful initiation. Lack of a goal, inability to articulate a target or setting a short duration goal would not be indicative of success. However, the Home group not only met their conservative goals, but maintained breastfeeding well beyond their targets. The Home group exceeded their duration goals by

200% (5 vs 2.5 months). Among the women breastfeeding at enrollment, the Home group again exceeded their duration goals by a similar margin (6.4 vs 3.8 months). The success of the participants in the Home group in achieving a duration of breastfeeding beyond their stated goal underscores the value of Home support provided by peer educators. This advantage of the Home group was achieved with fewer educational contacts and in a shorter time frame as compared to the Outreach group. Further analysis of this program delivery strategy is warranted as staff time and program resources become challenged. If breastfeeding is a priority program outcome, the most efficient and effective educational strategies should be implemented.

Because breastfeeding is a learned skill, the experience of primiparous women in both protocols was further analyzed. There was no difference between intervention groups in the proportion of primiparous women, the proportion that delivered during the study period, or their breastfeeding initiation rate (data not shown).

It is not at all clear why the Outreach group set goals that were so much more ambitious than the Home group goals, or why such a large proportion of the Home group did not have a breastfeeding goal at enrollment. Maternal age, number of children less than five years of age and the number of people in the household were similar for both groups. Breastfeeding plans and duration goals were discussed at the first contact. One possible explanation for the more ambitious goals could be that prenatal women in the Outreach group were enrolled earlier in their pregnancies and may have been overly optimistic or enthusiastic about breastfeeding. Women in the Home protocol were enrolled much closer to their due dates; possibly the challenges of caring for a newborn became more daunting as they approached delivery and therefore were more conservative in their goal setting.

The lack of any evidence of exclusive breastfeeding among this population is in contrast to other studies that have reported high rates of exclusive breastfeeding among high risk, low-income Hispanic,

Chinese, and recently immigrated women. Further investigation on the exclusivity of breastfeeding is warranted as mixed feeding may interfere with the benefits of breastmilk. Emphasis on exclusive breastfeeding, and delayed introduction of cereal and formula are areas where prenatal education and postpartum support may be targeted to further maximize the benefits of breastfeeding. Additional investigation of reasons for early introduction of infant formula is needed.

Limitations of the study

Counties and staff volunteered to participate in this study, and self-selected which protocol they would implement. There was no randomization of counties to an intervention, or matching of counties by any demographic or program criteria. Randomization of counties to a protocol was not feasible given the vast differences in frontline staff and managers' tenure, experience, training, and confidence levels. Randomization to eliminate bias across all these factors was not possible. Rather, managers selected a protocol based on their assessment of whether staff could be successful in completing required tasks. This selection bias with related differences in staff skills and program management capacity could affect outcomes. In addition, the strength of existing partner agency relationships, skills and interest of mentors, and staff experience with breastfeeding could influence the breastfeeding outcomes of participants.

Breastfeeding initiation and duration data were self-reported. No measure of breastfeeding exclusivity was made; therefore, *any breastfeeding* would be counted the same regardless of exclusivity and frequency. Availability of other maternal or prenatal service or support programs varies across the state. Data on women participating in La Leche League clubs or other breastfeeding groups was not captured. Lastly, the study may have yielded additional useful data if extended beyond one year.

CONCLUSIONS and IMPLICATIONS

This study resulted in significant findings regarding the impact of staff training and programing efforts to support EFNEP participants in achieving their breastfeeding goals. In the year after staff training was completed, the combined enrollment of breastfeeding and prenatal women increased by 12% as compared to previous years. The enrollment of breastfeeding women increased significantly, reinforcing the notion that a large untapped pool of low income women are interested in breastfeeding support and nutrition education. The success realized in reaching large numbers of pregnant and breastfeeding women should be explored further to develop model protocols for future recruiting of this important target audience.

Women receiving Home visits for breastfeeding support were significantly more likely to exceed their breastfeeding duration goals compared to women receiving typical EFNEP group education. This outcome was accomplished within the minimum number of contacts required by EFNEP. Facilitating behavior change to improve the health and nutritional status of low income participants is critical component of the EFNEP program. Further examination of this support strategy should be explored to identify critical components for assisting low income mothers to achieve their breastfeeding goals.

For women in the Home group, both those entering the program as breastfeeding and those who initiated breastfeeding after delivery, had breastfeeding duration goals was less than outreach group women in the same situation. However, the duration achieved by the end of the data collection period for women receiving home visits was double their original goal. The value of the home visit in helping new mothers exceed their breastfeeding goals is the distinguishing feature of the experience of the two groups. Minimal training costs (3 staff days, travel, room and board, plus consultant fees) were provided to ensure staff had the necessary foundation to provide breastfeeding education and support. Training expenses are a necessary component of the EFNEP budget, and an ongoing effort of senior staff to ensure peer educators are up to speed on all aspects of nutrition education. Given the results realized

here, additional exploration of the cost/benefit and improved quality of life for participants should to be explored. Where possible, home visits should be encouraged to support low income EFNEP women achieve their breastfeeding goals.

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APPENDIX 3.1 IN-HOME BREASTFEEDING SUPPORT PROGRAM

Table of Contents

Data Screens	**Hand numbered**

See Also

Separate ERS Data Entry Booklet	**In the packet**

Program Description

OBJECTIVES

The goal of the In-Home Breastfeeding Support Program is to provide timely information and support to low-income women who have chosen to breastfeed. In this program, Cornell Cooperative Extension's nutrition paraprofessionals who have been trained in breastfeeding support and promotion will work with women who are eligible for the Expanded Food and Nutrition Education Program (EFNEP) or the Food Stamp Nutrition Education (FSNE), helping them to meet their breastfeeding goals. These staff members, known as Breastfeeding Educators (BE), will be respectful of: the decisions of their clients; the confidentiality of what they observe or hear in the course of their work with clients; and the boundaries of their roles as Breastfeeding Educators. Their most important objective is the well-being of the infant and mother and they will be skilled at making referrals whenever concerns about the welfare of either member of the breastfeeding pair arise. Their concern for the well-being of mother and infant will include household food security as well as other nutrition related topics.

COLLABORATIONS

In-home education to low income women is one of the standard education delivery methods for both EFNEP and FSNE nutrition staff of Cornell Cooperative Extension (CCE). However, the In-Home Breastfeeding Support Program is based on the collaboration of three major organizations: the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); the local hospital providing maternal and child care; and the County CCE Association. Other services and organizations which are concerned with breastfeeding are also welcome as collaborators. WIC provides referrals to the program, facilitates access to pregnant women by the BE, and may involve pregnant participants in breastfeeding classes provided by CCE. The local hospital will permit the BE to collaborate closely with the hospital discharge planner to facilitate early contact with newly delivered mothers and recruitment into the program. Alternatively, in cases where the hospital is located within the county served by the local CCE association, the hospital may provide the BE with the clearances and identification necessary to visit newly delivered mothers and to enroll them into the In-Home Breastfeeding Support Program. The hospital may also permit her to provide information about breastfeeding to mothers while they are still in the hospital. Lactation consultants in WIC, in the hospitals, or in other organizations will provide professional mentoring to the Breastfeeding Educators' practice. Details of the relationships between CCE staff and both WIC and hospitals will be defined in memoranda of understanding.

In order to ensure the reliability of support to breastfeeding mothers, each BE will have a designated back-up who will be a paraprofessional trained for breastfeeding support, but will have other primary duties. During periods of heavy case-load, or when the primary BE is away from work, the back-up paraprofessional will

prioritize breastfeeding support over her other duties. The primary BE will keep her back-up informed about participants.

ROLES OF BREASTFEEDING EDUCATORS

In initiating contact with women, the BE will try to assure that the grounds for a timely home visit are established. The BE may conduct prenatal breastfeeding promotion classes which introduce the benefits of breastfeeding, basic breastfeeding skills, and other information about infant feeding. She will follow up with class members, answering questions about breastfeeding and possibly recruiting women for the In-home Support Program. Through her collaboration with local maternity hospitals, she will visit newly delivered low-income women who had expressed interest in breastfeeding support as well as recruit women she had not previously contacted. She will schedule in-home visits with those interested in the program. Depending on the nature of her collaboration with the hospital, she may also provide information to assist the breastfeeding mother in the hospital.

The BE will visit participating mothers in their homes within 72 hours of discharge from the hospital. She will provide encouragement, anticipatory guidance, information about techniques, and if necessary, referrals to professional assistance. The BE will engage in regular visits and pro-active follow-up for as long as the mother would like. In addition, the Educator will be available to the breastfeeding mother by phone or pager, during office hours, until the infant is weaned.

Detailed documentation of each visit and the progress of mother and infant will be kept by the breastfeeding support paraprofessional. These records, called Contact Documentation, will replace and differ from progression records normally kept by EFNEP and FSNE staff. They will include issues raised by the mother; information gathered by the BE through observation and conversation; information given by her to the mother, including information about referrals; and follow-up plans. These notes will serve as a guide to any other staff who may take up the case, thus contributing to seamless support. They will also serve as records of the practice of the breastfeeding paraprofessionals. Contact Documentation will be kept in the CCE office under normal protocols for confidentiality and storage. Other records to be kept by the BE are the Entry Information Form, the Postnatal Information Form, and the Feeding Update Chart for recording changes in an infant's diet.

These records will provide part of the data that will be used to evaluate the In-Home Support Program. Staff will also give direct feedback about the program to Cornell through periodic interviews and maintaining frequent contact with the breastfeeding project coordinator. In addition, staff will help researchers from Cornell make phone contact with collaborators and participants to ask about their experiences with the program.

Breastfeeding Educators are distinguished from other nutrition paraprofessionals in the following ways: They prioritize breastfeeding education and support over other duties, they have received specialized training for their roles in breastfeeding support; they work in collaboration with local maternity hospitals and with WIC; records of their practice are periodically reviewed by lactation professionals, who often will not be staff of CCE.

Breastfeeding Educators recognize that health care professionals are ultimately responsible for the care of mothers and infants. They will not attempt to diagnose a condition, weigh an infant, or prescribe treatments. In rare instances where touching mother or infant might be helpful, they will ask permission to touch or hold.

TRAINING AND SUPERVISION

Cornell University's Division of Nutritional Sciences will ensure that training is provided to the Breastfeeding Educators and to their CCE supervisors. This training will include evidence- based information about breastfeeding, procedures for collecting information about the breastfeeding situation, and techniques for providing information to mothers and other family members. In addition, training about the protocols for breastfeeding support will be provided.

Various aspects of the BE's work will be observed by the supervising nutritionist several times a year. Case records kept by the BE will be reviewed weekly or more often by the supervising nutritionist, and monthly or as problems arise, by the collaborating lactation consultant who will serve as the mentor. Where there is room for improvement, on-the-job training, or formal retraining will be done.

Scope of Practice in Breastfeeding Education

The Educator Role

Emphasis on Educating

The Educator working in the In-Home Breastfeeding Support Program has a wonderful opportunity to give mothers the information and support they need, when they need it, and in their homes. She may be the first source of breastfeeding assistance low-income women seek.

The Breastfeeding Educator (BE) working for CCE is very different from most other staff who work to help breastfeeding mothers. Whatever her initial background, in the BE role, she is not a medical staff who can diagnose or prescribe. Nor is she a counselor who can advise. Her training and experience will give her a framework for thinking about the breastfeeding mother and infant and their progress. She will be able to provide information that will foster that progress. She will be able to recognize a possible problem situation and to provide information about approaches to dealing with it. One such approach is for the mother to seek alternative sources of appropriate assistance. Indeed, the only "advice" or "recommendation" that should be given as such should be referrals to medical providers. Other responses to mothers' needs should take the form of "information" or "education."

The distinction between *diagnosing* and *considering or assessing* is the difference between *coming to a conclusion* and *thinking about the possibilities*. If a BE only thinks about the possibilities, she is not likely to make the mistake of diagnosing. However, even when she only thinks about the possibilities in a situation, there are fine lines between advising or recommending, and giving information. Here are some other words for *give information*: educate, teach, clarify, familiarize, inform, share information. Breastfeeding educators can ask themselves if what they are about to do is simply educate, and they can avoid overstepping the role. Terms such as these should guide our practice and be used in written documents such as referrals and contact documentation records.

Sample Phrases for Educating and Referring

"Fullness of the breast is very common a few days after delivery. One way of relieving the fullness is to….. Another method that many mothers find useful is……"

"Now, we have talked about some ways of correcting your nipple pain. Sometimes when there is nipple pain, the baby may not be getting as much to eat as we would wish. I recommend that you to take him to ____ for a weight check. You might mention to the doctor that you were having nipple pain, but that it is now corrected. Meanwhile, a way that mothers can check whether the baby is getting enough is to keep track of feedings and diapers…."

"Did you know that babies get to taste the flavors of what their mothers eat?"

"The Institute of Medicine suggests that women who avoid milk can still get enough calcium if they eat foods such as. . ."

Observing

Another implication of the non-medical role of the breastfeeding educator is that she cannot assume that mothers will be comfortable having her observe them breastfeeding, or looking at their breasts. It is always appropriate to ask permission to observe. If this permission is not freely given, one should try to obtain the needed information through questioning and the use of props. Referral to medical providers may be necessary.

Touching

It is sometimes helpful to hold the infant and observe skin and eye color, muscle tone, moistness of the mouth, and skin condition. Permission should be given for any touching of the infant. It should not be necessary to touch the mother, however. Props can be used to demonstrate any positions or techniques that might be helpful.

Evidence-Based Practice

There are many sources of ideas and information about breastfeeding. Some of these include the BE's own personal experience, oral traditions from elders, magazine articles, and websites. However, the credibility of the In-Home Support Program and the welfare of the infant and mother enrolled in the program depend on the use of scientifically sound research findings as the basis for information shared with mothers.

Focus on Individual Goals

The purpose of the In-Home Support Program is to help mothers achieve their own breastfeeding goals. A mother's goal may differ widely from the Surgeon General's recommendation of exclusive breastfeeding for 6 months. Even so, the individual participant's goal should be respected as the tentative target for education given to that mother. There are many possible reasons for a mother's goals to change. If a mother chooses to stop breastfeeding earlier than planned, the educator should help her celebrate her successes and the benefits she has given her baby.

Confidentiality

Information provided by the mother, her household and family members, or her health care providers must remain confidential. Likewise, information gained by observation in interactions with the mother is confidential. This confidentiality must be explained in the consent form which the mother signs. In any circumstances when the mother or infant would benefit from sharing information with health providers or other agencies, separate signed permission must be given by the mother. Such circumstances include referrals.

Conflict of Interest

In cases where products such as pumps may be of use, the educator should provide information about the pros, cons, and methods of using the various options so that the mother can decide what is best for her. The educator should not be the provider of these products and should not profit by recommending them.

Participant Pathways and BE Procedures

This section will address: Routes through with participants may enter the In-Home Support Program; Procedures for enrolling participants from various sources and among programs; Length of enrollment; Completion of program.

I. Routes for Enrollment of In-Home Breastfeeding Support Participants

A. Participant is recruited directly into the In-Home Breastfeeding Support Program.

B. Participant begins involvement as a traditional education client and transitions into the In-Home Breastfeeding Support Program.

C. Participant begins involvement in the In-Home Breastfeeding Support Program and transitions into traditional programming.

A. Direct In-Home Breastfeeding Support Recruitment and Enrollment Only

1. Participant is recruited, from an external source, into the project, prior to delivery, and expresses either a desire to breastfeed or is undecided on her feeding option.
2. Participant is recruited upon delivery, such as through a hospital referral, and expresses a desire to breastfeed.
3. Participant is recruited shortly after birth and is currently breastfeeding or is interested in breastfeeding.
4. Note: Any past participant who exited during or before FFY03 (October 1, 2002 – September 30, 2003) and returns to FNEC due to pregnancy and the desire/willingness to breastfeed may be recruited directly into the In-Home Breastfeeding Support Program. Her ID # and other information are no longer in the ERS and she would be treated as a Direct In-Home Breastfeeding Support recruit.

B. Currently or Recently Involved in Traditional Programming – Transitions into In-Home Breastfeeding Program

1. *Current Participant:* Participant is enrolled in traditional programming, positive pregnancy status is learned by CCE staff during current enrollment, participant is told of project or indicates a desire/willingness to breastfeed. The participant can be transitioned into the In-Home Breastfeeding Support Program. (Id# in ERS, still active, with some lessons already recorded.)
2. *Recently Exited Participant:* Past participant, exited during FFY04 (October 1, 2003 – September 30, 2004) returns to program due to pregnancy and desire/willingness to breastfeed, is recruited into the In-Home Breastfeeding Support Program. (Id# still in ERS, but exited as graduated or terminated with some lessons already recorded.)

C. Involved in In-Home Breastfeeding Program– Transitions into Traditional Programming

1. Participant is enrolled in In-Home Breastfeeding Support Project and then stops breastfeeding or decides prior to birth not to breastfeed, but wishes to continue to participate in nutrition education lessons.

II. Procedures for Enrolling Participants from Various Sources

A. Direct In-Home Breastfeeding Support Recruitment and Enrollment Only

1. Explain program/services to participant (potential participant)
2. Secure Informed Consent from participant to collect/use data for evaluation (page 7)
3. Complete Entry Paperwork (page 8)
4. Provide program/services until such a time that the participant ceases breastfeeding or no longer needs program support, collecting data and documenting contacts as appropriate for program. In-between or mid-point data is not necessary, not collected.
5. Secure Exit Paperwork (through interview)
    a. Exit paperwork may be secured when;
        i. a participant successfully completes the program, or
        ii. a participant transitions out of the program, no longer breastfeeding, no longer needs support.

