

Hawai'i WIC's Unique Breastfeeding Initiatives

Christina Shoemaker Simmons, Pratisha Budhiraja, Cheryl B. Prince

Hawai'i State Department of Health

Abstract

Hawai'i has its own unique breastfeeding environment--breastfeeding initiation rates exceed national goals, yet breastfeeding duration decreases sharply after the first few weeks. This manuscript presents a review of three programs Hawai'i Women, Infant's and Children's Special Supplemental Nutrition Program (WIC) of the Hawai'i Department of Health has instituted to increase the initiation and duration of breastfeeding among its participants. These three projects are: The Breast Pump Program and evaluation, The Nursing Drape Project, and the Pumps in the Schools Program. The WIC Breast Pump Program is an open system and accounts for women in a variety of work/school environments. Success in such a system is more challenging to determine; however, any documented changes in breastfeeding duration may be more significant than in a restricted setting. Consequently, WIC began an evaluation of its Breast Pump Program in 2002. Embarrassment has been shown to be a number one breastfeeding concern for WIC women across the nation so Hawai'i WIC designed, created, distributed and evaluated their own nursing drape that is both culturally acceptable and inexpensive. Results of this project are presented along with cost saving and implications to other states. The goal of the Pumps in the Schools Program is to increase the teen breastfeeding prevalence and duration for WIC high school students by providing WIC purchased hospital grade electric breast pumps and placing them in a supportive classroom setting. The program serves to decrease at least one barrier to breastfeeding for these high-risk mothers. Hawai'i WIC is tackling working and schooling issues, duration, and embarrassment about public breastfeeding. In essence, Hawai'i is changing the image of WIC to be 'the breastfeeding people' instead of the 'formula give-away program'.

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Breastfeeding may be the most highly underrated public health measure for health promotion and disease prevention. Its preventive benefits are paramount during the first few formative years and last a lifetime. Breastfeeding is nurturing, prevents childhood illnesses, prevents childhood obesity, is cost effective, decreases sick visits to the doctor, is beneficial for the mother's health, and the list goes on. The challenge for public health workers is convincing the public at large, and low-income families in particular, that these benefits far outweigh any barriers to breastfeeding. We know from extensive research that "...when given adequate support, low income women, regardless of their demographic profile will choose to breastfeed, will breastfeed

longer, and will breastfeed exclusively..." (Lazarov, 1994).

As documented by Healthy People 2010, "Breast milk is widely acknowledged to be the most complete form of nutrition for infants with a range of benefits for infants' health, growth, immunity, and development. The benefits of breastfeeding include decreased new cases or severity of diarrhea, respiratory infections, and ear infections, among others, and reduced cost to the family. In addition, breastfeeding has been shown to improve maternal health, with demonstrated effects, including reduction in postpartum bleeding, earlier return to pre-pregnancy weight, reduced risk of premenopausal breast cancer, and reduced risk of osteoporosis, continuing long after the

postpartum period. In general, the American Academy of Pediatrics considers breastfeeding to be ‘the ideal method of feeding and nurturing infants’” (USDHHS, 2000).

In Hawai‘I, the job of breastfeeding promotion is taken seriously. At the Hawai‘i WIC Services Branch (Women, Infants and Children’s Special Supplemental Nutrition Program) of the State Department of Health, a number of breastfeeding initiatives have been implemented over the past few years. Hawai‘i has its own unique breastfeeding environment where breastfeeding initiation rates exceed national goals, yet breastfeeding duration decreases sharply after the first few weeks (Carmichael, Prince, Burr, Nakamoto, Vogt, 2001; Novotny, Hla, Kieffer, Park, Mor, Thiele, 2000). Factors contributing to this sudden drop include returning to work or school, and embarrassment and difficulties in the early postpartum period. This is particularly true for the teenage population. To address these issues, private and state health agencies have instituted educational campaigns and legislation to promote and support breastfeeding. Hawai‘i WIC has contributed to statewide and national efforts with a number of initiatives: designating breastfeeding coordinators for each WIC local agency, staff training in basic breastfeeding support, instituting breastfeeding friendly policies and procedures, creating and using incentive items, and purchasing manual and electric breast pumps for the WIC Breast Pump Program (BPP) for high risk infants and to enable women to breastfeed after they’ve returned to work and/or school. Increasing the

prevalence and duration of breastfeeding, from birth to beyond one year, the national breastfeeding goal, is an important effort of WIC. While some of these efforts are very similar to other states and reflect WIC National Nutrition Services Standards (USDA, 2001), Hawai‘i WIC has been fortunate to merge these national standards with its own creative efforts.

In addition to conferring health benefits to infants and their mothers, providing services to breastfeeding mothers is less expensive than supplying them with formula when all health and material benefits are taken into consideration. This manuscript presents a review of three programs Hawai‘i WIC has instituted to increase the initiation and duration of breastfeeding among its participants. These three projects are: The Breast Pump Loan Program, The Drape Project, and the Pumps in the Schools Project.

Breast Pump Program

The Hawai‘i WIC program believes that women should be educated on the benefits of early and continued exclusive breastfeeding, ideally directly from the breast and secondarily via expressed breast milk. Consequently, in January 2000, the Hawai‘i WIC program instituted a breast pump program for its clients. This program utilizes both manual and electric loaned pumps. Manual pumps are given for part time workers and students, some transient situations, and casual pumping needs. The loaned electric pumps and attachment kits are saved for exclusively breastfeeding women who meet the following criteria in Table 1.

Table 1
Priority Rating and Justification for Electric Pump Loan

Priority	Justification for Electric Pump Loan
1	Premature birth; ill infants; twins, triplets, separation of mother and infant.
2	Medical condition (i.e., engorgement, flat or inverted nipples) where latch on is difficult or impossible. Problem could be transient or permanent.
3	Medical condition (i.e., carpal tunnel syndrome preventing mother from using a manual pump when returning to work or school.
4	Working or attending school full time.

When planning this statewide program, WIC tried to review research or evaluations of similar programs across the nation. Studies existed for very successful workplace breastfeeding programs that allow women to pump milk during business hours (Cohen, 1994, 1995). Typically these programs increase breastfeeding duration and exclusivity among working mothers, decrease absenteeism and healthcare costs. These programs typically increase breastfeeding duration among working mothers; however, these are closed systems, making it easy to track success. The WIC Breast Pump Program is an open system and accounts for women in a variety of work environments. Success in such a system is more challenging to determine; however, any documented changes in breastfeeding duration may be more significant than in a restricted setting. Consequently, WIC began an evaluation of its Breast Pump Program in 2002.

Breast Pump Program Evaluation

The evaluation consists of two groups of women randomized from within the fourth priority category of the Breast Pump Program. Although the Hawai'i WIC Program is committed to providing an electric breast pump to all of its exclusively breastfeeding clients when possible, it recognizes that this service is only a convenience for women who fall in the 4th Priority category; therefore, making it more ethical to randomize women from this category for the study. Criteria for enrollment into the pump study included preparing to return to work or school full time within the first 6 months after delivery and planning to exclusively breastfeed for a year. Mothers were then randomized into control and study groups. Control participants receive education and a manual pump, while study participants receive an attachment kit and loaned hospital grade electric breast pump. All participants receive surveys at six months postpartum and one year postpartum to report their pump usage and breastfeeding experience. Data collection will end when the last infant enrolled turns one year of age during the summer of 2004.

To prepare staff for study implementation, each local agency was given a personalized Breast

Pump Study orientation and training. Sessions lasted one to two hours and covered the overall study design, enrollment, randomization, and the survey and data collection process. It was important to stress to the staff that adherence to the study design would ensure accurate results and allow them to more quickly resume their normal breast pump service. Staff response has been overwhelmingly positive. They readily support the study and any resulting improvements to the WIC Breast Pump Loan Program.

Anecdotally, the study has manifested some interesting issues. Several participants returning to work or school asked for the electric pump and were very disappointed to be randomized into the control group. These disappointments have made for staff challenges in keeping these women enthusiastic about breastfeeding. Many mothers receiving the manual pump perceived it to be more labor intensive and have lower motivation to continue breastfeeding.

The U. S. Department of Agriculture (USDA) Consolidated Federal Regulations for WIC services does not mandate the provision of electric breast pumps to any of WIC's clients. Yet many states and Native Tribes across the nation have popular breast pump programs in one form or another. USDA spends large sums of money annually on these programs and Hawai'i WIC felt it important to try and utilize these funds wisely while providing a much desired service for WIC families. Hopefully the results of the evaluation of the Breast Pump Loan Program as well as WIC's other breastfeeding initiatives will show a positive benefit for Hawai'i's WIC participants.