B. Currently or Recently Involved in Traditional Programming – Transitions into In-Home Support Program

1. Participant can complete the series of lessons in which she is currently engaged OR can immediately transition into the In-Home Breastfeeding Support program.
    a. Regardless if she continues with the current sessions or not, steps 2 – 7 outlined below, should be completed as soon as possible.
        i. If continuing in traditional lessons, the traditional exit information does not need to be completed on this individual. However, if it is completed, *see Procedure – Type 3 – Exited Participant*
2. Explain program/services to participant
3. Secure In-Home Breastfeeding Support Informed Consent from participant to collect/use data for evaluation. Note this document, while similar to the document secure when entering traditional programming, is not the same. Both documents will need to be maintained for this participant.
4. Complete the In-Home Breastfeeding Support Entry Paperwork (through interview)
5. Perform data entry into ERS – See Performing Data Entry for the In-Home Support Breastfeeding Program – Transitional Participants.
6. Provide program/services until the time participant ceases breastfeeding or no longer needs program support, collecting data and documenting contacts as appropriate for program. No In-between data collection.
7. Secure In-Home Breastfeeding Support Exit Paperwork.

C. Involved in In-Home Breastfeeding Program– Transitions into Traditional Programming

1. At any point, prior to successful completion of the program (defined above in In-Home Breastfeeding Support Recruitment and Enrollment Only), the participant may decide that she no longer wishes to participate (or CCE staff may decide that she is not longer appropriate to participate) in the In-Home

Breastfeeding Support Program. The participant may transition into traditional learning, if she wishes. Reasons she may discontinue with the In-Home Breastfeeding Support Program are she;

a. stopped breastfeeding,
b. chose not to breastfeed after the birth of the child, or
c. the services did not suite her needs/style.

2. Secure In-Home Breastfeeding Support Exit Paperwork
3. Perform data entry into ERS - See Performing Data Entry for the In-Home Support Breastfeeding Program – Transitional Participants.
4. Work with and conclude the participant as you would with all other traditional program participants.

III. Length of Enrollment/Number of lessons

Enrollment in this program may be one-week to 18 months or longer, with contacts/lessons ranging from very few to well over 12. As these participants are enrolled in a separate program, they will not negatively reflect on any ERS reports. Remember, however, that the pilot program ends on or about the last day of September 2004, with counties having the ability to wrap-up with participants and securing remaining data pieces through approximately mid-December 2004.

Please note that in-between behavior checklist data will not be collected for these participants. Instead, ongoing progress will be evaluated through the Contact Documentation Forms.

IV. Successful Completion of In-Home Breastfeeding Support Program

1. ***Successful Completion*** of the In-Home Breastfeeding Support Program occurs when the participant reaches or exceeds her breastfeeding goal and/or is well established with breastfeeding and no longer needs program support. These situations would be shown on the Contact Documentation forms. Input of Exit Perinatal information into the ERS system is neither a "graduation" nor a "termination," as may be considered in traditional programming. Exit Codes, already existing in the ERS system Perinatal Program are;
    a. A – Infant self-weaned
    b. B – Sore nipples/physical discomfort
    c. C – Breast infection or other illness
    d. D – Inadequate milk supply
    e. E – "bad" milk
    f. F – Returning to school and/or work
    g. G – Too demanding
    h. H – Embarrassment
    i. I – Infant was sick or hospitalized
    j. J – Mother didn't like doing it
    k. K – Mother breastfeed as long as she intended
    l. L – Inability of mother and child to successfully connect
    m. X - Other

    These codes are system set and not indicative of "graduation" or "termination" but descriptions of possible reasons mother's choose to cease nursing. The choice selected will be based on the data collected and recorded onto the Contact Documentation Form. Hopefully, code K would be frequently used in this program as many mothers met their goals, or code X would be used to indicate mothers continuing to breastfeed without needing further BE support.

2. Entering Exit Codes into the Adult Screen are as in regular programming, except the participant's "exit reason" is in no way reflected in the EFNEP or FSNEP evaluation of program outcomes, such as case load, graduation percentage, cost per graduate, etc. To ensure this, the staff hours, as indicated at the header, devoted to this program must be recorded under Non-EFNEP.

3. Given the factors outlined above, CCE staff are asked to assess, for the input of Exit Code on the Adult Screen, if the participant "graduated – met her breastfeeding goal" or "terminated - did not complete the expectations of the program, most specifically was lost to follow up and collection of the exit paperwork." *Remember, these participants are not calculated into any assessment of graduation/termination and should be considered independent for this assessment*.

Program Flow – Chart for Data

*(In the In-Home Support Program, new data collection steps **replace** the routine processes. To know what processes to follow when participants are transitioning between programs, please see the last section of these protocols.)*

ENROLLMENT	*Routine process*	*In Home Support*	
	Consent form	Consent form ® *	
	Enrollment form	Enrollment form®	
	Checklist questions	Breastfeeding checklist questions ®	
	Dietary Recall		
Action	ERS input	ERS Input	
		Copy to Campus	

ONGOING EDUCATION			
	Diagnostic printout		
	Progression records	Contact Documentation Form ® Postnatal Information®	

		Feeding Update Chart ®	
	Lesson plans	Lesson Plans	
	Handouts	Handouts	
Action	File with participant record	File with participant record	
		Monthly copy to campus	

EXIT			
	Exit Form	Exit Form®	
	Checklist questions	Breastfeeding checklist questions®	
	Dietary Recall		
Action	ERS input	ERS input	
		Copy to campus	

*® = newly developed form

Consent for Food and Nutrition Education

Welcome! We are happy to be able to provide you with information to help you and your baby breastfeed in comfort. What information we provide will depend a lot on questions you have about meeting your own breastfeeding goals. It may include:

- The advantages of breastfeeding
- What to expect about your milk supply
- How to hold your baby for comfortable breastfeeding
- How to help your baby latch onto the breast
- How to know if your baby is getting enough to eat
- Where to find additional information and help.

Your participation in this program is voluntary and you may stop participating at any time.

We will ask you for information about you and your family. You can still participate even if you choose not to share this information. However, the information will help us fit the program to meet your needs. We will ask you for information when you begin the program and when you end the program. In addition, as we go along, you will be asked some questions about how the breastfeeding is going. Some of the questions we ask may be by phone.

We may contact you after the program ends. If we do, we will ask questions about how you and the baby are doing and how the program affected you and your family. This may also be done by phone.

We do not anticipate any risks for you participating in this program, other than those encountered in day-to-day life. The benefit of participating is the information you will gain about breastfeeding. The information you give us will be used to improve our services to you or other mothers caring for infants in the future.

We will put your answers with answers we collect from women across New York State. This will allow us to see if the program is helpful and how to make it better. Reports about this program will also help others plan Breastfeeding Support programs.

Any information you give will be confidential. Only staff that work with the Nutrition Program in this county and at Cornell University will ask you questions or see your name. We will keep the forms in a locked cabinet. In 6 years we will destroy the forms. Your name will not appear on any reports about this program.

We encourage you to ask questions about any part of this program that may not be clear to you. The Breastfeeding Educator may be able to answer your questions. If not, you may seek more information from: Patricia Ladipo, Cornell University, Ithaca NY 14853, 607-255-7715.

I understand the above statement and agree to participate in the program.

_____ _____

Signature **Date**

This consent form was approved by the University Committee on Human Subjects on 8/11/03.

Entry Information *[To be collected by interview]*

Date: _____

ERS Adult ID: _____

Name: _____

Address: _____

City: _____**New York Zip:** _____

Phone number: _____

Age: _____

Are you pregnant? ___Yes ___No **IF Yes, Due date _____**

Are you breastfeeding? ___Yes ___No

What is your Race or Ethnicity?

_____ White (non-Hispanic) _____ Hispanic

_____ Black (non-Hispanic) _____ Asian or Pacific Islander

_____ American Indian/Alaska Native

Where do you live? _____Farm _____Small Town

_____Large Town or Small City _____Suburbs of Large City

_____In a Large City

Programs that you and your family participate in?

_____ WIC/CSF [*Ask woman:* Are YOU currently enrolled in WIC? ____]

_____ Food Stamps

_____ Head Start

_____ Emergency Feeding Sites

_____ Senior Feeding Sites

_____ CAP/Transitional Services

_____ Food Distribution Program on Indian Reservation (FDPIR)

_____ Emergency Food Assistance Program (TEFAP)

_____ Child Nutrition (School lunch/breakfast)

_____ Temporary Assistance to Needy Families (TANF)

_____ Other:_____

Entry Only

Approximate household income per month?

_____$ 0 to $ 500
_____$ 501 to $1,000
_____$1,001 to $1,500
_____$1,501 to $2,000
_____$2,000 to $2,500
_____over $2,501

How did you learn about this program?

_____Self ____Family/Friend ____Agency sent you ____Other:_____

What is the highest grade you have completed?

_____ 8th grade or less
_____ 9th - 11th grade
_____ 12th grade or GED
_____ Some College
_____ 2 Yr College Graduate
_____ 4 Yr College Graduate
_____ Post Graduate

(Note: Information in boxes cannot be entered into the ERS.)

[This is about live children only.]

Previous children born to mother: Age _____ _____ _____ _____ _____ Were any ever breastfed? [*If yes, Please circle the age of the breastfed child(ren*] What is the longest you ever breastfed? _____

Do you have children living with you? ___Yes ___No

If Yes, what are their ages? _____ _____ _____ _____ _____ _____ _____ _____

How many adults live with you? _____

Is anyone helping with this baby? _____

If this is a prenatal or perinatal mother, ask

What are your thoughts about feeding your baby?

Instructions to interviewer: Please record what the mother said in the space provided, listing her ideas and concerns:

_____
_____
_____
_____

Instructions to interviewer: Now, based on what you heard, please summarize by checking the category of response that you think is the closest to the mother's decision.

Enter this category into the ERS.

Categories:

Pro-Breastfeeding _____

Pro-Formula feeding _____

Undecided _____

Other _____

For mothers who definitely want to breastfeed, ask:

Have you thought about how long you might want to breastfeed? *YES* or *NO*

What is your breastfeeding goal: ___ <4wks ___ 4-7 wks ___ 8-11 wks

___ 12-15 wks ___ 16+ wks ___No Goal

We are asked to remind everyone to be sure to be seeing your healthcare provider (and your baby's healthcare provider) regularly and to be sure to ask about HIV testing if you have not already done so. Testing for HIV is important for your health and your baby's health. Breastfeeding is not recommended for women who have HIV.

Staff Name: _____ **Instruction or Lesson Type:**

____Group ____Individual ____Both

Subgroups: ____EFNEP ____FSNE ____Sample (FMNP) ____In-Home Breastfeeding Support

____Enhanced Breastfeeding Support

Target Audience:

____Alcohol/Drug Rehabilitation Participant____Inmates of Prisons/Jails

____Community Agency (Train-the-trainer) ____Mentally Challenged Individuals

____Day Care Provider

____Domestic Violence Shelter

____Team Nutrition

____Physically Challenged Individuals

____Senior

____WIC Participants

____Workforce Development

____Immigrants

____Other:_____

____Migrant Workers

____Parents Groups

____Child Assistance Program Participant

____Food Stamp Recertification Participant

____Medicaid Recertification Participant

____Emergency Dining Site Participant

____Group Home Residents

____Worksite Employees

Checklist Questions – Entry

(*To be collected by interview. Explain to the mother that she should answer questions that say "I ___" or "When I ___" as if she is making the statement herself. Please see other explanatory comments near questions.)*

(1) Since this recent pregnancy began, did you ever eat less than you felt you should because food supplies ran low and there wasn't enough money to buy more food? YES NO

(2) How often do you eat foods from each group in the Food Guide Pyramid:

Never Seldom Sometimes Most times Always

(3) How long do you plan to feed your baby only breastmilk (without water, formula, or other foods or drinks)?

4 or more months 2-3 months Less than 2 months Already gave water , formula, or other foods or drinks Undecided

(Q. 4-10 may be applied to the mother's future activities if the baby is currently unborn or too young.)

(4) When you think about breastfeeding in a public place, how comfortable are you?

Very comfortable Comfortable Not comfortable Very Uncomfortable Not sure how you feel

(5) When I give my baby a new food, the earliest the next new food can be given is:

The same day The next day After a few days

(6) I know when to feed my baby by:

Don't know The time of day My schedule Baby's crying Watching for signs of hunger

(7) I know it is time to stop feeding my baby when:

Don't know The food is finished I think s/he ate enough S/he stops eating

(8) When a mother is running out of formula, it is OK to add extra water to it.

True False Don't know

(9) If a mother is running out of formula, it is OK to use cow's milk or evaporated milk instead.

True False Don't know

(10) After a feeding, formula left in the bottle should be thrown away.

True False Don't know

(11) How often are you in smoky areas for longer than an hour?

Never Seldom Sometimes Most times Always

Postnatal Information *Collect information as available*

Name: _____ ERS Adult ID: _____ Date: _____

Information on Infant(s) Infant 1 Twin

Infant's name		
Gender		
Date of Birth		
Birth weight		
Full term/premature		
Weeks gestation (calculate from due date)		
Medications		
Injuries/challenges		
BF initiated?		
Age when BF initiated		
Roomed in?		
Days in medical facility		
Date infant discharged		
Feeding status at discharge		
Discharge weight		
Delivery hospital		

Information on mother

Delivery Method	
Medications	
Days in medical facility	
Date discharged	
Days of separation?	
Delivery hospital	

Right justified information will not be entered into ERS.

Left justified information will be entered in ERS.

Feeding Update Chart

Collect and update information for each infant as available. These milestones will be noted on the Contact Documentation Form (p.13), so there is no need to submit a copy of this form until the mother exits the program.

Collect and update information as available

Name: _____

ERS Adult ID: _____

Date: _____

D.O.B. of Infant **_____**

Event	Date	Infant's Age	Reason/comment
Stopped breastfeeding			
Introduced formula			
Discontinued formula			
Started cereal			
Started fruit			
Started meat			
Started vegetables			
Started juice			
Started mixed foods			
Started dairy			
Started sweets			
Ceased CCE contact for Enhanced Outreach program			

Maintained other CCE contact for nutrition education			

In-Home Breastfeeding Support _____ County Contact #_____ Date_____ Breastfeeding Educator_____	Mother's ERS# _____ Infant's First Name _____ Infant's Age_____	Mode of contact Phone___, Home___, Office___, Class__ Support Group_____ Hospital__ WIC ____ **Reason for contact** Routine___, Follow-up_____, Mother's call___, Referral from _____ Phone _____

Contact Documentation

How are things going?

_____

_____

Fact Finding Questions

A. Infant

Breastfeedings/24 hours: Number_____, Duration_____, Sides: Left__ Right__

What else are you giving the baby? (food, water, medicine):_____

How given: _____

When started: _____

Wet diapers/24 hours: (Number) _____ (Color) _____

Stools/24 hours: (Number) _____ (Color) _____

Behavior and appearance of Infant: Reported__ Observed__ (Alert, Sleepy, content, cranky, skin tone, and color, ……)

_____

_____

_____

Infant's last doctor's visit_____ Infant's last WIC visit_____

Recent weight at doctor's visit_____ Recent wt at WIC_____

Next planned doctor's visit_____ Next WIC appointment_____

B. Mother (*Remind mother if <u>her</u> health check up is due.)*

Mother's health, breast, and nipple condition: Reported____ Observed____

_____

<u>Contact Documentation Continued for ERS # _____ Contact # _____</u>

<u>Feeding observation</u> None:_____

Infant's state of readiness_____

Side: Left ___ min. Breast softer after feed?__ Right _____ min. Breast softer?_____

Position _____

_____

Latch on _____

_____

Suck, swallow _____

Rhythmic breast motion_____

Other observations _____

_____

_____

Separation technique _____

Nipple shape after separation _____

<u>Addressing Needs</u>

Praise for current practice/progress_____

Education/information given _____

_____

_____

_____

Anticipatory guidance about _____

Materials used _____

Referral to _____

Interaction with/about other household/family members _____

_____

Planning Next Steps

Mother's next steps _____

_____

Next steps for BE_____

_____

Possible considerations to monitor_____

_____

BE's Comments _____

_____

_____

Supervisor's Comments _____

_____

_____

Mentor's Comments _____

_____

_____

_____

_____

Contact Documentation Instructions

The Contact Documentation is the most important form for the In-Home Support Program. It serves the following purposes:

1. It is a reminder, for the Breastfeeding Educator, of the situation of the breastfeeding mother and her infant. It reminds her of information that has already been given by and to the mother, and of follow-up plans made by her and the mother.
2. It documents how a BE has been interacting with the mother, and with various professionals concerning the mother and infant.
3. It facilitates seamless service because it helps a back-up BE or a supervisor follow up on a situation if the primary BE is unavailable.
4. It provides a means of monitoring the processes used by BEs in their education and support of breastfeeding mothers. As such, it can be the framework for interaction between the BE and her mentor and supervisor.
5. It serves as an evaluation tool for the In-Home Support Program.
6. Review of Contact Documentation forms will indicate specific training or retraining needs that might exist.

A copy of this form must be filled for each contact the BE has with a breastfeeding mother. This form should be filled, as much as possible, in the presence of the mother. The mother may be more comfortable if she is given a copy of the form so that she knows what kinds of notes the BE is taking.

The BE's notes should be completed as soon as possible after a visit: that is, as soon as there has been time to consider all the facts collected, to look up information, and to reconsider possible courses of action. All original Contact Documentation forms for a given mother should be firmly attached in a file which is clearly marked with the mother's name and ID number. This file should be carried to in-home visits, so that a continuous record will be readily available to guide further interactions with the participant.