Hawai'i WIC Nursing Drapes

Embarrassment has been shown to be a number one breastfeeding concern for WIC women across the nation (Best Start Social Marketing, 1997). It is also a primary reason for women to choose bottle-feeding in public when their breast milk supply is quite adequate. Embarrassment particularly affects younger mothers and certain ethnic groups where nursing in public or around family and friends is simply not acceptable (Brownell, Hutton, Hartman, Dabrow, 2002;

Hannon, Willis, Bishop-Townsend, Martinez, Scrimshaw, 2000). Instead of trying to tackle these cultural biases, Hawai'i WIC has taken a different approach to this very real barrier to breastfeeding. Hence the search for a nursing drape that is both culturally acceptable and inexpensive.

In researching nursing drapes on the market, Hawai'i WIC found that none met the criteria of lightweight, attractive, single hand use, easy to wash and inexpensive. WIC eventually decided to create a drape employing a local seamstress, designing the pattern and label, and using local fabrics. These drapes are now used exclusively in all Hawai'i WIC clinics.



Figure 1
WIC Participant Using Nursing Drape in Public

The drape was originally created in 2001, and by the end of 2002 Hawai'i received federal approval to utilize them as an outreach incentive item and breastfeeding aid, in accordance with federal guidance ASM 95-44 and ASM 94-107 (USDA, 1994, 1995). Drapes have now become an integral part of the Hawai'i WIC Breastfeeding Incentive Program. The drapes give staff the perfect opportunity to talk about issues such as embarrassment, State breastfeeding legislation, and infant health. Drapes help mothers, who are not always fully committed to breastfeeding, feel at ease with breastfeeding on the go, while decreasing the

infants' chance of illness. The initiative gives WIC clinics a breastfeeding friendly option for the mom who wants "just a few cans of formula" each month. It also provides excellent advertising with WIC contact information on the label and shows that WIC is breastfeeding friendly. Mothers love their drapes, and local surveys show that many women have literally worn theirs out with daily use. 97% use it early in their breastfeeding relationship when they are getting used to nursing in public. We have found that the drape is primarily utilized in the early months of nursing and the majority of women begin using them between two to six

weeks postpartum, just as they are establishing their milk supply. Local surveys show that 67-72% of WIC women are reaching for their drapes instead of a bottle of formula. This decrease in formula volume impacts WIC food

costs and breastfeeding duration rates among participants. Additionally, drapes supports local enterprise and business in its construction, design, and distribution.



Figure 2
Only the Mother Can See the Infant Nursing

Several others states, Native American tribes, and WIC offices around the country are interested in providing this or a similar product for their clients. WIC has also received inquiries from private industry to provide drapes to the general public.

2002 Formula Cost Savings from Using the Drape

WIC Programs across the nation are always researching ways to decrease food costs. Local sources estimate that in 2003 the cost of a formula food package will rise by 13% in Hawai'i. As prices continue to rise, it is in the best health interest of WIC clients and in the fiscal interest of the staff to find creative ways to save program money while providing the best

nutrition possible. Drapes are one way to meet the needs of both the clients and fiscal skeptics, when used wisely. Using information gathered in our client survey and WIC's net formula and drape costs, a conservative estimate is that drapes save at least twelve cans of formula in 67% of those clients to whom drapes are issued. This translates to a 2002 net savings of \$120,368 in food costs for our state. This saving will become even more significant as formula company rebates to WIC Programs may decrease over time.

Implications for Other States

With a relatively small population, Hawai'i is a perfect place to try new, innovative programs before implementing them to a wider audience

in larger states. The drapes, as part of a breastfeeding incentive program, have been an example of this trial and error approach. The design of the drapes, the policies and procedures implemented in the distribution of this product, and economic and client satisfaction have prepared Hawai'i WIC to extrapolate to a bigger audience. For example, California could reduce their formula costs by providing drapes to their clients. Using the cost of the drapes outside of Hawai'i, the approximate number of drapes California would need, plus average formula costs and rebate prices, one can estimate a net savings of at least \$1,975,492.00 during the first year of drape use in California (See [Appendix A](#) for California calculations.). For US states struggling to keep WIC food costs low, the savings from using drapes could be an ingenious approach.

Pumps in the School Program

The Pumps in the Schools (PITS) Program was born out of a dual need: to assist high school mothers with completing their degree while providing the best nutrition for their babies; and to increase the breastfeeding rates for teens participating in the WIC Program. WIC has been notoriously associated with low teen breastfeeding rates (Novotny, Kieffer, Mor, Thiele, Nikaido, 1994; Ryan, Wenjun, Acosta, 2002; USDA, 1997) and teens, in general, have lower rates than older mothers. The goal of the Pumps in the Schools Program is to increase the teen breastfeeding prevalence and duration for WIC high school students by providing WIC purchased hospital grade breast pumps and placing them in a supportive classroom setting. The program serves to decrease at least one barrier to breastfeeding for these high-risk mothers.