As soon as convenient after a contact, a photocopy of the Contact Documentation form should be made, the ***participant's name should be blocked*** and the form should be passed to the supervisor and then sent to the mentor for their comments. The form should not have the name of the mother on it. Only her ID number should be available to the mentor. This is necessary in order to maintain the mother's confidentiality as promised (See consent form.) If the supervisor is unavailable and a case requires urgent attention by the mentor, the copied form may go to the mentor before the supervisor sees it. After comments by the mentor and supervisor, the contact documentation form should be photocopied again for the BE's information and records, and then sent to campus in the monthly transmittal.

In the box:

Please fill in the name of your county.

The Contact # is the number of times you have been in contact with this mother since you began interacting with her on the subject of breastfeeding.

Date is date of the contact.

Please fill in your name.

Record mother's ERS # <u>but not her name</u>.

Record the infant's first name. Ask how old the infant is and also calculate the age by subtracting the date of birth from the current date.

Tick (√) the way the mother is in contact with you: on the phone; in person, at home, in person, in your office; in a class; in a support group; at the hospital; or at the WIC clinic.

Tick (√) the reason this contact was made: as a normal routine contact; to follow up on a previous contact; because the mother called you, or through a referral. For referrals, record the source and contact information.

<u>Numbers in parentheses in the rest of these instructions refer to the line numbers on the left side of the sample Contact Documentation record .</u>

(3-8) Ask the mother how things are going and listen carefully to her assessment of the situation, noting her concerns and background factors that could require further investigation, information or support from you. Before ending the contact, look over these notes and be sure you have addressed issues noted, or that you have made plans to address them.

(9) The fact finding questions are designed to: 1.) help you make sure that everything is going well; or 2.) help you provide the information and support the mother needs. You probably will not ask about all the items (11-38) at every contact. What you ask will depend on the situation described by the mother. Your questions and observations may also be guided by the things the mother does not mention, as you inform her about the signs of successful breastfeeding that she can look for. In the early days, it will be good to talk about how many times per day the baby should eat, and what to look for in the diapers. It may be helpful to leave some Daily Record forms (p.10 in Field References) to help the mother keep track of the baby's activities.

Observations are very useful for fact finding, but may not always be necessary or welcome. Always get permission to observe. Please indicate how you got the information you recorded: By listening, by observation, or both (20,32).

(27,29) It may be helpful to remind mothers that infants need regular check-ups and that WIC services are also helpful. It is good for a baby to have his/her first doctor's visit 2 or 3 days after discharge from the hospital. (29) Reported weights from those appointments may be helpful in considering the adequacy of breastfeeding as described in the Field References, p.9. Weight records, and particularly reported weights that were taken by other services are not appropriate subjects for program staff to comment on. However, they may be useful in alerting a BE to issues of possible concern. They may lead to a referral of the infant to a medical provider. (29) This may be a good time to remind the mother about the next vaccination due date (refer to Field References vaccination schedule, p.31.)

Around 4-6 weeks after delivery, it may be helpful to remind the mother about her own post-partum check-up if she hasn't had one yet. (31)

(39) Please be sure to fill in mother's ID and contact number, in case sheets get separated.

(41-53) When there are doubts about the comfort or success of breastfeeding, you can offer to observe a feeding. Make notes that will help you remember aspects for praise and improvement, and to track

(55-65) In the section on Addressing Needs, record your current response to the information from "How are things going?" (3-8) and from the Fact Finding Questions and Feeding Observations (9-53).

(67) Planning Next Steps" is where you record the follow-up that you and the mother plan together. Here you will note what the mother plans to do next (68-69), as well as make notes about your own follow-up plans (70-71). In situations where possible problems have been identified, these plans should be short-term and include dates. On the other hand, where things are going well, plans could cover a longer or even an open time frame.

(72-74) "Possible considerations to monitor" is a space for you to note things you are not sure about. You may want to ask your breastfeeding mentor or your supervisor about a situation. Or you may want to remind yourself to find out about an issue by using some reference material. The need to follow up a particular concern should be noted here.

(76-78) This is a space for you to make additional comments about the situation.

(79-81) "Supervisor's Comments" is a space for your supervisor to comment on your visit during periodic reviews.

(82-86) "Mentor's Comments" should be made by the lactation consultant or other professional who is working with you. There are two occasions when the mentor would make comments. The first is when the mentor is making specific suggestions in regard to a mother and baby who are having difficulties. The second is when the mentor is reviewing your cases and checking for consistency among: 1. the mothers' comments about "how it is going"; 2. the information you collected and 3. the way you addressed the needs of the breastfeeding pair.

Exit Information

Date: _____

ERS Adult ID: _____

Name: _____

Address: _____

City: _____ New York Zip: _____

Phone number: _____

Completion Questions

Did participant successfully complete the program? YES_____ or NO_____

If not, why? N/A_____

Lost contact_____

Refused to complete forms_____

Other _____

Exit only

Checklist Questions – Exit (*To be collected by interview. Explain to the mother that she should answer questions that say "I ___" or "When I ___" as if she is making the statement herself. Please see other explanatory comments near questions.)*

(1) Since this recent pregnancy began, did you ever eat less than you felt you should because food supplies ran low and there wasn't enough money to buy more food?

YES NO

(2) How often do you eat foods from each group in the Food Guide Pyramid:

Never Seldom Sometimes Most times Always

(3) How long do you plan to feed your baby only breastmilk (without water, formula, or other foods or drinks)?

4 or more months 2-3 months Less than 2 months Already gave water , formula, or other foods or drinks Undecided

(Q. 4-10 may be applied to the mother's future activities if the baby is currently unborn or too young.)

(4) When you think about breastfeeding in a public place, how comfortable are you?

Very comfortable Comfortable Not comfortable Very Uncomfortable Not sure how you feel

(5) When I give my baby a new food, the earliest the next new food can be given is:

The same day The next day After a few days

(6) I know when to feed my baby by:

Don't know The time of day My schedule Baby's crying Watching for signs of hunger

(7) I know it is time to stop feeding my baby when:

Don't know The food is finished I think s/he ate enough S/he stops eating

(8) When a mother is running out of formula, it is OK to add extra water to it.

True False Don't know

(9) If a mother is running out of formula, it is OK to use cow's milk or evaporated milk instead.

True False Don't know

(10) After a feeding, formula left in the bottle should be thrown away.

True False Don't know

(11) How often are you in smoky areas for longer than an hour? Never Seldom Sometimes Most times Always

(12) How often do you use alcohol in a week?

Never Less than once a week 3 times a week 4-6 times a week 7 or more times a week

(13) Before you enrolled in this program, how many times a week did you drink alcohol?

Never Less than once a week 3 times a week 4-6 times a week 7 or more times a week

(14) The information I got from the Breastfeeding Educator was:

Useful and timely Interesting and on time Not useful but on time Useful but at the wrong time

Not helpful and at the wrong time

Monthly Transmittal Report Cover Sheet

County _____

Staff _____

Date

Place a check-mark under the column, to the right of the Adult ID, representing the documentation/activity for this participant.

Adult ID	In-Home Support Entry Form and Informed Consent *Copies Included*	Completed Contact Documentation Forms *Copies Included*	Contact Documentation Forms in Process to Supervisor and Mentor	Postnatal Information Form *Copies Included*	In-Home Support Exit, Update Chart on Feeding, and Final Contact Documentation Form *Copies Included*	No Contact

This document is to be provided to campus on the 1st of the month.

Attn: Sally Farrell

Cornell University

3M14 MVR Hall

Ithaca, New York
14853

(607) 255-7715 Telephone

(607) 255-0027 Fax Machine

ERS Data Entry

Changing Enrollments between In-Home Breastfeeding Support Program and Traditional Programming

Performing Data Entry for Different Pathways

Routes of Enrollment - See Participant Pathways and Staff Procedures for Specific Explanations of each type of enrollment

A. Recruitment and Participation only in the In-Home Breastfeeding Support Program, including participants exited from previous fiscal years (anything prior to October 1, 2003).

B. Participant begins involvement as a traditional education client and transitions into the In-Home Breastfeeding Support Program.

C. Participant begins involvement in the In-Home Breastfeeding Support Program and transitions into traditional programming.

Route A. Procedure

See Performing Data Entry for the In-Home Breastfeeding Support Program

Route B. Procedure – Current Participant

1. Perform data entry into ERS
    a. See Performing Data Entry for the In-Home Support Breastfeeding Program – skip to step 39. You need not complete many of the above steps, as the participant's demographic data, etc. is already in the system.
    b. From the new entry paperwork, verify all demographic and program data are accurate.
    c. Add Subgroup M to the Subgroup field.
    d. Do not change entry date, number of lessons to date (from prior activities), etc.
2. Proceed with Data Entry as outlined in the Performing Data Entry for the In-Home Support Breastfeeding Program.

Route B. Procedure – Exited Participant – Current Fiscal Year

1. **Prior to performing any data entry**
    a. Back up ERS data as it is currently entered into the system. Follow the instructions for Backing Up ERS Data in the attached appendix.
    b. Submit ERS data to Campus CFNLIA@cornell.edu via email.
    c. The Message should include
        i. County Name
        ii. EFNEP or FSNEP database which is attached to email.
        iii. Adult Id number of participant who will be changed from traditional programming to In-Home Breastfeeding Support.
        iv. Ask for immediate confirmation of receipt of the data from Campus Staff.
        v. Once it has been confirmed that the data has been received, the new entries can begin.
2. Perform data entry
    a. From the Performing Data Entry for the In-Home Support Breastfeeding Program – skip to step 39. You need not complete many of the above steps, as the participant's demographic data, etc. is already in the system.
    b. From the new entry paperwork, verify all demographic and program data are accurate.
    c. Add Subgroup M to the Subgroup field.
    d. Change the entry date to reflect the date the participant enrolled in the In-Home Breastfeeding Support program.
    e. Change the number of lessons to 0 or 1.
    f. Delete the previous 24-hour recalls and Behavior Checklists.

i. These changes are why the data must be submitted to Campus prior to these changes being conducted.

3. Proceed with Data Entry as outlined in the Performing Data Entry for the In-Home Support Breastfeeding Program.

Route C. Procedure

1. Perform the data entry of all information, entry through exit, as outlined in the Performing Data Entry for the In-Home Breastfeeding Support Program, including input of the "exit information" into the participant's **Perinatal Program** screen. However, do not exit her from the **Adult** screen.
2. Submit data to campus
    a. Back up ERS data as it is currently entered into the system. Follow the instructions for Backing Up ERS Data in the attached appendix.
    b. Submit ERS data to Campus CFNLIA@cornell.edu via email.
    c. The Message should include
        i. County Name
        ii. EFNEP or FSNEP database which is attached to email.
        iii. Adult Id number of participant who will be changed from In-Home Breastfeeding Support to traditional programming.
        iv. Ask for immediate confirmation of data from Campus Staff.
        v. Once it has been confirmed that the data has been received by campus, begin new data entry.
3. Perform data entry
    d. Data entry for this participant will now change to those requirements of traditional programming, including the collection of both sets "traditional sets" of Behavior Checklist and the 24-Hour recall. The exceptions,
        i. the Informed Consent will not need to be collected, as the In-Home Breastfeeding Support form is significantly more detailed,
        ii. the entry date will not be changed,
        iii. the number of lessons will be added to, as the traditional lessons are delivered (no assessment of lessons will be reviewed with these participants), and
        iv. the subgroup will still indicate A (EFNEP) or B (FSNEP) and M for In-Home Support.
    e. From the new entry paperwork, verify all demographic and program data are accurate. Work with and conclude the participant as you would with all other traditional lesson participants.

Recording/Accounting for Staff Hours within ERS

To ensure that the hours which are devoted to the In-Home Breastfeeding Support Program are not included into the EFNEP Caseload expectations, please maintain an accurate assessment of the hours staff devoted to the In-Home Breastfeeding Support Program and, just prior to year-

end reporting, enter those hours into the ERS system under the heading of Non-EFNEP Adult Hours, reducing the EFNEP or FSNEP Adult Hours by that representation. As such, through all reports up to year-end FFY04, staff hours will be recorded only into either the EFNEP or FSNEP Database under the EFNEP or FSNEP Hours. For year-end submission, the appropriate corrections will be made.

Performing Data Entry for the In-Home Support Breastfeeding Project

1. Select **Adult** from the **ERS Main Switchboard** – *see hand numbered page 1attached*.
2. Select **Adult by ID** (or **Adult by Name**) – *see hand numbered page 2 attached*.
3. Select **Add Adult** located at the top of the screen – *see hand numbered page 3 attached*.
4. Assign an **ID of new adult** – *see hand numbered page 4 attached*.
    a. ***Write the Assigned ID number onto the In-Home Support Program Entry Information sheet***.
5. Assign a paraprofessional.
6. Select **Next.**
7. Verify the correct **PP** is assigned.
8. Fields **Name** through **Telephone number** are standard data entry – *see In-Home Breastfeeding Support Program Entry Information – Page 1, steps 8 – 11 and 15*.
9. Field for **Age** *must* have an entry.
10. **Pregnant** and **Nursing/Breastfeeding—**check box(es) if applicable to the participant.
    a. ***If Yes, to Pregnant, note Due Date, as it will be needed later when entering the* Perinatal Projects *information.***
11. **Race Code** and **Residence**—select the arrow to the right of each field. A popup screen will appear, allowing the correct information to be selected.
12. **Household Income**—use the numbers outlined below to report income for participants – *see In-Home Breastfeeding Support Program Entry Information – Page 2, steps 12, 17, 18, 20, 21*.

RANGE	ENTER
$ 0 to $ 500	250
$ 501 to $1,000	750
$1,001 to $1,500	1,350
$1,501 to $2,000	1,950
$2,000 to $2,500	2,250
over $2,501	2,850

13. **Lesson Type—**choose lesson type 2 – Individual.
14. **Number of Lessons**—this number should be updated monthly, after completing the Contact Documentation Form. Upon entry the number should be recorded as 1.
15. **Entry Date**—the date can be entered as 10/1/03, October 1, 2003, or by selecting the red calendar to the right of the field.
16. **Subgroups**—type *A and M* **or** *B and M*;

17. **Referral Source**—enter the option indicated by the participant.
18. **Highest Grade Completed**—select, from the popup screen, the category which most closely represents the education level of the participant.
19. **Target Audience**—enter the option which most closely reflects the participant.
20. **Children by Age**—enter the number of child(ren) in the box beside the corresponding age of the child(ren).
21. **Others in Household**—enter the number of other adults in the household.
22. **Total in Household**—field calculates automatically.
23. **Public Assistance at entry**—place an "x" in each box which is applicable for the participant

Data entry of the Behavior Checklist Questions for the Breastfeeding Program are to be entered into ERS, find the instructions beginning with step 24 below. 24-Hour Recalls are not required for participants in this project but can be collected and entered into the system as traditional data entry occurs.

24. Select the "pink box" located above the **Subgroups** field.
25. Select **Checklist.**
26. Select **Add Additional Questions**, at the bottom of the screen
27. Select the **BFPPROJEC** – ensure the set is listed in the **Selected Set** field.
28. Select **Save**.
29. Select **Add Survey**.
30. Select **Interview** or **Exit** survey by placing an "**X**" in the appropriate box.
31. Select **Additional Questions** at the top of the screen.
32. Enter the participant's responses to the questions.
    a. Please note, for True/False/Don't Know questions, the entries are:
        i. True = 1
        ii. False = 2
        iii. Don't Know = 0
    b. Please note, for Question 3 the question you will see on the screen is distinctly different that the one from the paper, that is acceptable. Enter the responses as they are entered onto the data collection form.
    c. All other entries should be exactly the same as from the data collection form.
33. Select **Save**.
34. Select **Save** when you are returned to the original set of questions, as you do not have responses for these questions. ***Please note, do not print the Behavior Checklist Diagnostic Report for the participant to review, as some of the "messages" are not what we would like to have them receive***.
35. Select the back door.
36. Select **Done**.
37. Select **Save** on the Adult screen.

Reminder; as the number of lessons the participant receives increases; the number of lessons reported on the Adult participant screen must be updated. A visit=a lesson for this project.

Also, when the participant ends program involvement, the adult screen must be activated to have the exit date and exit code information entered.

38. Select **Done** from the **Add Adult** screen.
39. Select the back door from the **Adult by ID/Name** screen.
    a. To open the record of a participant already entered into the system, select the blue box to the right of the participant's name, which is located on this screen.
40. Select the back door from the **Adult** screen.
41. Select **Perinatal Projects** task bar – *see hand numbered page 1attached*.
42. Select **Perinatal Data by Adult ID/Name** task bar – *see hand numbered page 6 attached*.
43. Select the "blue box" to the right of the name/ID number of the participant.
44. Select **Create New Record** task bar – *see hand numbered page 7 attached*.
45. Select **Both** – *see hand numbered page 8 attached*.

Entering Prenatal Information

46. Select the blue box to the right of the Prenatal Information title – *see hand numbered page 9 attached*.

The information for Steps 47 and 48 are not collected – disregard.