The Program was piloted in two Oahu high schools beginning in 2001. Preliminary data show that the average high school student surveyed stays home two to six weeks postpartum before returning to school full time. Ninety-six percent of these young mothers introduced formula at this time and quit breastfeeding between two weeks and three months postpartum. While these young breastfeeding mothers qualify to loan a breast

pump from their local WIC agency, in reality, they hardly ever do. For many, their day consists of "schlepping" their infant, their infant's baby bag, their own book bag and lunch to school via the public bus system or having to rely on adults to take them to school. It's unrealistic for many to carry a 5-pound pump and expressed milk to and from school daily. Because the pump is 'uncool', embarrassing and cumbersome, and there is generally no permanent or supportive place to pump at school, these girls, who want the best for their infants, realize how difficult and stressful keeping up their milk supply can be, and switch to full formula feeding. In Hawai'i, by two weeks postpartum, 41% of the girls surveyed by WIC quit breastfeeding. By three months postpartum, 78% of the girls surveyed had stopped breastfeeding while only one teen, or 4%, breastfed greater than eight months, and none exclusively breastfed.

Through outreach contacts, Hawai'i WIC discussed these issues with two excellent and committed teachers of the GRADS (Graduation Reality and Dual Role Skills) Program (See [Appendix B](#) for further description of the GRADS Program.). Through this relationship, the Pumps in the School Program (PITS) was developed. The program consists of permanently loaning hospital grade, multi-user breast pumps to select schools through a Letter of Responsibility between Hawai'i WIC, the individual school principal, and GRADS teacher. WIC provides one to two breast pumps to each GRADS program teacher for her classroom, or the pump may be placed in the health room, whichever works best for the situation. The GRADS teacher is responsible for pump security, upkeep, and a comfortable place for the girls to pump and store milk. WIC provides the pump and any necessary repairs. The girls, who are WIC participants, visit their WIC local agency for an attachment kit, education, and support. The attachment kit is theirs to keep and use with the pump at school. Between classes and at lunch, they take turns with the other breastfeeding girls using the breast pumps. The attachment kit also converts to a manual pump so weekend and evening pumping is possible without the electric motor.

With this program design there is no pump to bring to and from school thus decreasing WIC's equipment liability. Meanwhile, the highest risk families get breastfeeding support from WIC and their local high school. Non-WIC students may also use the pump, but they must purchase the attachment kit on their own.

Hawai'i WIC is expanding this program to a targeted 10 schools across the state during the 2003-2004 school year. Four high schools on Oahu have already voiced great interest in having the pumps at their school and three high schools. Three schools on Kaua'i and two on the Big Island are now participating. Additionally, Maui is also slated to participate. While the State WIC office will introduce the program, the local WIC agencies will ultimately serve as a liaison with the school for their community connection, attachment kits, and health/ breastfeeding education.

Preliminary surveys and teacher interviews show that breastfeeding rates are significantly higher after the program was implemented than before its inception. Furthermore, results of the pilot project show increased breastfeeding duration rates and decreased class absenteeism. Pre-intervention surveys show an 88% breastfeeding initiation rate, 29% breastfeeding duration rate at four to seven months and 5% of the girls nursing at one year. This compares to the post-intervention surveys of 94% initiation, 43% nursing between four and seven months and 29% of those who started nursing still breastfeed at one year. Teacher interviews show decreased class absenteeism now since infants are sick less often and recover from illness sooner. Breastfeeding mothers return to school within one to three days after an infant-related illness compared to the average one to two weeks at home with a sick baby that is typical of the formula-feeding girl. Increased breastfeeding prevalence and duration is associated with improved school attendance. Increased school attendance translates into a higher chance of graduation. All of these positive results mesh well with a variety of national health and school goals: Healthy People 2010 (USDHHS, 2000); No Child Left Behind Act; and WIC's national breastfeeding support goals.

It is interesting to note that even after PITS implementation, formula introduction seems to remain at around two to four weeks postpartum but breastfeeding duration is significantly lengthened. Presumably, while formula is still introduced early in the infant's life, the volume of human milk after implementation of PITS is higher. Also, because of the time constraints of the pumping time between classes the local WIC staff have been working with these young mothers to encourage as much breast milk as possible while still being flexible about providing formula. This change in attitude has proven to be effective in lengthening the breastfeeding relationship while supporting the mother based on her needs and the realities of her day. Post-intervention student surveys reflect this flexibility and show that students view WIC and their schools as much more supportive of breastfeeding than before the implementation of PITS. Further program expansion, surveys and analysis should help to see if PITS becomes a long-term solution for our high school mothers.