47. Enter ***Pregnancy month of first medical care***, if known – options unknown through 8th month – *see hand numbered page 10 attached for steps 47 - 63*.
48. Enter ***Total Medical Visits***, if known – option unknown through 22+. Update as information is learned through the *Contact Documentation Form*.
49. ***Date of first CES (CCE) contact***: auto fills from entry date entered into Adult screen.
50. Enter ***Pregnancy month of first CES (CCE) contact***, if known. Update as information is learned through the *Contact Documentation Form*.
51. ***Date of last CES (CCE) contact***: auto fills from exit date entered into Adult screen.
52. Select ***Curriculum*** – **Either** *completely Skip* this Field **or** choose one of the options listed below. Once the field is activated, an option must be selected.
    a. A – Have a Healthy Baby
    b. B – Great Beginnings
    c. C – Eating Right During Pregnancy
    d. D – EXCEL
    e. E – TAMS
    f. F – Smart Choices: A Nutrition Education Program for Women
    g. G – Taking Care of Two: Nutrition for Moms and Babies
    h. H – Eating for Two
    i. I – Eating Right is Basic
    j. J – My Child, My Choices
    k. K – Today's Mom
53. Select ***Location***: Options are;
    a. A – Home
    b. B – Agency site (Food Stamp offices, WIC, etc.)
    c. C – CES(CCE) Location
    d. D – School
    e. E – Community Center
    f. F - Other
54. Enter the ***Number of lessons into the CES column***. Please note this will need to be updated monthly, or more/less frequently, as appropriate. Each entry, excluding initial visit and exit visit,

will be documented via the *Contact Documentation Form*. *This does not automatically update from Adult screen and will need to be input in both locations*.

55. Enter the ***Average length (min.)*** – in minutes.
56. Enter the ***Exit Code***, when appropriate – Options are;
    a. 1 – Graduated before Delivery
    b. 2 – Terminated before Delivery
    c. 3 – Active in program at time of Delivery
57. Enter the ***Weigh Gain Indicator***, if known: Update as information is learned through the *Contact Documentation Form*. Options are;
    a. A – Not Enough
    b. B – Too Much
    c. C – About Right
    d. D – Not Commented On
    e. E – Mixed
    f. X – Not Available
58. Enter the ***Number of Expected Births***: 1 is the default.
59. Enter the ***Expected Delivery Date*** – *see In-Home Breastfeeding Support Program Entry Information – Page 1*.

Please note, the information needed for Steps 60 and 61 are not be collected, as such ignore.

60. Enter ***Mother's knowledge at entry of adverse effects of; Smoking, Alcohol, Street Drugs***. Options are;
    1 – Little ---------- 5 – Sound
61. Enter ***Mother's use at entry of; Smoking, Alcohol, Street Drugs***. Options are;
    1 – None ---------- 5 – Often
62. Enter ***Mother's Breastfeeding Plans*** – *see In-Home Breastfeeding Support Program Entry Information – Page 3*. Options are;
    a. Plans to {Pro–Breastfeeding}
    b. Does not plan to {Pro-Formula feeding}
    c. She is not sure {Undecided}

Please note, providing both formula and breastfeeding together is not an option of the ERS. If participant indicates this will be their feeding method choose option A – Pro-Breastfeeding, as they will be including Breastfeeding in their feeding methods.

63. Select **Save**.

Remember to update this screen as more information becomes available.

Entering Delivery Information

64. Select the blue box to the right of the Delivery Information title – *see hand numbered page 9 attached*.
65. Enter ***Place of birth***: – *see hand numbered page 11 attached, steps 65 – 68 and In-Home Breastfeeding Support Program Postnatal Information to complete this section of the data input.* Options are;
    a. H – Hospital, Clinic, or Birth Center
    b. O – Other
    c. R – Home
    d. X – Don't Know
66. Enter ***Days mother was in medical facility***.

67. Enter ***Number of births***: 1 is the default. ***Note, if you enter 2 or more, when you get to steps 69 – 77 below, you will need to repeat those steps for each infant***.
68. Select **Save**.

Entering Birth Information

69. Select the blue box to the right of the Birth Information title – *see hand numbered page 9 attached*.
70. Enter ***Baby Name*** – *see hand numbered page 12 attached, steps 70 – 77 and In-Home Breastfeeding Support Program Postnatal Information to complete this section of the data input*.
71. Enter ***Date of Birth***.
72. Enter ***Birth Outcome***: Options are;
    a. Full Term (default)
    b. Miscarriage
    c. Premature
    d. Stillborn
73. Enter ***Sex*** – Male, Female, Unknown.
74. Enter ***Birth Weight***.
75. Enter ***Days in Medical Facility***.
76. Enter ***Survived first month*** – yes, no, don't know.
77. Select **Save**.

Entering Breastfeeding Information

78. Select the blue box to the right of the Breastfeeding Information title – *see hand numbered page 9 attached*.
79. Select ***Initiated Breastfeeding*** if appropriate – *see hand numbered page 13 attached, steps 79 – 90, and the In-Home Breastfeeding Support Program Postnatal Information to complete this input*.
80. Enter the ***Months mother planned to breastfeed*** – *see In-Home Breastfeeding Support Program Postnatal Information.*
81. Select ***Prior breastfeeding experience***, if appropriate - *see In-Home Breastfeeding Support Program Entry Information – page 2.*
82. Enter the ***Source(s) of breastfeeding support***: If more than 1, use #2, and #3 to collect all information – *see In-Home Breastfeeding Support Program Entry Information – page 2.* Options for these questions are;
    a. A – Family and/or Friends
    b. B – MD, RN, other health professionals
    c. C – EFNEP or Extension Staff
    d. D – WIC staff
    e. E – Other
    f. X – No Support
83. Enter the ***Date breastfeeding was discontinued*** – *see In-Home Breastfeeding Support Program Feeding Update Chart – Steps 83 - 87.*

84. Enter the ***Reason*** breastfeeding was discontinued. Options are;

a. A – Infant self-weaned
b. B – Sore nipples/physical discomfort
c. C – Breast infection or other illness
d. D – Inadequate milk supply
e. E – "bad" milk
f. F – Returning to school and/or work
g. G – Too demanding
h. H – Embarrassment
i. I – Infant was sick or hospitalized
j. J – Mother didn't like doing it
k. K – Mother breastfeed as long as she intended
l. L – Inability of mother and child to successfully connect
m. X - Other

85. Enter the ***Date started formula***.
86. Enter the ***Date formula discontinued***.
87. Enter Dates Other Foods were introduced (approximate if not sure) – *see In-Home Breastfeeding Support Program Feeding Update Chart.* Items to have entries;
    a. Cereal
    b. Juice
    c. Fruit
    d. Mixed foods
    e. Meat
    f. Dairy (non-formula)
    g. Vegetables
    h. Sweets and Other

Please note this section requires the greatest number of updates, as data are collected at various intervals.

88. Enter the ***Date CES (CCE) ceased contact*** – s*ee In-Home Breastfeeding Support Program – Exit Information*.
89. Enter the ***End record date***. *Please note this date is only entered when all information on this adult is completed. It may or may not be the same date as the exit date*.
90. Select **Save**.
91. Select the back door until returned to the **ERS Main Switchboard**.

Reminders:

1. Update number of lessons in two locations, **Adult** screen and **Perinatal Project** screen.
    a. Each contact/lesson should either be represented by an enrollment, exit, or contact documentation form.
    b. A contact=a lesson
2. Update the food chart, as new foods are introduced.
3. Remember to exit the participant when In-Home Breastfeeding Support participation ends.
    a. Exceptions – moving from one type of contact to another.

APPENDIX 3.2 *ENHANCED MATERNAL OUTREACH PROGRAM*

Table of Contents

Program Description

OBJECTIVES

The goals of the Enhanced Outreach Program are to increase the enrollment of pregnant women, breastfeeding women, and women who have recently delivered in the Expanded Food and Nutrition Education Program (EFNEP) or Food Stamp Nutrition Education/Eat Smart New York (FSNE/ESNY) and to provide them with information about good nutritional practices relating to pregnancy and infancy.

ROLES OF NUTRITION EDUCATION STAFF

Staff will augment recruitment through increased use of marketing channels available to EFNEP and FSNE/ESNY and especially through the establishment of closer ties with maternal and child service providers such as the WIC Program.

Nutrition information related to maternity and infancy may be provided in classes or in-home visits according to the normal practice of nutrition education in each participating county. The number of lessons usually given will be conducted and graduation will be based on successful completion of those lessons.

Counties participating in the Enhanced Outreach Program will be asked to provide information that will allow for evaluation in comparison with the In-Home Support Program and the traditional EFNEP and FSNE programs. Nutrition education staff will collect much of this information on forms (described in this booklet) and will also help staff from Cornell make phone contact with participants to ask about their experiences with the program. Staff will also give direct feedback about the program to Cornell through periodic interviews. Routine FNEC procedures will continue to be followed. Thus, the additional work that Enhanced Outreach will require of participating staff will be: greater recruiting efforts and extra evaluation duties.

For staff who may be involved in breastfeeding education, the Scope of Practice section on page 3 is provided as a reference.

TRAINING AND SUPERVISION

Front-line staff working in this program will have been trained as nutrition paraprofessionals (Nutrition Teaching Assistants, or Community Nutrition Educators) by Cornell University's Division of Nutritional Sciences. Whenever possible, additional training concerning breastfeeding will also be provided to those interested.

Supervisory procedures that are routine for general nutrition education will be applied in the Enhanced Outreach Program.

Scope of Practice in Breastfeeding Education

The guidance below was originally written for staff who will be giving one-on-one support to breastfeeding women in the Breastfeeding Support Program. However, many aspects will also be useful for the Enhanced Maternal Outreach Program and so the Scope of Practice is included below as a reference.

The Educator Role

Emphasis on Educating

The Educator working in the In-Home Breastfeeding Support Program has a wonderful opportunity to give mothers the information and support they need, when they need it, and in their homes. She may be the first source of breastfeeding assistance low-income women seek.

The Breastfeeding Educator (BE) working for CCE is very different from most other staff who work to help breastfeeding mothers. Whatever her initial background, in the BE role, she is not a medical staff who can diagnose or prescribe. Nor is she a counselor who can advise. Her training and experience will give her a framework for thinking about the breastfeeding mother and infant and their progress. She will be able to provide information that will foster that progress. She will be able to recognize a possible problem situation and to provide information about approaches to dealing with it. One such approach is for the mother to seek alternative sources of appropriate assistance. Indeed, the only "advice" or "recommendation" that should be given as such should be referrals to medical providers. Other responses to mothers' needs should take the form of "information" or "education."

The distinction between *diagnosing* and *considering or assessing* is the difference between *coming to a conclusion* and *thinking about the possibilities*. If a BE only thinks about the possibilities, she is not likely to make the mistake of diagnosing. However, even when she only thinks about the possibilities in a situation, there are fine lines between advising or recommending, and giving information. Here are some other words for *give information*: educate, teach, clarify, familiarize, inform, share information. Breastfeeding educators can ask themselves if what they are about to do is simply educate, and they can avoid overstepping the role. Terms such as these should guide our practice and be used in written documents such as referrals and contact documentation records.

Sample Phrases for Educating and Referring

"Fullness of the breast is very common a few days after delivery. One way of relieving the fullness is to….. Another method that many mothers find useful is……"

"Now, we have talked about some ways of correcting your nipple pain. Sometimes when there is nipple pain, the baby may not be getting as much to eat as we would wish. I recommend that you to take him to ____ for a weight check. You might mention to the doctor that you were having nipple pain, but that it is now corrected. Meanwhile, a way that mothers can check whether the baby is getting enough is to keep track of feedings and diapers…."

"Did you know that babies get to taste the flavors of what their mothers eat?"

"The Institute of Medicine suggests that women who avoid milk can still get enough calcium if they eat foods such as. . ."

Observing

Another implication of the non-medical role of the breastfeeding educator is that she cannot assume that mothers will be comfortable having her observe them breastfeeding, or looking at their breasts. It is always appropriate to ask permission to observe. If this permission is not freely given, one should try to obtain the needed information through questioning and the use of props. Referral to medical providers may be necessary.

Touching

It is sometimes helpful to hold the infant and observe skin and eye color, muscle tone, moistness of the mouth, and skin condition. Permission should be given for any touching of the infant. It should not be necessary to touch the mother, however. Props can be used to demonstrate any positions or techniques that might be helpful.

Evidence-Based Practice

There are many sources of ideas and information about breastfeeding. Some of these include the BE's own personal experience, oral traditions from elders, magazine articles, and websites. However, the credibility of the In-Home Support Program and the welfare of the infant and mother enrolled in the program depend on the use of scientifically sound research findings as the basis for information shared with mothers.

Focus on Individual Goals

The purpose of the In-Home Support Program is to help mothers achieve their own breastfeeding goals. A mother's goal may differ widely from the Surgeon General's recommendation of exclusive breastfeeding for 6 months. Even so, the individual participant's goal should be respected as the tentative target for education given to that mother. There are many possible reasons for a mother's goals to change. If a mother chooses to stop breastfeeding earlier than planned, the educator should help her celebrate her successes and the benefits she has given her baby.

Confidentiality

Information provided by the mother, her household and family members, or her health care providers must remain confidential. Likewise, information gained by observation in interactions with the mother is confidential. This confidentiality must be explained in the consent form which the mother signs. In any circumstances when the mother or infant would benefit from sharing information with health providers or other agencies, separate signed permission must be given by the mother. Such circumstances include referrals.

Conflict of Interest

In cases where products such as pumps may be of use, the educator should provide information about the pros, cons, and methods of using the various options so that the mother can decide what is best for her. The educator should not be the provider of these products and should not profit by recommending them.

Program Evaluation

Evaluation of the Enhanced Outreach Program will help us make future programming decisions. Analysis of the processes implemented in each of the counties, and data collected about infant and maternal participants will be completed and compared with information supplied by the In-Home Support counties and those providing routine FSNE/ESNY nutrition programming. The information of interest includes:

1. Enrollment figures for infants and pregnant and lactating women
2. Mothers' breastfeeding goals, durations, and experiences
3. Behavior change and the facilitators and barriers to good practices
4. The ease of administering and implementing the program

Some of the data needed for evaluation are currently collected through existing procedures. Additional information about breastfeeding and infant feeding will be collected for Enhanced outreach, using new forms developed for this project.

Data from these new forms will *not* be entered into the ERS. Instead, they will be sent to campus and will be analyzed separately. Data that *will* be entered into the ERS will be recorded on the Entry and Exit forms currently in use for FSNE/ESNY clients.

The following "Program Flow Chart for Data" illustrates the combination of routine and additional steps involved in working with the Enhanced Outreach participants. The "Action" rows indicate what should be done with various documents.

Program Flow – Chart for Data

(Only one consent form (®) will be used. All other steps listed in both columns will be conducted by Enhanced Outreach counties.)

ENROLLMENT	*Routine process*	*Additional Steps for Enhanced Outreach*	

	Consent form	Consent form ®*	
	Enrollment form	Enrollment form®	
	Checklist questions	Breastfeeding checklist questions®	
	Dietary Recall		
Action	ERS input		
		Copy to campus	

ONGOING EDUCATION			
	Diagnostic printout		
	Progression records	Postnatal Information® Feeding Update Chart®	
	Lesson plans		
	Handouts		
Action	File with participant record	Copy to campus when completed	

EXIT			
	Exit Form	Exit Form®	
	Checklist questions	Breastfeeding checklist questions®	

	Dietary Recall	Progression records	
Action	ERS input		
		Copy to campus	

* ® = newly developed form

Consent for Food and Nutrition Education

Welcome! During our time together we will share information on

- keeping food safe
- buying food
- making healthful meals
- being active
- feeding children

We hope that you will come to all of the sessions.

We will ask you to fill out a form with information about you and your family. You do not have to give us the information and you can still participate. However, the information will help us meet your needs. We will ask you to fill out the form when you begin the sessions and when you end the sessions. We may also ask you to fill out a form after 5-6 sessions.

We would appreciate your help in developing a new effort to reach out to pregnant women and new mothers with information about feeding their babies and themselves. If you agree, in addition to the information we normally collect for the program, we would like to ask you for information about your pregnancy and your baby and particularly about what you both eat. For this purpose, we would interview you when you begin the sessions and when you end the sessions. We may also contact you by phone a few months after the sessions end. If we do, we will ask questions about how you are doing and how the sessions affected you and your family.

We do not anticipate any risks for you participating in this study, other than those encountered in day-to-day life. The benefit of participation is information you will gain about feeding your family. The information you give us will help us improve our services to you or other mothers caring for infants in the future.

We will put your information with information we collect from other people across New York State. Any information you give us will be confidential and only staff that work with the Nutrition Program will see the information we collect. We will keep the forms in a locked cabinet. In 6 years, we will destroy the forms.

We encourage you to ask questions about any part of the program or the study that may not be clear to you. The Nutrition Educator may be able to answer your questions. If not, you may seek more information from: Patricia Ladipo, Cornell University, Ithaca NY 14853, 607-255-7715.

I understand the above statement and agree to participate in the program and the study.

_____ _____

Signature Date

This consent form was approved by the University Committee on Human Subjects on 8/11/03

Entry Information

(To be collected by interview)

Date: _____

ERS Adult ID: _____

Name: _____

Address: _____

City: _____ New York Zip: _____

Phone number: _____

Age: _____

Are you pregnant? ___Yes ___No **If Yes, Due date _____**

Are you breastfeeding? ___Yes ___No

Previous children born to mother: Age _____ _____ _____ _____ _____

Were any of your children ever breastfed? [*If yes, Please circle the age of the breastfed child(ren*]
What is the longest you ever breastfed? _____

If this is a prenatal or perinatal mother, ask

What are your thoughts about feeding your baby?

Instructions to interviewer: Please record what the mother said in the space provided, listing her ideas and concerns:

For mothers who definitely want to breastfeed, ask:

Have you thought about how long you might want to breastfeed? *Please record mother's exact answer here _____ and then indicate in weeks below.*

Mother's breastfeeding goals: ___ birth to 4wks ___ 4-7 wks ___ 8-11 wks
___ 12-15 wks ___ 16+ wks

We are asked to remind everyone to be sure to be seeing your healthcare provider (and your baby's healthcare provider) regularly and to be sure to ask about HIV testing if you have not already done so. Testing for HIV is important for your health and your baby's health. Breastfeeding is not recommended for women who have HIV.

Note: this section is to be printed on the back of the Entry Information form. It is not to be copied for the participant.)

Instructions to interviewer: Now, based on what you heard, please summarize by checking the category of response that you think is the closest to the mother's decision.

***Categories**:*

Pro-Breastfeeding _____

Pro-Formula feeding _____

Undecided _____

Other _____

ENHANCED MATERNAL OUTREACH PROGRAM

Entry Only

Checklist Questions – Entry

(To be collected by interview. Explain to the mother that she should answer the questions that say "I___" or "When I___"as if she is making the statement herself. Please see other explanatory comments near questions.)

(1) Since this recent pregnancy began, did you ever eat less than you felt you should because food supplies ran low and there wasn't enough money to buy more food?

1	2
Yes	No

(2) How often do you eat foods from each group in the Food Guide Pyramid?

1	2	3	4	5	0
Never	Seldom	Sometimes	Most Times	Always	NA

(3) How long do you plan to feed your baby only breastmilk (without water, formula, or other foods or drinks)?

1	2	3	4	5
Undecided	Already gave water, formula, or other foods or drinks	Less than 2 months	2 - 3 months	4 or more months

(Q4-10 may be applied to the mother's future activities if the baby is currently unborn or too young.)

(4) When you think about breastfeeding in a public place, how comfortable are you?

1	2	3	4	5
Very Comfortable	Comfortable	Not comfortable	Very Uncomfortable	Not Sure

(5) When I give my baby a new food, the earliest the next new food can be given is:

1	2	3	0
The same day	The next day	After a few days	NA/Don't Know

(6) I know when to feed my baby by:

1	2	3	4	5

Don't Know	The time of day	My schedule	Baby's crying	Watching for signs of hunger

(7) I know it is time to stop feeding my baby when:

1	2	3	4
Don't Know	The food is finished	I think s/he ate enough	S/he stops eating

(8) When a mother is running out of formula, it is OK to add extra water to it?

1	2	0
TRUE	FALSE	Don't Know

(9) If a mother is running out of formula, it is OK to use cow's milk or evaporated milk instead.

1	2	0
TRUE	FALSE	Don't Know

(10) After a feeding, formula left in the bottle should be thrown away.

1	2	0
TRUE	FALSE	Don't Know

(11) How often are you in smoky areas for longer than an hour?

1	2	3	4	5
Never	Seldom	Sometimes	Most Times	Always

Postnatal Information

Collect information as available

Name: _____ ERS Adult ID: _____ Date: _____

Information on Infant(s)	**Infant 1**	**Twin**
Infant's name		
Gender		
Date of Birth		
Birth weight		
Full term/premature		

Weeks gestation (calculate from due date)		
Medications		
Injuries/challenges		
BF initiated?		
Age when BF initiated		
Roomed in?		
Days in medical facility		
Date infant discharged		
Feeding status at discharge		
Discharge weight		
Delivery hospital		

Information on mother

Delivery Method	
Medications	
Days in medical facility	
Date discharged	
Days of separation?	
Delivery hospital	

Feeding Update Chart

Collect and update information as available

Name: _____

ERS Adult ID: _____

Date: _____

D.O.B. of Infant

_____

Event	Date	Infant's Age	Reason/comment
Stopped breastfeeding			
Introduced formula			
Discontinued formula			
Started cereal			
Started fruit			
Started meat			
Started vegetables			
Started juice			
Started mixed foods			
Started dairy			
Started sweets			
Ceased CCE contact for Enhanced Outreach program			
Maintained other CCE contact for nutrition education			

Exit Information

Date: _____

ERS Adult ID: _____

Name: _____

Address: _____

City: _____, New York Zip: _____

Phone number: _____

Graduation Questions

Did participant graduate program? YES_____ or NO_____

If not, why? N/A_____

Lost contact_____

Refused to complete forms_____

ENHANCED MATERNAL OUTREACH PROGRAM

Exit Only

Checklist Questions - Exit

(To be collected by interview. Explain to the mother that she should answer the questions that say "I___" or "When I___"as if she is making the statement herself. Please see other explanatory comments near questions.)

(1) Since this recent pregnancy began, did you ever eat less than you felt you should because food supplies ran low and there wasn't enough money to buy more food?

1	2
Yes	No

(2) How often do you eat foods from each group in the Food Guide Pyramid?

1	2	3	4	5	0
Never	Seldom	Sometimes	Most Times	Always	NA

(3) How long do you plan to feed your baby only breastmilk (without water, formula, or other foods or drinks)?

1	2	3	4	5
Undecided	Already gave water, formula, or other foods or drinks	Less than 2 months	2 - 3 months	4 or more months

(Q4-10 may be applied to the mother's future activities if the baby is currently unborn or too young.)

(4) When you think about breastfeeding in a public place, how comfortable are you?

1	2	3	4	5
Very Comfortable	Comfortable	Not comfortable	Very Uncomfortable	Not Sure

(5) When I give my baby a new food, the earliest the next new food can be given is:

1	2	3	0
The same day	The next day	After a few days	NA/Don't Know

(6) I know when to feed my baby by:

1	2	3	4	5
Don't Know	The time of day	My schedule	Baby's crying	Watching for signs of hunger

(7) I know it is time to stop feeding my baby when:

1	2	3	4
Don't Know	The food is finished	I think s/he ate enough	S/he stops eating

(8) When a mother is running out of formula, it is OK to add extra water to it?

1	2	0
TRUE	FALSE	Don't Know

(9) If a mother is running out of formula, it is OK to use cow's milk or evaporated milk instead.

1	2	0

TRUE	FALSE	Don't Know

(10) After a feeding, formula left in the bottle should be thrown away.

1	2	0
TRUE	FALSE	Don't Know

(11) How often are you in smoky areas for longer than an hour?

1	2	3	4	5
Never	Seldom	Sometimes	Most Times	Always

(12) How often do you use alcohol in a week

1	2	3	4	5
Never	Less than once a week	3 times a week	4-6 times a week	7 or more times a week

(13) Before you enrolled in this program, how many times a week did you drink alcohol?

1	2	3	4	5
Never	Less than once a week	3 times a week	4-6 times a week	7 or more times a week

Enhanced Outreach Monthly Transmittal Report Cover Sheet

County _____

Staff _____

Place a check-mark under the column, to the right of the Adult ID, representing the documentation/activity for this participant.

Adult ID	Enhanced Outreach Entry Form, Informed Consent, and breastfeeding questions *Included*	Participant in progress, no documentation submitted	Progression Record, Exit Form, Postnatal Information, Update Chart on Feeding, and Breastfeeding Questions *Included*	No Contact

This document is to be provided to campus on the 1st of the month.

Attn: Sally Farrell

Cornell University

3M14 MVR Hall

APPENDIX 3.3 Data by County: Home

Home county data		Cortland		Jefferson		Lewis		Niagara		NYC		Oswego		St Lawrence		Tompkins		Wyoming		
N= 190		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	P value
Total enrolled		8	4.06	38	21.83	2	1.02	18	9.14	41	21.32	22	11.17	24	12.70	16	8.12	21	10.67	
	White	7	5.6	34	24.82	1	.79	16	11.68	5	3.65	22	16.06	22	16.06	10	7.30	21	14.6	<.001
	Black	0		2	8.70	0		1	4.35	20	86.96	0		0		0		0		
	Other	1	3.57	1	3.57	1	3.57	1	3.57	16	57.14	0		2	7.14	6	21.43	0		
Average age		29.8		23.5		22.5		25.6		24.5		23.4		24.8		27.3		24.5		.208
Avg # children <5		1.1		.95		.5		1.2		.5		.7		.87		.93		.8		
Avg total family		3.75		3.0		2.5		3.72		3.11		3.32		3.9		2.93		3.0		
Avg # lessons (4.98)		6.5		5.2		4.5		6.6		5.8		4.3		4.0		3.6		4.6		0.0268
Lesson Type	1	1	25	2	50.00	0	0	1	25	0	0	0	0	0	0	0	0	0	0	
	2	7	3.8	35	19.02	2	1.09	17	9.24	41	22.28	22	11.96	24	13.04	16	8.7	20	10.87	
	3	0	0	1	50.00	0	0	0	0	0	0	0	0	0	0	0	0	1	50	
Avg months in prog		3.7		4.5		1.7		3.8		5.6		5.5		4.4		7.2		4.8		0.0268
Breastfed	Y	5		23		2		15		32		10		24		16		15		
	N	0		1		0		3		3		8		1		0		3		

L	3		1		0		0		7		4		0		0		3			
Pregnant at entry	3	3.61	6	7.23	1	1.20	7	8.43	34	40.96	18	21.09	1	1.20	2	2.41	11	13.25	<.0001	
N= 83																				
Delivered	0	0	5	7.58	1	1.52	7	10.61	27	40.91	15	22.73	1	1.52	2	3.03	8	12.12	<.0001	
N= 66																				
Breastfed	0	0	5	10.20	1	2.04	4	8.16	24	48.98	7	14.29	1	2.04	2	4.08	5	10.20	.0291	
N= 49																				

APPENDIX 3.4 Data by County: Outreach

Outreach counties	Cayuga	Chemung	Delaware	Erie	Essex	Genesee	Herkimer	Monroe	Orange	Steuben	Suffolk	Ulster	
N=89	N %	N %	N %	N %	N %	N %	N %	N %	N %	N %	N %	N %	P value
Total enrolled	3 4.17	2 2.08	4 4.17	1 2.08	3 3.13	5 5.21	17 20.83	19 21.88	11 11.46	3 3.13	10 10.42	11 11.46	
White	3 5.88	2 3.92	4 7.84	1 1.96	3 5.88	5 9.80	14 27.45	7 13.73	0	3 5.88	0	9 17.65	<.001
Black	0	0	0	0	0	0	0	8 80.00	0	0	0	2 20.00	
0ther	0	0	0	0	0	0	3 10.71	4 14.29	11 39.29	0	10 35.71	0	
Avg Age	23.3	18	25.7	21	20	28.4	21.8	24.1	22.1	29.3	27.6	25.9	
Avg # child < 5	1	.5	1.2	1	.6	1	.41	.76	1.1	2.3	0.1	.81	
Avg total family	3.6	2.5	3.5	2	2.3	3.8	3.5	2.7	4.4	4	2.5	3.5	
Avg number of lessons (5.46)	5.7	9	8	8	4.3	5.4	10	5.8	6.3	10	5.7	8	<.0001
Lesson 1 Type 2 3	0 0 3 5.12 0 0	1 3.33 0 0 1 100	0 0 4 6.9 0 0	1 3.33 0 0 0 0	0 0 3 5.17 0 0	2 6.67 3 5.17 0 0	1 3.33 16 27.59 0 0	15 51.52 4 6.9 0 0	0 0 11 18.97 0 0	0 0 3 5.17 0 0	10 33.3 0 0 0 0	0 0 11 18.97 0 0	
months in programavg	8.9	8.2	7.5	4.3	8.2	5.0	5.0	2.4	9.3	13.6	1.1	6.7	<.001
	0 0 1/3	1 0 1	1 0 3	0 0 1	1 1 1	5 1 1	11 5 4/3	9 1 4/6	8 2 1	3 0 0	0 4/6	3 2 1/5	
Pregnant N= 66	3 4.55	2 3.03	3 4.55	1 1.52	3 4.55	2 3.03	15 27.73	14 21.21	5 7.58	1 1.52	10 15.15	7 10. 14	.0185
Delivered N= 23	0 0	0 0	0 0	0 0	2 8.70	1 4.35	10 43.48	3 13.04	4 17.39	1 4.35	0 0	2 8.70	.0260
Breastfed N= 15	0 0	0 0	0 0	0 0	0 0	0 0	8 53.33	2 13.33	4 26.67	1 6.67	0 0	0 0	.0261

CHAPTER 4: BREASTFEEDING PATTERNS AMONG EMPLOYEES AT A LAND GRANT UNIVERSITY

ABSTRACT

Breastfeeding rates have improved over the last 20 years, but lag behind the Healthy People 2020 goals. Given that the majority of women return to work shortly after delivery, workplace support for breastfeeding could facilitate breastfeeding continuance. This paper examines employee breastfeeding behavior before and after implementation of workplace breastfeeding support policies and practices in a university setting. Breastfeeding behavior change over time was assessed by comparing employees' responses by age of their youngest child. Breastfeeding initiation among employees and breastfeeding after returning to work improved after breastfeeding support policies were implemented. The increase in breastfeeding rate (+ 9.35%), is greater than any improvements during the same time period in national or state rates (+2%). Breastfeeding after return to work improved as well (+7.3%), however, there is no comparable data for the county, region, or state. Differences in breastfeeding behavior by race and income were not detected after policies were implemented. Circumstances of one's work position: private office, less rigid schedules, facilitated positive breastfeeding behavior among academic staff vs hourly employees.

INTRODUCTION

The many benefits of breastfeeding have been well-established in current literature. Breast fed infants have fewer clinic visits during the first year of life and fewer reported instances of otitis media, upper respiratory and urinary tract infections, and atopic diseases than bottle-fed infants[1]. Breastfeeding provides a protective effect against the incidence of dental caries and development of obesity and diabetes in later life[2]. Evidence of enhanced cognitive development among breastfed infants is also emerging[3]. Benefits for breastfeeding women include protection against breast cancer, ovarian cancer and osteoporosis. A shorter return to pre-pregnancy weight has also been reported[4].

The unique protective immunological constituents of breast milk make it superior to all substitute feeding products, particularly when bottle feeding preparation or water sources are unsanitary. The dramatic protective benefits of exclusive breastfeeding on both infant mortality and morbidity rates in the third world, compared to rates for bottle fed infants, have been attributed to environmental conditions that render bottle feeding both unsanitary and unhealthy. In first world settings where better environmental conditions are likely, controlled trials conducted in Europe[4] and the United States[5] have demonstrated the benefits of breastfeeding in reducing gastrointestinal infection, atopic eczema, and otitis media.

Over time, breastfeeding rates in the US have fluctuated to a low in the 1950's, increasing through the 1970's, decreasing slightly again in the 90's, with an uptake in the 2000's. The 2016 ever breastfed rate is 81.1%[7.] Women likely to breastfeed can generally be described as middle and upper income; some education after high school; Hispanic, non-Hispanic white, or

Asian; non-smoker; over age 30; and living in the west and northwest. Women less likely to breastfeed can generally be described as low income; smokers; no post high school education; non-Hispanic black; less than age 30; and living in the south[8 - 10].

It is well-documented that barriers to successful breastfeeding include embarrassment, lack of family, peer or other social support[11], and lack of timely assistance when problems arise[12]. Health care providers' knowledge of breastfeeding and ability to coach mothers about breastfeeding is not consistent across all sectors of the U.S. health care system, and access to lactation support can be limited[13]. Economic pressure to return to work in both dual and single parent households, limited family leave time, and requirements of welfare-to-work have emerged as strong barriers to both initiation and duration of breastfeeding[14]. The most recent data indicate that the lowest breastfeeding rates are among low income women regardless of other demographic characteristics[15]. The underlying context of low income and low socio-economic status is emerging as the key barrier to breastfeeding.

Once initiated, the times when risk of weaning is greatest and therefore the times when support is most needed is immediately following a mother's discharge from the hospital and again when mothers return to work or school[16]. Both limited paid maternity leave and the pressure to return to work present tremendous challenges to breastfeeding duration for even the most motivated of mothers. It is possible that low income women may experience these factors more often than women who earn higher incomes. It is clear from the evidence that when worksite wellness policies provide supportive environments (e.g., pumping room, facilities for storage, flexible hours, job sharing, etc.), more women continue breastfeeding when they return to work [17]. When established, workplace policies that address breastfeeding can result in prolonged breastfeeding duration[18].

New York was the first state to enact legislation that both protected and supported breastfeeding women. In 1984, legislation that exempted breastfeeding from existing indecency laws was passed. In 2002, the New York State Labor Law (Labor Law, Article 7, Section 206-c.) was amended[19], requiring employers to provide break time for breastfeeding women as well as to make reasonable accommodations for women to breastfeed or express milk, and prohibited discrimination against women who chose to exercise these options in the workplace.

Subsequently, all 50 states have passed legislation that addresses breastfeeding in at least one of five ways: 1) providing space and break time for working women, 2) prohibiting discrimination against breastfeeding employees, 3) allowing breastfeeding in any public or private location, 4) exempting breastfeeding from public indecency laws and 5) exempting breastfeeding women from jury duty[20]. In March 2010, the Patient Protection and Affordable Care Act (ACA) became the first federal legislation to support breastfeeding in the workplace. The ACA requires that employers set aside break time and private space for breastfeeding women up to one year postpartum[21].

With this new emphasis on workplace accommodations for breastfeeding women, the Health Resources and Services Administration (HRSA) has provided employers with materials, training, and support to help them address newly passed federal and state labor laws. Their national campaign, Business Case for Breastfeeding[22], provides human resource departments with materials and strategies for breastfeeding women in the workplace.