Conclusion

A wide range of factors is associated with breastfeeding practices. Within a given population, the impact of these factors must be understood in order to identify appropriate strategies for breastfeeding promotion. Consequently, breastfeeding promotion has been implemented in Hawai'i with a multi-pronged approach.

WIC is currently examining breastfeeding patterns throughout the state. Full time employment/school is negatively associated with breastfeeding initiation and duration rates in all socio-economic groups but is particularly significant among WIC participants, especially teens. It seems that just the plan of returning to work/school full time soon after giving birth discourages initiation. This trend may reverse with the advent of breastfeeding friendly workplace legislation woven with education, encouragement and a breast pump loan program and PITS introduced prenatally so women realize there will be support for their feeding efforts when it is truly needed. Furthermore, issuance of a culturally acceptable nursing drape

both encourages and enhances the breastfeeding experience for some mothers.

Hawai'i WIC is tackling social issues related to working and schooling, duration, and

embarrassment about public breastfeeding. In essence Hawai'i is changing the image of WIC to be 'the breastfeeding people' instead of the 'formula give-away program'.

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Author Information

Christina Shoemaker Simmons, M.P.H.*
Hawai'i Department of Health
Family Health Services Division
WIC Services Branch, Suite 701
235 Beretania Avenue
Honolulu, HI 96813
E-Mail: simmonsc@hawaii.rr.com

Pratisha Budhiraja, M.S., M.P.H.
Hawai'i Department of Health
Family Health Services Division
WIC Services Branch, Suite 701
235 Beretania Avenue
Honolulu, HI 96813

Cheryl B. Prince, Ph.D., M.P.H., M.S.N.
Hawai'i Department of Health
Family Health Services Division
3652 Kilauea Avenue
Honolulu, HI 96816

*Corresponding author

Appendix A

California Cost Savings From Using the Drapes Drape Versus Formula Costs Per Year 2003

Actual cost of drapes quoted for purchase for 2003. This includes drapes, tax and shipping.

- $145,000 \times \$4.75 = \$688,750$

Total # of drapes quoted for purchase in 2003 = 145,000

State average cost for a can of Similac Advance® and Isomil® powder.

Similac Advance \$13.50

Isomil \$14.75

State rebate for Similac Advance and Isomil powder.

Similac Advance \$10.71

Isomil \$11.55

Net cost of Similac Advance and Isomil powder to California WIC.

Similac Advance **\$2.79**

Isomil **\$3.20**

62-72% of women surveyed feel the drape helps them use less formula. Average = **67%**.

80% Similac Advance use, 20% Isomil use statewide.

So, if we say that 67% (**97,150** of the 145,000) of the drapes given away in 2003 would help families use less formula (2 cans/month) and the woman breastfeeds (conservatively) for a total of 6 months than a projected cost savings will be:

12 cans formula/family/year saved by 97,150 families = $12 \times 97,150 = 1,165,800$ cans of formula saved annually by using the drapes = **\$2,664,241.60**

$932,640$ cans of Similac Advance \times $\$2.79 = \$2,602,065.60$

$19,430$ cans of Isomil \times $\$3.20 = \$62,176$

Gross formula savings with drape use = $\$2,664,242$

Gross costs of drapes for 2003 = $\$688,750$

Net cost saving to California WIC Program by using the drapes in lieu of formula = $\$1,975,492$

Appendix B

GRADS Program

GRADS, an acronym for Graduation, Reality, and Dual-Role Skills, is a program for pregnant and parenting teens; both male and female. It was designed by Ohio State researchers to keep pregnant teenagers in school, and it does just that. GRADS provides teens with these special needs the support and additional education to help them reach graduation. Teens that are being serviced by the GRADS program increase their chances of graduation to 87.5%. Those not enrolled in GRADS who are pregnant or parenting have a 40% chance of graduation (national statistics 1999). It is estimated that GRADS actually saves taxpayer money by lowering the drop out rates in high school. Every teenage mother who drops out of school or repeats a grade costs the taxpayers an estimated \$4,605. The program has achieved an 85 percent retention rate in Ohio and is estimated to save the State \$12 million a year.

Students may generally enter GRADS any time throughout the school year. Instruction focuses on pre-natal and post-natal care, parenting skills, childcare and development, employment skills, communication, and development of self-esteem. Support and referrals in working with community agencies are offered.