It is in this context of changing labor laws and emphasis on supporting breastfeeding women in the workplace that Cornell University Career/Life Services in Human Resources explored breastfeeding support initiatives for University employees. This office secured grants and implemented programs to facilitate a supportive family-friendly breastfeeding atmosphere

across campus. Additionally, this office developed social networks for prenatal and breastfeeding women, prenatal education and postpartum breastfeeding support classes, and an extensive referral list of local community resources for university employees. These efforts were subsequently formalized into university policy. An interim policy on lactation and break time was published in January 2008, and finalized as CU Human Resource Policy 6.9 Lactation and Time Away from Work[23] in June 2008.

The purpose of this study was to examine the influence of institutional policies on employee breastfeeding behavior. In particular, the author investigated whether the implementation of institutional polices would differentially influence employees, and how this policy affected the likelihood that employees would continue to breastfeed when they returned to work.

METHODS

The Cornell Child Grant Subsidy Program (CCGSP) was established in 2001 to assist parents with child care challenges. Employees with a household income up to $150,000 are eligible for grants to spend on any legal child care for children up to age 13. In 2009, $1,660,000 was awarded to 882 employee families for child care support.

The CCGSP developed an extensive staff survey to assess the impact of the grant program on potential changes in the quality of child care purchased with grant funds and associated employee satisfaction. Data on family size, number and age of children, child care practices and parent demographics were collected. The author added questions regarding breastfeeding behavior to this survey, thereby providing an opportunity to assess the

breastfeeding practices of employees. *"When your youngest child was an infant, did you/your partner breastfeed?"* And *"Did you or your spouse breastfeed after returning to work?"*

All Cornell employees with at least one dependent child age 12 years or younger were sent the questionnaire through the employee electronic mail system (e-mail) in February 2009. The survey was administered by Survey Research Institute (SRI), an independent survey research firm. The initial correspondence was followed by reminder e-mails to non-respondents. Data collection ended March, 2009. One thousand forty-seven staff members completed the survey of a possible 2,564 employees; the response rate of 40.8%. Incomplete surveys, those with no response to the breastfeeding questions were eliminated, leaving a pool of 919; 35.82% of the total possible and 87.77% of completed and returned surveys. Based on data provided by SRI, there were no significant differences between respondents and non-respondents in academic/nonacademic and race/ethnicity variables, however, women were 2.6 times more likely to complete the survey than men.

Independent Variables

Demographic and work-related variables were considered independent variables and captured on the survey described below.

Demographic Variables

The survey included seven categories of annual household income: less than or equal to $20,000, more than $20,000 to $40,000, more than $40,000 to $60,000, more than $60,000 to $85,000, more than $85,000 to $100,000, more than $100,000 to $150,000 and more than $150,000. The lowest two categories were combined for incomes up to $40,000. Respondents

self-identified race by the following categories: white, black, Hispanic, Asian and American Indian. These categories were collapsed to white, black, and other given the low number of Hispanic (27), Asian (77) and American Indian (6) staff in the respondent pool. Marital status was ascertained using three response categories: married (866), single (128), and domestic partnership (26). Respondents who chose "domestic partnership" were combined with the married category for analysis. The four categories of education included: high school or less, some college, college degree, and graduate training or degree. Participants identified their sex. The respondents were divided into two groups based on the age of their youngest children: recent group had children less than 36 months of age and distant group had children 3 years and older.

Work-Related Variables

Respondents were asked to rate the flexibility of their work schedule to manage or balance work and caretaker responsibilities. The five categories of flexibility were: none, very little, some flexibility, as much as I need, and more than I need. "None" and "very little" were combined into one category representing the lowest level of flexibility. "As much as I need" and "more than I need" were combined for analysis to represent the most flexibility. The five categories for position type included: staff hourly, staff salaried, post doctorate, academic/non-faculty and academic faculty. Academic non-faculty and post doctorate categories were combined for analysis as the nature of work performed by both are similar, and the distinction between these two types of employees was not meaningful. Twenty 'unit' choices indicated affiliation with schools and colleges, service units and administrative offices. Colleges and schools included College of Agriculture and Life Sciences (CALS), Arts and Sciences,

Architecture, Engineering, Hotel Administration, Human Ecology, Industrial and Labor Relations (ILR), Johnson Business School, Law School, and Veterinary Medicine.

Given the small number of employees and the contiguous location on the same university quad, Architecture was combined with Arts and Sciences, and the Law, Johnson, Hotel and ILR Schools were combined based on similar small numbers of staff, and situated in relatively close proximity on campus. The remaining schools were treated as stand-alone units.

The service units and administrative offices included: Academic Programs and Institutes, Academic Support Services, Office of Human Resources, Office of Information Technology, Planning and Budget, President-Direct Reports, Provost-Direct Reports, Student and Academic Services-Direct Reports, University Communications, Alumni Affairs and Development, Campus and Business Services, Financial Affairs, Comptroller, Research and Advanced Studies, Risk Management and Public Safety, Chief Financial Officer-Direct Reports, Facilities Services, University Library System, and Gannet Health Clinic. These administrative units were grouped into three categories. 1) Library and Health, 2) Facilities Services Group, and 3) Administrative Group (i.e., staff supporting the business functions of the university). These staff are more likely to be office bound, work 9 to 5 office hours and be connected to administrative policies as opposed to the unique policies of a single college.

A total of nine units were used in the analysis of Distant group data. Given the small number of respondents in the Recent group, units were collapsed into three groups for analysis. The units were designated by letter in the data tables to protect the confidentiality of respondents who could be identified as pregnant during the study period.

An opportunity to respond to any child or elder care concern was included at the end of the survey: *If you have ideas on how Cornell University could help you manage work, elder care,*

and child care responsibilities, please share them. Qualitative data in response to this statement was reviewed for relevance to breastfeeding behaviors and practices after employees' return to work.

Data Analysis

The data, codebook, summary statistics by survey question, and text of open-ended questions were prepared by SRI and provided to the principal investigator for analysis. Data analysis was conducted using JMP 10.0.0 (SAS Inc., Clary, NC). Statistical significance was set at $p< 0.05$. Dependent outcome variables of interest were breastfeeding (yes or no) and breastfeeding after returning to work (yes or no). A chi-square test of independence was used to test the associations between characteristics of employee groups and the outcomes.

To assess changes in employee breastfeeding practices over time, two employee groups were created based on the age of the last biological child. Children's age groupings were created based on the following categories: Infant (0 – 17 months), Toddler (18 – 36 months), Preschool/Pre-Kindergarten (3 – 5 years) and School Age (5 – 12 years). The Recent group indicated their youngest child was 36 months or younger. The Distant group indicated their youngest children were 3 years of age or older.

Multiple logistic regression analyses were conducted to examine the predictors of the two breastfeeding behaviors (breastfeeding and breastfeeding after return to work) in Distant and Recent groups separately. The multiple logistic regression analysis was run for the Distant group with all independent variables that were significantly ($p<.05$) associated with the outcomes in the preliminary bivariate analyses for breastfeeding (i.e., education, marital status, income, position, unit). The process was repeated for the Distant group for breastfeeding after returning to work (i.e., education, position). Similar analyses were completed for the Recent group for

breastfeeding (i.e., education, position, and unit) and breastfeeding upon returning to work (i.e., position, unit). Independent variables having a statistically significant impact on breastfeeding that remained in the models are shown in Table 4.4. A multiple regression analysis was run combining both cohort groups. The results are displayed in Table 4.6. Review of written responses to the open-ended questions at the end of the survey was completed to assess emergent themes.

RESULTS

Table 4.1 shows the frequency distributions for each of the characteristics of the Ithaca campus sample responding to the survey by whether they or their partners breast-fed their youngest child. Overall breastfeeding was significantly ($p < 0.05$) associated with education, marital status, position, race and unit as described in more detail below.

All respondents had at least one child under 12 years of age; 80.8% breastfed their last child. Breastfeeding was more common (90.7%) among the highest income group, and less common among the lowest income group (72.7%). Breastfeeding among the remaining income groups was virtually the same (80% - 82.7%).

Little difference was found in breast feeding rates based on the sex of the respondent employee: female (80.1%), or male (82.3%). Very few single employees (10.5 %) responded to the survey compared to those reporting married or domestic partnership status. Single respondents were significantly less likely to breastfeed (8.1% vs 66.7%).

Table 4.1 Employee Characteristics by Infant Feeding Choice for their most Recent Child

N=963		**Breastfed**		**Did not Breastfeed**		**Missing**	P value
Item	**Description**	**N**	**%**	**N**	**%**		
		743	**80.8**	**176**	**19.2**	**44**	
Education							
	High school	35	67.3	17	32.7		<.0001
	Some college	70	62.5	42	37.5		
	College degree	241	76.5	74	23.5		
	Graduate	395	90.3	42	9.7		
Marital status						5	<.0001
	Married	665	82.8	138	17.3		
	Single	74	66.7	37	33.3		
Income							.063
	To $40,000	85	72.72	32	27.3		
	> $40,000 to $60,000	138	81.2	32	18.8		
	> $60,000 to $85,000	188	82.1	41	17.9		
	>$85,000 to $100,000	120	80.0	30	20.0		
	> $100,000 to $150,000	129	82.7	27	17.3		
	more than $150,000	68	90.7	7	9.3		
Gender						3	.412
	Female	458	80.1	114	19.9		
	Male	283	82.3	61	17.3		
Race							.012
	White	605	79.6	156	20.4		
	Black	21	77.8	6	22.2		
	Other	90	91.8	8	**8.2**		
Position Type						5	P<.0001
	Staff hourly	226	70.0	97	30.0		
	Staff salaried	270	80.1	64	19.2		
	PDoc,Acad non-Fac	104	92.8	8	7.20		
	Academic/Faculty	138	95.2	7	4.8		
Flexibility						3	.333
	None or Very Little	98	77.6	28	22.4		
	Some	383	82.7	80	17.3		
	As much as I need or more	260	79.5	67	20.5		
Unit							0.002
	A	152	87.9	21	12.1		
	B	96	89.9	11	10.1		
	C	34	82.9	7	17.1		
	D	34	80.1	8	19.1		
	E	52	74.3	18	25.7		
	F	75	83.3	15	16.7		
	G	23	88.5	3	11.5		
	H	29	65.9	15	34.1		
	J	244	76.0	77	24.0		

As might be expected, the sample was highly educated; 47.7% had earned graduate degrees, 34.3% college degrees, 12.2% had attended college and 5.6% had completed high school. Breastfeeding rates increased significantly with education. Staff with hourly positions breastfed considerably less than those with salaried or academic positions: 70% vs. 95.2%. Breast feeding was lowest among the facilities group (65.9%) compared to all other work units. Breastfeeding was lowest among Black employees compared to all other racial groups. The "Other" group was small but consisted of a large proportion of Asian staff who breastfed at the highest rate.

In summary, breastfeeding was associated with higher education, marriage, higher income, academic vs hourly position, and work unit as compared to those who did not breastfeed. Employee gender and job flexibility did not distinguish those who breastfed from those who did not breastfeed.

Distant and Recent Groups

Respondents were divided into two groups for analysis based on the age of their last or youngest children to detect any changes in breastfeeding behavior over time. Respondents with toddlers and preschoolers (children up to 36 months) were labeled "Recent". Respondents whose youngest children were 3 years and older were labeled "Distant". This division was necessary to distinguish between employees with "Recent" infant care and breastfeeding experience from those whose breastfeeding experiences could be up to 11 years prior to the survey, and not necessarily associated with employment at Cornell.

Characteristics of the Distant group (Table 4.2): 77.3% breastfed their last child and breastfeeding was significantly ($p < 0.05$) associated with education, marital status, income, race, position type and unit, as described below. Breastfeeding increased as income increased, from 70.5% in the lowest to 92% in the highest income groups. Similarly, breastfeeding rates increased with increasing education. The majority of the Distant group was married (82%), and 79.4% of married respondents breastfed their last children.

The Distant group was predominantly white (85%). Breastfeeding was lowest among whites (75.3%), and highest among 'other' (92.1%). Breastfeeding was highest among Unit A respondents at 87.9%, and lowest among Unit H respondents at 67.7%. The profile of breastfeeding respondents in the Distant group by breastfeeding status after returning to work is listed in Table 2a; of these respondents, 71.3% breastfed after returning to work. Those employees who breastfed after they returned to work were significantly more likely to have a graduate degree compared to a high school diploma, and have academic faculty vs. hourly positions.

Table 4.2 Characteristics of Employees whose Last Child was Born More Than 36 months ago (Distant) by Infant Feeding Choice

Table 2 Distant		Breastfed		Not Breastfed			
Item	Level	N	%	N	%	Missing	P value
N=579		438	77.3	129	22.8	12	
Education						1	.0001
	High school	25	69.4	11	30.6		
	Some college	49	58.3	35	41.7		
	College degree	147	72.8	55	27.2		
	Graduate	216	88.9	27	11.1		
Marital status						3	.0109
	Married	377	79.4	98	20.6		
	Single	58	65.2	31	34.8		
Income						14	.0488
	to $40,000	55	70.5	23	29.5		
	> 40,000 to $60,000	69	73.4	25	26.6		
	> $60,000 to $85,000	108	78.8	29	21.2		
	> $85,000 to 100,000	70	73.7	25	26.3		
	> 100,000 to $150,000	81	81.8	18	18.2		
	> $150,000	46	92.0	4	8.0		
Gender						3	0.84
	Female	282	77.1	88	22.9		
	Male	154	77.8	44	22.2		
Race/ethnicity						22	.0183
	White	356	75.3	117	24.7		
	Black	15	78.9	4	21.1		
	Other	49	92.1	4	7.6		
Position Type						4	.0001
	Staff hourly	144	66.1	74	33.9		
	Staff salaried	161	77.8	46	22.2		
	Post Doctorate/ Academic Non-Faculty	54	94.7	3	5.3		
	Academic/Faculty	75	92.6	6	7.4		
Flexibility						3	.0762
	None/Very Little	53	67.9	25	32.1		
	Some	218	80.2	54	18.8		
	As much or more than I need	165	77.1	49	22.9		
Unit						1	.0084
	A	94	87.9	13	12.1		
	B	38	80.8	9	19.2		
	C	21	84.0	4	16.0		
	D	19	70.4	8	29.6		
	E	35	71.4	14	28.6		
	F	41	76.0	13	24.0		
	G	13	86.7	2	13.3		
	H	19	57.6	14	42.4		
	J	143	73.7	51	26.3		

Among the Distant group, education, marital status, race, income, position type and unit were positively associated with breastfeeding behavior. For the group of Distant employees that continued to breastfeed after returning to work (BFRW; Table 4.2a), higher education and academic position were significantly associated with continuing to BFRW.

Table 4.2a Characteristics of Employees Whose Last Child was Born More than 36 Months ago (Distant) who Continued to Breastfeed After Returning to Work

Table 2a Distant Return to Work N=438		BF after return to work		No BF after return to work			
Item	**Level**	**N**	**%**	**N**	**%**	**missing**	**P value**
		300	**71.3**	**121**	**28.7**	**17**	
Education	High school	11	44.0	14	56.0	18	.0007
	Some college	26	56.5	20	43.5		
	College degree	111	77.1	33	22.9		
	Graduate	151	73.7	54	26.3		
Marital status	Married	262	72.8	98	27.2	20	.0527
	Single	35	60.3	23	39.7		
Income	to $40,000	34	61.8	21	38.2	26	.0887
	> $40,000 to $60,000	47	70.0	20	30.0		
	> $60,000 to $85,000	68	66.0	35	34.0		
	> $85,000 to 100,000	48	73.8	17	26.2		
	> $100,000 to $150,000	60	77.9	17	22.1		
	> $150,000	38	84.4	7	15.6		
Gender	Female	195	70.9	80	29.1	19	.8944
	Male	103	71.5	41	28.4		
Race	White	246	71.9	96	28.1	33	.5646
	Black	9	60.0	6	40,0		
	Other	33	68.8	15	31.2		
Position Type	Staff hourly	88	62.9	52	37.1	20	.0464
	Staff salaried	121	77.0	36	23.0		
	Post Doctorate/Academic Non-Faculty	38	76.0	12	24.0		
	Academic/Faculty	51	71.8	20	28.2		
Flexibility	None/Very Little	35	68.6	16	31.4	19	.9128
	Some	149	71.7	59	28.3		
	As much or more than I need	114	71.2	46	28.8		
Unit	1AgLS	62	68.9	28	31.1	18	.8050
	3 ARTS/ARCH	34	80.9	8	19.1		
	4 ENG	14	66.7	7	33.3		
	6 HUMEC	15	83.3	3	16.7		
	8 JOHNSON/IRL/ Hotel/Law	24	70.6.4	10	29.4		
	10 VET	28	70.0	12	30.0		
	12 Library/ Health	14	77.8	4	22.2		
	14 Facilities	13	68.4	6	31.6		
	20 Admin	95	68.8	43	31.2		

Characteristics of the Recent group are shown in Table 4.3 by breastfeeding choice; 86.6 % of the Recent group breastfed their last children. Breastfeeding increased significantly with increasing education from 62.5% for those having earned a high school diploma to 92.3% for those parents with graduate degrees.

Table 4.3 Characteristics of Employees Whose Last Child was Born less than 36 Months ago (Recent) who Continued to Breastfeed After Returning to Work

Table 4.3 Recent		Breastfed		Not Breastfed			
Item	**Level**	**N**	**%**	**N**	**%**	**Missing**	**P value**
N=362		**305**	**86.6**	**47**	**13.4**	**10**	
Education						1	.001
	High school	10	62.5	6	37.5		
	Some college	21	75.0	7	25.0		
	College degree	94	83.2	19	16.8		
	Graduate	179	92.3	15	7.7		
Marital status						10	.125
	Married	291	87.6	39	12.2		
	Single	16	72.7	6	27.3		
Income						7	.312
	to $40,000	31	77.5	9	22.5		
	>40,000 to $60,000	69	90.8	7	9.2		
	>60,000 to $85,000	80	87.0	12	13.0		
	>$85,000 to $100,000	50	90.9	5	9.1		
	>$100,000	70	85.4	12	14.6		
Gender						0	.425
	Female	176	85.4	30	14.6		
	Male	129	88.4	17	11.6		
Race						18	.933
	White	249	87.0	37	13.0		
	Other	42	87.5	6	12.5		
Position Type						0	.0006
	Staff hourly	82	78.1	23	21.9		
	Staff salaried	109	85.8	18	14.2		
	Post Doctorate/ Academic, Non-faculty	114	95.0	6	5.0		
Flexibility						0	.253
	None/very little	45	83.8	3	6.2		
	Some	165	86.4	26	13.6		
	As much or more than I need	95	87.1	18	15.9		
Unit						3	.011
	ADF	107	91.5	10	8.5		
	BCE	79	90.8	8	9.2		
	GHJ	116	80.0	29	20.0		

Breastfeeding was significantly associated with position type. It was lowest among those employees with hourly positions (78.1%) and highest among those with academic faculty positions (98.1%). Breastfeeding initiation was similar across the three job flexibility responses. Breastfeeding was highest among Unit D respondents (100%), and lowest among Unit J (71.4%).

Table 4.3a Characteristics of Employees Whose Last Child was Born Less than 36 Months Ago (Recent) who continued to Breastfeed after Returning to Work

Table 4.3a		BF after return to work		No BF after return to work			
Item	**Level**	**N**	**%**	**N**	**%**	**Missing**	**P value**
	N=305	**231**	**78.6**	**63**	**21.4**	**68**	
Education						**1**	.095
	High school	8	80.0	2	20.0		
	Some college	12	57.1	9	42.9		
	College degree	73	78.5	20	21.5		
	Graduate	137	81.1	32	18.9		
Marital status						0	.236
	Married	221	79.5	57	20.5		
	Single	10	66.6	5	33.3		
Income							.1224
	to $40,000	18	66.6	9	33.3		
	> $40,000 to $60,000	50	73.5	18	26.5		
	> $60,000 to $85,000	61	78.2	17	21.8		
	>$85,000 to $100,000	41	85.4	17	14.6		
	>$100,000	57	85.1	10	14.9		
						0	.469
Gender	Female	140	80.0	35	20.0		
	Male	91	76.5	28	23.5		
Race							.896
	White	189	78.4	52	21.6		
	Other	31	75	9	25		
Position Type						1	0.022
	Staff hourly	56	68.3	26	31.7		
	Staff salaried	90	84.9	16	15.1		
	Post Doctorate /Academic, Faculty	84	80.2	21	19.8		
Flexibility						3	.084
	None or very Little	29	65.9	15	34.1		
	Some	128	80.5	31	19.5		
	As much or more than I need	24	81.3	17	18.7		
Unit						10	.008
	AFD	92	87.6	13	12.4		
	BCE	56	76.7	17	23.3		
	GHJ	80	70.8	33	29.2		

Characteristics of the Recent group who breastfed after returning to work are listed in Table 4.3a. Among this group, 78.6% continued to breastfeed after returning to work. Breast-feeding practices were similar across racial groups. Breastfeeding rates were not significantly associated with income. Breastfeeding was significantly associated with position type, lowest among hourly employees. Breastfeeding was not significantly associated with job flexibility; but was lowest among those employees with very little or no flexibility (65.9%) and highest among those employees with the most flexibility (81.3%). Among the Recent group, no differences in continued breastfeeding were found by marital status, race, income, or flexibility of their position. Education, position type and unit were the only independent variables associated with breastfeeding. Among units, the facilities group was significantly different from all others. Separate multiple regression analysis on the recent group demonstrated that position was a predictor of breastfeeding, and unit and position were predictors of BFRW.

Table 4.4. Summary of logistic regression models

Group	Outcome	Predictor	DF	Chi Sq	P value
Distant	Breastfeeding	position	2	23.1240	<..0001
	Breastfeeding return to work	education	3	9.872	0.019
Recent	Breastfeeding	position	2	2.404	0.003
	Breastfeeding return to work	unit	2	13.998	0.002
		position	2	12.156	0.001

In the combined regression model for breastfeeding, position and the time associated interaction term remained significant. The effect of job position on breastfeeding did not depend on time. In the combined model for breastfeeding on return to work, education was the only significant predictor of breastfeeding.

Table 4.5. Combined Model

	Outcome	Predictor	DF	Chi Sq	P value
Combined Model	Breastfeeding	Position	2	45.208	<.0001
		Time	1	7.762	.0005
	Breastfeeding return to work	Education	3	16.526	0.0009

Although the survey assessed family experiences, respondents were both male and female, and a preliminary review of data did not reveal differences by gender. Nonetheless, it is quite possible that female employees may experience changes in the work environment differently than their male counterparts. A sensitivity analysis of the responses from female employees was conducted to further explore the strength of these results, and provide a clearer picture of the experiences of working mothers (Table 4.6). A similar increase in breastfeeding (+8%) and BFRW (+10%) was noted between Distant and Recent groups.

Table 4.6 Female Employees Breastfeeding Experience by Group

Table 4.6	**Breastfed youngest**						
	Total	**Y**	**%**	**N**	**%**		**P value**
All	571	458	80.2	113	19.8		
Distant	366	282	77.05	84	22.05		.0097
Recent	205	176	85.9	29	14.1		
	Breastfed after Return to Work						.
	Total	**Y**	**%**	**N**	**%**		**P value**
All	450	335	74.4	115	25.6		
Distant	275	195	70.9	80	29.1		.0293
Recent	175	140	80.0	35	20.0		

To further examine the impact of the work policy impact on the breastfeeding among the lowest wage workers, an examination of the changes in breastfeeding among women by staff positions was conducted (Tables 4.7and 4.8).

Table 4.7 Female Employees Breastfeeding by Job Position and Group

		Breastfed youngest					
Distant	**Position**	**Y**	**%**	**N**	**%**		**P value**
	Staff Hourly	117	67.24	57	32.76		
	Staff Salaried	102	80.95	24	10.05		**<.0001**
	Post Doc, Academic, Faculty	61	95.31	3	4.67		
Recent	**Position**	**Y**	**%**	**N**	**%**		**P value**
	1Staff Hourly	60	80.0	15	20.0		
	Staff Salaried	66	83.54	13	16.46		**.0035**
	Post Doc, Academic, Faculty	49	98.0	1	2.0		

Table 4.8 Employees Breastfeeding after Return to Work by Job Position and Group

		BFRW					
Distant	**Position**	**Y**	**%**	**N**	**%**		**P value**
	Staff Hourly	72	63.13	42	36.84		
	Staff Salaried	73	71.57	29	28.43		**<.0046**
	Post Doc, Academic, Faculty	50	86.21	8	13.79		
Recent	**Position**	**Y**	**%**	**N**	**%**		**P value**
	Staff Hourly	41	68.33	19	31.67		
	Staff Salaried	56	86.15	9	13.85		**.0260**
	Post Doc, Academic, Faculty	42	85.71	7	14.29		

Among female employees, the differences in breastfeeding initiation and BFRW by job position is significant. And, while the rates for BF and BFRW improve from Distant to Recent time periods, the disparity in BFRW by job positions is significant for both groups.

In the combined regression models, time was not a significant factor in either model. Job position for female employees is the critical factor for breastfeeding and BFRW (Table 4.9).

Table 4.9. Combined Model for Female Employees

	Outcome	**Predictor**	**DF**	**Chi Sq**	**P value**
Combined Model	Breastfeeding	Position	2	8.7515	0.0126
		Education	3	10.3708	0.0157
	Breastfeeding return to work	Position	2	16.9072	0.0002

Comments of Survey Respondents

An open-ended question at the end of the survey invited respondents to add any other comments on any aspect of work life and family concerns: *If you have ideas on how Cornell University could help you manage with elder care and child care responsibilities, please share.* Forty individuals mentioned breastfeeding; of these, seven comments were not directly relevant and included such responses as: *My spouse actually breastfed* and *I adopted my child and did not breastfeed*. The remaining 33 comments were made by 31 women who breastfed their last child (39.3% Distant, 60.6% Recent) and breastfed after returning to work; and two women who did not breastfeed their last child. The comments were grouped into categories related to structural

challenges to breastfeeding (child care, parking, pumping rooms), influence of colleagues (supervisors and co-workers), and comments on the University policy (Table 4.10).

Table 4.10 Summary of Qualitative Responses: *How CU could help you manage...with child care responsibilities?*

Topics	Recent		Distant		Total	
	N	%	N	%	N	%
Child Care	3	100	0		3	9
Parking	3	75	1	25	4	11
Pumping rooms	9	64	5	36	14	40
Schedules	1	50	1	50	2	6
Supervisors	2	66	1	33	3	9
Colleagues	2	66	1	33	3	9
Policy	1	17	5	83	6	17

Practical concerns and considerations of working parents dominated the responses. More comments addressed issues with pumping rooms than any other topic. Examples are below:

> *Lactation rooms should be easier to access and remain unlocked.*
>
> *When I returned to work there was no lactation room for privacy. It was very uncomfortable to express milk in front of students. Lactation rooms are a must!*
>
> *Please continue to offer the child care grant, promote workplace flexibility, and preserve the lactation rooms (I pumped in a storage room... private, but not comfortable or conducive to long-term use).*

Lack of convenient parking to facilitate timely trips home or to child care locations during lunch or other breaks was described as a barrier to breastfeeding.

It would be very helpful to dedicate some parking spots to primary care parents of infants (or give a handicap permit to breastfeeding mothers of infants). When my children were infants, I often had to leave work for short periods of time to nurse/pump.... I would have trouble finding a parking spot on my return and hence these absences would be very costly on my already limited time at work.

When I was breastfeeding, I paid for a J-lot permit so I could run home all the time to breastfeed. I think it would have been nice to have had some kind of arrangement that allowed me to do that more easily. Women who live far away will just not breastfeed, which is a real problem for the health of their infants.

I am very disappointed with parking while I am breastfeeding. I commute 2 days a week from Canandaigua to campus.... Thankfully, I get to work from home 3 days a week. At any rate, when I went to see what my options were for parking and pumping, I was told that the only thing I could do was pay 180 dollars UP FRONT and then I would get a temp pass to park near work. I just returned from maternity leave and could not afford this. There is no bus that goes ANYWHERE near my building and I have to walk from A LOT with my breast pump, and several other bags that I use for transporting my work back and forth from home. I feel that Cornell should be more respectful of moms who are breastfeeding and parking. I would have gladly paid the money as I have paid for parking in the past, out of my paycheck, but that was not an option.

Two commented on scheduling, one was extremely positive; the other was highly critical regarding allowances for extended breaks and more frequent breaks.

For me, breastfeeding would have been too difficult because of my work schedule. I would have liked for it to have been easier. There was no one telling me I had rights and what to do, so I didn't breastfeed.

My office allows me to work at home and to have a flexible part-time (4.5 hours/day) schedule, so I was free to pump as much as I needed. I was able to continue to exclusively breastfeed twins until they were 1 year old. That is entirely due to the fact that I had an extremely flexible schedule and the privacy needed to pump (and a childcare provider that was willing to work with me). Also, my managers relieved me from evening and overnight job responsibilities so that I could breastfeed my children.

There was feedback regarding insensitive comments made by coworkers, highlighting the need for more information sharing regarding university policies and breastfeeding rights.

Might be nice to have a support network for faculty moms of babies--we get some heat because our dinosaur colleagues assume that having a baby means we are "not serious" about science.

I think it is helpful for you to know that many of our colleagues who are single, childless and not in a position to care for their elders resent these important initiatives. I've maintained a modest schedule for breast milk pumping, and was completely shocked when a colleague challenged my right to do so. Fortunately, my supervisor supports this. I guess it would be helpful for {The University) to continue publicizing the value of these initiatives.

Thank you so very much for the progress with the lactation rooms. I hope information about them has become standard when employees inquire about maternity benefits. I still hear too many women say it would be too hard to continue breastfeeding when they return. I know it's a very personal choice, and I think more outspokenness on Cornell's part could be influential.

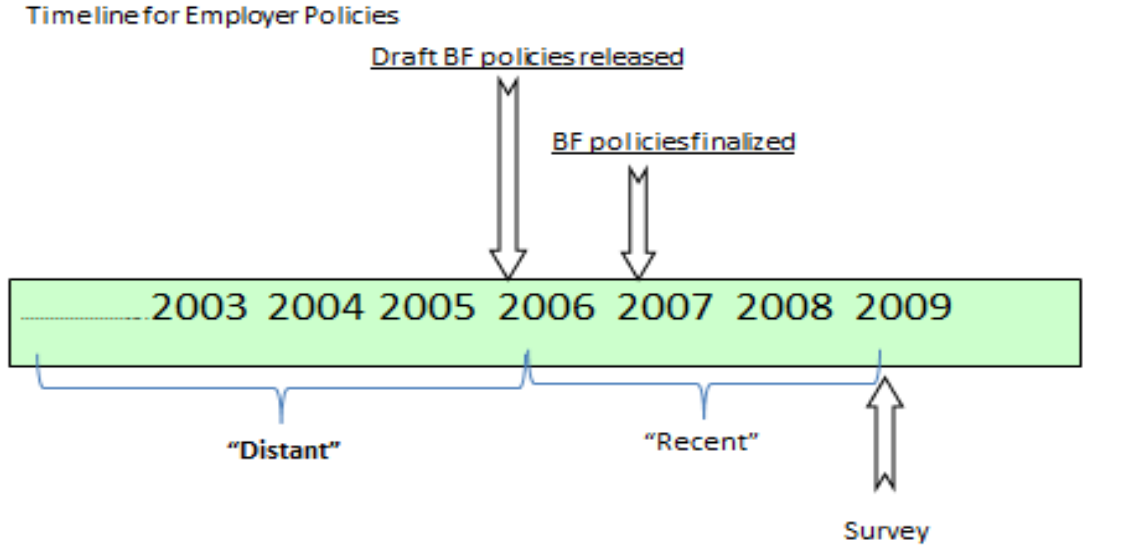
I really benefited from the HR series on breastfeeding, I highly valued attending. I would welcome any additional sessions on balancing work and motherhood, parenting, and related topics.

DISCUSSION

The creation of a supportive work environment is an integral part of the Career/Life Services mission. Establishing breastfeeding rooms for pumping became part of their strategy in 2005 to support working mothers. The first rooms were established in the University's main administrative building, Day Hall, and in the School of Veterinary Medicine. At the time of the survey, 14 breastfeeding rooms were available across campus. Some were part of an existing lavatory as in Day Hall, others were uniquely designed for the needs of breastfeeding mothers as building renovations or new construction was planned. Additionally, orientation of all new university staff by Career/Life Services now includes information regarding work flexibility options and the responsibility of supervisors in facilitating employee requests for breastfeeding accommodations.

The creation of two employee groups, based on the age of the employee's last child, was necessary to detect changes in breastfeeding behavior over time. The Recent group represented the breastfeeding experience of staff with children 0 to 36 months prior to the survey. Development of the draft and posting of the final University breastfeeding policies occurred during this time period (See Figure 1).

Figure 4.1 Timeline depicting Policy Implementation, Survey Distribution and Age Groupings.



Over time a positive trend in breastfeeding practices and behavior and the continuation of breastfeeding upon return to work was clearly demonstrated in the data set. The breastfeeding rate for the entire respondent group (80%), the Distant group (78%) and the Recent group (87%) surpasses the Surgeon General's Healthy People 2010 target for breastfeeding initiation of 75%.

The 2009 national rate for ever breastfed was 73.9%, the New York state rate was 76.4% (CDC, 2009): the respondent sample exceeded these rates as well. The increase in breastfeeding rate displayed by the Recent group above the Distant group (+ 9.35%), is greater than any improvements found during the same time period in national or state rates (+2% change). For example, the Recent group breastfeeding rate is higher than the rate reported in Tompkins County in 2009 (82%). Breastfeeding after returning to work was 71.3% for the Distant vs. 78.6% for the Recent group. However, no comparable data for the county, region, or state on the rate of breastfeeding among women returning to work was available. Additionally, differences in breastfeeding behavior by race and income levels disappeared in the Recent group.

According to national data, a typical breast feeding mother has a middle to upper income, is white and married, and has some college education[24]. Conversely, women who choose not to breastfeed are more likely to be non-Hispanic black, with low income, unmarried and with less than a high school education. National data also indicate that low wage workers do not continue to breastfeed after returning to work due to the nature of their positions[25]. Workers earning a higher wage are far more likely to have greater flexibility and therefore, greater opportunities to continue to breastfeed after returning to work[26]. The difference in breastfeeding behavior typically predicted from demographic descriptors disappeared after implementation of workplace breastfeeding support policies as evidenced in the Recent group.

Differences in breastfeeding remained after implementation of workplace breastfeeding policies when examined by position type. Position type may embody characteristics of the job situation that are not mitigated by policy changes. This finding could be a reflection of the demands of hourly workers whose positions are part-time and inherently have time sensitive tasks during work hours; for example, breaks are not required for those employees who work less

than four hours. Likewise, the environment of most academic appointments (private offices, support staff, independent nature of work assignments, etc.) provide a positive advantage for academic staff who are breastfeeding.

Surprisingly, flexibility was not a significant work factor for either group. Employees from both groups reported a fairly high level of flexibility regardless of other factors. This high rating could be a manifestation of the supportive family-friendly work environment that has garnered the university so much recognition and awards, and may explain why this factor was not significant.

Unit or work location was a significant factor for the Recent group only. This finding could be the result of uneven policy implementation, staff turnover, supervisor training, and the ability of supervisors to offer support. The resourcefulness of individual supervisors to accommodate staff requests may also be at play. The following comments from staff shed light on the individual accommodations made in their work locations:

> *My supervisors are incredibly supportive and continue to do their best to provide me with private places to pump but not having an officially designated area is stressful.*
>
> *Fortunately, my office found a place for me to pump that was within the building; if I'd had to pack up my things and walk several blocks to a Designated Pumping Station, I would have been far less likely to continue breastfeeding. Encouraging individual building managers to find little spaces (doesn't take much) would be a good idea, even though I appreciate the existence of pumping stations.*

Suggestions for improving additional structural barriers to breastfeeding were provided. The distance and time involved in walking to and from assigned parking lots, limited short term parking for dropping off and picking up passengers, and very few short term parking spaces for women to use if going home during the day were mentioned as barriers. The limited number of pumping rooms, and rooms that did not lock were additional concerns. Even when pointing out

barriers, respondent comments were predominantly positive: thanking administration for setting aside space, even if not ideal space for pumping.

Study Limitations

Several limitations may have affected study results. First, the initial analysis included responses from both male and female employees. As a preliminary review of data showed similar breastfeeding responses, analysis was conducted using the entire sample. Subsequently, a sensitivity analysis was conducted using only data from women. Second, the child age categories used to create employee groups; the categories 18 – 36 months, and 3 - 5 years, were not discreet. This may have confused parents with children exactly 36 months as to which category to choose. Third, the experiences of employees in the Distant group could be up to 11 years prior to implementation of the survey. Respondents' memories of prior events could be subject to their interpretations and not verifiable through other sources. Fourth, no recorded information on length or exclusivity of breastfeeding was available which could have affected data accuracy. A respondent's interpretation of 'breastfeeding' can also vary dramatically, from exclusive breastfeeding to feeding from the breast once a day. Fifth, no data were available on the hospitals where these women delivered which could influence breastfeeding initiation. Nor was the length of maternity leave, which has also been shown to influence breastfeeding duration and exclusivity recorded. There was no information on length of employment which would have influenced exposure to University policies, and could have affected responses. Secular factors, not explored in this study, could also have influenced breastfeeding initiation and duration. Health care provider, health department and lay group activities, and mass media campaigns could have affected responses. All data were self- reported, no verification or follow up to

ensure accuracy was possible. Lastly, the data only allow examination of associations, not cause and effect.

Given the number of working women of childbearing age in the workforce, employer supports for family health are imperative if this segment of the workforce is to remain productive. Occupational and environmental health nurses are critical advocates for the health of all employees. Ensuring current breastfeeding policies are understood and implemented and reinforcing the health benefits of breastfeeding for women and infants when new policies are being considered is an additional strategy for advocating for family-friendly workplace policies.

CONCLUSION

The introduction of institutional policies for breastfeeding, and training to increase supervisors' awareness of the need for such accommodations is an essential step in creating a family-friendly work environment. Many institutional changes were realized during the 36 months prior to the survey, including changes in university policies, supervisor training, staff orientation and establishment of breastfeeding support groups.

The influence of institutional supports for breastfeeding was assessed by grouping employee data by the age of their youngest child. Comparing the data from the Recent group to the Distant group shows an increase in breastfeeding (+9%) and an increase in BFRW (+7.3%). This pattern was repeated in the sensitivity analysis of data from female employees: Breastfeeding (+9%), and BFRW (+10%). It appears that employees' patterns for initiating breastfeeding and then continuing to breastfeed after returning to work have improved over time. However, regression modeling indicate that for female employees the advantages of work position (academic status) were more significant than all other factors for BFRW.

Although these data were self-reported, an increase in breastfeeding overall and an increase in the number of employees who continued to breastfeed after returning to work is both positive and encouraging. This finding indicates that the efforts of Career/Life Services to institute family-friendly policies which include breastfeeding-specific support strategies have had a positive influence on employees' breastfeeding behavior. These data support the tenants of the Social-Ecological Model demonstrating that supportive changes in the work environment resulted in positive changes in staff breastfeeding practices. Additional work is warranted to better understand the relationships between employer policies regarding breastfeeding at the workplace and employees' breastfeeding choices and to explore best possible strategies to support women working in low level (staff or hourly) positions.

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CHAPTER 5: CONCLUSIONS

The papers in this dissertation examine aspects of breastfeeding support experienced by low income women in three different settings: a maternity hospital designated as a Baby Friendly Hospital by the World Health Organization, a community-based nutrition education program for low income families that implemented home visits for breastfeeding mothers, and a university where employee policies in support of breastfeeding had just been enacted. As summarized below, in each setting, changes made to support breastfeeding had a positive impact. For women delivering at a Baby Friendly Hospital, the supportive policies of the Baby Friendly Hospital Initiative (BFHI) resulted in breastfeeding discharge rate of 73%. Based on interviews, many women would not have initiated breastfeeding, or would have given up before discharge without the assistance of hospital based lactation consultants as required by the BFHI. WIC peer counselors were the only community breastfeeding support reported. For women participating in the Expanded Food and Nutrition Education Program (EFNEP), peer support provided by EFNEP educators at home visits had an impact on breastfeeding duration. Women receiving home visits, on average, doubled the breastfeeding duration goals they had set at enrollment. Lastly, the implementation of employee policies in support of breastfeeding resulted in an increase in the overall breastfeeding rates from pre to post implementation (+9.35%), and an increase in breastfeeding after employees returned to work (+2%). Given the overwhelming benefits of breastfeeding in providing optimal nutrition for infants, the change in each program had the potential to contribute to long term health of the infants they served.

The first study investigated how BFHI protocols were experienced from the point of view of first-time low-income mothers interested in breastfeeding. Their in-hospital experience was positive and reflective of the first nine steps of the BFHI protocol. Their testimonials indicated that the presence of a hospital lactation consultant was key in their experience for breastfeeding initiation, problem solving and moral support. As a group, the women in this sample struggled with breastfeeding challenges, even when committed and determined. Outside of family, there was a dearth of organized, systematic community support. Many women expressed disappointment in not having a hospital contact after typical working hours or overnight via the "800 hotline" number supplied by the hospital for this purpose. In the experience of these low income women, only the WIC Peer Counselors were available for reliable community-based breastfeeding support. That other women had lived through similar situations and were speaking from personal experiences resonated with the women in this sample. There was no mention of any other community-based supports or groups or any referral to any other resource. In-hospital implementation of steps 1 – 9 was confirmed via interviews; the hospital lactation consultants were highly valued by participants.

The EFNEP intervention was undertaken to explore whether a concerted effort to complete home visits to support women choosing to breastfeed would have an impact on breastfeeding outcomes as compared to group education among a similar low income group of program participants. The women receiving home visits in the first week post-partum surpassed their breastfeeding goals by 100%. The timely presence of a caring and knowledgeable person at a time shown to be critical for breastfeeding cessation resulted in breastfeeding durations beyond the initial goals set by the pregnant women in this sample. Compared to usual care, the treatment groups were significantly more likely to breastfeed. Compared to previous program years,

enrollment of both prenatal and breastfeeding women increased significantly. The women in the outreach/group education cohort on average breastfed just over 8.5 months. This was in keeping with their stated goals. The women in the Home group breastfed five months, twice their state goals. The results here underscored the value of home visits as a supportive strategy for helping women reach their breastfeeding goals – and beyond.

In the case of Cornell University employees, the implementation of breastfeeding policies which included supervisor training and designation of specific rooms for breastfeeding women seemingly leveled the demographic differences typically noted between those who continue to breastfeed and those that wean when returning to work. These accommodations eliminated all differences except job position. In a university setting, job position – as an academic versus hourly worker – is quite striking. Academics are not punching clocks, have more flexible start and end times to their days, can literally work 24/7 if needed given electronic communications, and typically have an office. Hourly workers are much more regimented, cognizant of time for breaks and lunches given their hourly status, and rarely have offices. No breastfeeding policy can fix the nature of the job requirements. But, nonetheless, changes in the institutional policy had a positive impact on the proportion of infants who were breastfed among university employees.

From the lens of the social ecological model, behavior is shaped by the factors that include those exerted by the macro and micro-environments in which we live, work and play. For pregnant women, particularly women living in poverty, environmental challenges and barriers to healthy living have been well-documented. Breastfeeding, as a healthy behavior, is a case in point. Women report being influenced by the availability of tangible supports that minimize the challenges or reduce the barriers to breastfeeding. These papers show positive

results on breastfeeding when environments and supporting policies, personnel, and protocols are in place to support women in their breastfeeding decision.

METHOLOGICAL CONCLUSIONS

Qualitative Research

In qualitative research the data for analysis are the words spoken by or recorded from study informants. Coding and manipulation of data is made more manageable with use of various software packages. But, software does not think or feel – the investigator must interpret, attach meaning, decide relevance and significance of the data, and where possible, explain relationships of any new findings to other research or similar work. Identifying patterns, developing themes and findings is a time consuming process. The process is inductive and iterative. Reviewing coding strategies to ensure consistency, organizing data to display in various sorts, reading and re-reading transcripts requires perseverance for findings to emerge from the data. Data can be organized by various categories, key words or phrases, then summarized and reported.

All the interviews, transcriptions and analysis of data were completed by the principal investigator. This repetitive process enhanced the analysis of the data. It became clear what the key points of support and frustration were for these women. The emotion in their voices, and the detail with which some of them described their situation was palpable. Telling their story was informed by their words, and their feelings about their experiences facilitated accurate analysis and interpretation of this data.

Program-based Research

Conducting research and collecting data in the context of an operating program is challenging. Use of staff over a long period of time, in the case of the EFNEP project, one full

year, stretches their capacity to meet program expectations, adhere to study protocols, and keep up with additional data collections steps. While this group of staff were well-trained, and supported, they remain peer/paraprofessional educators who would rather interact with, coach, and educate participants, than carry out research. Research is not their primary strength or interest. They did not intend to be conducting field research, even though they fully supported the research reported here. Without an additional infusion of funds to support research aides to collect data, field research with program staff provides insight into program best practices and ideas for future exploration.

RECOMMENDATIONS

Political support and financial investment are needed to protect, promote, and support breastfeeding to realize its advantages to children, women, and society.[1]

National recommendations for improving breastfeeding initiation and duration have been well researched and put forth in the 2000 HHS Blueprint for Action on Breastfeeding, then updated in the 2011 Surgeon General's Call to Action to Support Breastfeeding and the 2008 HHS Business Case for Breastfeeding. The recommendations in these national policy documents are reasonable and actionable. Internationally accepted policies for hospital treatment of breastfeeding women (WHO, BFHI) have been updated and revised. Lacking is the political will of policy makers, health care and insurance providers and employers to fully embrace the recommendations that have already been vetted, published and endorsed by all relevant federal agencies, medical care providers, associated professional groups, and advocates. The most critical recommendation would be to examine how best to implement these policies and protocols.

Based on the findings of this dissertation, there are specific programmatic steps that could facilitate breastfeeding among low income women. Programs that provide prenatal care and

anticipatory guidance for low income women to prepare them for breastfeeding are few. In New York State, the Medicare program that funds pregnancy related services is known as the Prenatal Care Assistance Program (PCAP) and provides routine prenatal care, hospital care, and health care for at least two months postpartum. The Special Supplemental Nutrition Program for Women, Infants and Children (WIC), provides income eligible women food and nutrition counseling. Postpartum women are eligible up to six months, or if they continue to breastfeed, up to one year. Participants receive food and nutrition education. The Supplemental Nutrition Assistance Program-Education (SNAP-Ed) is the educational arm of SNAP. This program provides nutrition education targeted to SNAP recipients with core messages to address childhood obesity and food resource management. The Expanded Food and Nutrition Education Program (EFNEP) is targeted to low income families with children, including women of childbearing age, and provides nutrition education. Only the WIC program requires breastfeeding be addressed as a topic with participants. Whether, and with what intensity, breastfeeding is discussed in the remaining programs is at the discretion of the program implementers. Eligibility for each of these programs is based on the federal poverty guidelines; income eligibility is very similar across programs. Presumably one could participate in all of these programs at the same time. If all programs delivered a strong, supportive, coordinated breastfeeding message, one could imagine a greater impact than is currently seen. More important, however, is the recommendation to intentionally and coherently coordinate program activities to maximize the strengths of each of these complementary programs to provide seamless breastfeeding support.

Specific recommendations to consider:

Prenatal care providers:

- Employ peer counselors or lactation consultants to provide education, information, and classes, and facilitate supportive discussion groups for prenatal and postpartum women.
- Institute an antenatal protocol of anticipatory guidance to be integrated into each prenatal visit.
- Develop relationships with maternity hospitals to ensure infant feeding decisions are communicated to hospital staff, and mothers are confident that their breastfeeding intentions will are understood by all care providers.

Maternity hospitals:

- More universally implement the BFHI protocols.
- Contract with WIC or train and deploy peer counselors employed by the hospital to facilitate the transition between hospital and home.
- Implement home visits for all breastfeeding infants, or establish relationships with other agencies to ensure that all breastfeeding dyads have at least one postpartum home visit within one week of hospital discharge.
- Establish and staff breastfeeding hot lines to ensure breastfeeding women have 24/7 accessibility to a breastfeeding consultant or counselor to address questions and problems that might occur immediately.

Peer support:

- Fund WIC Peer counselor programs at a level to educate and follow all WIC participants interested in breastfeeding starting as soon as possible during pregnancy, through the postpartum period.
- Consider contracting with maternity hospitals serving low income women to serve as the community arm of the BFHI as described above.

Prenatal and postpartum education:

- Fund expansion of EFNEP to address the need for community antenatal and postpartum breastfeeding education classes for low income women.
- Coordinate BFHI designated hospitals' community support with WIC Peer Counselor programs for antenatal and postnatal breastfeeding contacts.

Employers:

- Examine family leave policies
- Investigate steps for ensuring access to pumping and storage facilitates for breastfeeding employees.
- Implement and/or publicly endorse existing policies that support breastfeeding employees.

The world is still not a supportive and enabling environment for most women who want to breastfeed.[2]

In addition to program coordination, small environmental changes that would support all mothers with young children, and in particular breastfeeding women, are needed in all the public spaces they frequent. Shopping malls, grocery stores, hospitals, bus stations, libraries, social service and other public waiting rooms could consider family rest rooms with baby changing

stations, and quiet, clean spaces for women to pump or breastfeed. Public transportation (bus, subway, etc.) accommodations for strollers, such as wider distances between seats, or open sections to park strollers would make travel easier and less stressful. These are but a few adjustments that would make it easier for all mothers with small children to navigate public spaces.

Women should not feel bullied or emotionally blackmailed into breastfeeding by one over-zealous section of society any more than they should be made to feel ashamed for breastfeeding in public by another. Breastmilk provided exclusively for at least six months is unequivocally the best nutrition a baby can receive; women and their families need respectful advice to make the choice wherever that is possible[3].

A change in the public discourse around breastfeeding would be beneficial for all women considering breastfeeding. The rise of social media as a force driving or reflecting public opinion has had an unsettling influence on the tenor of highly charged social issues. Breastfeeding, especially the discussion of breastfeeding in public, is an issue with highly vocal, compassionate people on both sides. With more women breastfeeding in public, negative voices seemingly have become louder. "Mommy shaming" – both of those who do and don't breastfeed – has surfaced as an ugly phenomenon.

Imposition of breastfeeding on new mothers is not the intent here, nor should it be. More effort is needed to ensure changes in policy, public education, and a supportive, more baby friendly culture is fostered to benefit all mothers. Support for all women choosing to breastfeed should be an imperative for health care providers, community nutrition programs and employers wishing to maximize the opportunity to give children the best possible start toward good health.

Given the overwhelming benefits of breastmilk versus any substitutes, it is incomprehensible that anything but breastfeeding would be chosen by mothers for their babies except in the rarest of circumstances.

Future Research

There are a number of questions regarding breastfeeding initiation and duration that would benefit from further investigation. Regarding BFHI Step #10 (Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital):

- What are the successful examples implemented by BF Hospitals that extend support into the community?
- Where, and in what communities, have these efforts been most successful?
- What breastfeeding outcomes have been realized with these protocols?
- What community investments are necessary to implement these protocols?

Regarding employer support:

- What incentives would encourage employer accommodations of employee supports for breastfeeding?
- What are the most helpful employee accommodations from the perspective of the employees, and the employers?
- What organizational supports are most important to foster an atmosphere of acceptance for working mothers?

Implications for low income women

Success in breastfeeding is not the sole responsibility of a woman; the promotion of breastfeeding is a collective societal responsibility[4].

Poverty is a risk factor for poor health. The fact that the majority (53%) of infants in the US are born to women living at 185% of poverty or less who participate in the WIC program raises the stakes on any discussion of maternal and infant care for low income women. Given the

importance of breastfeeding for infant development and the prevention of chronic diseases in later life underscore the significance of this opportunity to positively influence the health and wellbeing of a large and growing portion of the US population. Steps that could be taken to improve the health trajectory of low income women and their children should be encouraged. Breastfeeding is one of those steps. Indeed, all mothers and infants could benefit from a more robust system of support and encouragement for breastfeeding in all settings and circumstances.

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