BREASTFEEDING MEDICINE
Volume 6, Number 3, 2011

DOI: 10.1089/bfm.2010.0022

Unintended Consequences of the WIC Formula Rebate Program on Infant Feeding Outcomes: Will the New Food Packages Be Enough?

Elizabeth Jensen[1] and Miriam Labbok[1,2]

Abstract

Approximately half of all mothers of infants born in the United States receive services through the Special Supplemental Nutrition Program for Woman, Infants and Children (WIC). Although WIC promotes breastfeeding, data suggest that, despite advances in the last 2 decades, WIC participants are less likely to initiate breastfeeding, and much less likely to continue, than non-WIC participants, including the non-WIC participants who are eligible for WIC. WIC recently revised their food packages and enhanced the monetary value of the breastfeeding packages. While these changes are an important step in supporting WIC's efforts to promote breastfeeding, other major factors, such as participants' perceptions of the value of the packages and WIC's dependency on rebates from formula companies to fund a portion of the program, may dampen WIC's breastfeeding promotion and support efforts. There is great need for additional research on these issues.

Background

Through Healthy People 2010, non-governmental and governmental partners established a set of objectives for supporting the overarching goals of the United States of (1) increasing the quality and years of healthy life and (2) eliminating health disparities. The aim of Objectives 16–19 is to increase the proportion of mothers who breastfeed their babies. These objectives include five targets: to increase breastfeeding initiation to 75%, 50% continuation at 6 months, 25% continuation at 12 months, and the recently added targets of 40% exclusive breastfeeding at 3 months and 17% exclusive breastfeeding at 6 months.[1] The Special Supplemental Nutrition Program for Woman, Infants and Children (WIC), the largest governmental program to support nutrition, has a significant influence on breastfeeding practice in the nation. WIC is designed to address the nutritional needs of low-income, nutritionally at-risk, pregnant, breastfeeding, and non-breastfeeding postpartum women and infants and children up to 5 years of age.[2]

Each year, nearly half of all infants born in the United States are enrolled in the WIC program.[3] Through WIC, participants are provided vouchers for supplemental food packages that are tailored to their nutritional needs. WIC has modified its practices over the years to include support for breastfeeding; however, while breastfeeding initiation rates have increased, after the first few days most infants served by WIC are not breastfed or are only partially breastfed.[4] All mothers have the option to receive infant formula in their monthly supplemental food package,[2] and as a result, WIC participants consume roughly 54% of all formula sold in the United States.[4]

WIC's formula procurement approaches have been modified over the years with the goal of cost containment. To this end, today all state WIC programs must participate in a program whereby WIC solicits bids from formula companies that include significant rebates for the state WIC program for each can of formula distributed. While initiated as a cost containment measure, it may, inadvertently, have a subtle negative impact, whether consciously or unconsciously, on WIC's administrators' support for efforts to increase breastfeeding rates, thereby decreasing formula purchases.

Breastfeeding promotion and support have been integral components of the WIC program showing an impact over the last 20 years.[5] As of 2004, WIC has committed $15 million in resources each year to a breastfeeding peer support program. More recently, through the Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2010 (Public Law 111-80), an additional $80 million will be provided to state agencies to build on WIC's peer counseling efforts.[6] Nonetheless, initiation, exclusivity, and continued breastfeeding rates for WIC participants

[1]Department of Maternal and Child Health, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.
[2]Carolina Global Breastfeeding Institute, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

remain significantly lower than those of non-participants, even after adjusting for sociodemographic differences between the groups.[5,7] Figures 1–3 illustrate that those WIC-eligible, but not participating in WIC, have breastfeeding rates similar to those of families not eligible for WIC, while WIC enrollment is associated with much lower initiation, continuation, and exclusivity.[8]

After controlling for race, education, age, and marital status, the differences in breastfeeding between WIC-eligible non-participants and WIC participants persist.[9] However, it may be that women who are eligible to receive WIC services, but choose not to participate, have self-selected themselves out of participation because of their intentions to breastfeed and a perception that WIC is primarily associated with formula acquisition.

In 2009, WIC implemented revised food packages that were based on recommendations from the Institute of Medicine.[2] One of the changes increases the value of the packages provided to breastfeeding mother–infant dyads, including a special package for exclusively breastfeeding mothers.[10] This is an important step in reinforcing WIC's commitment to breastfeeding and to the health of WIC participants; however, there are two major factors that may limit the impact of the new packages on WIC participants' choices, and a third issue we must consider that impacts the U.S. population in general:

- the benefits to the WIC program provided by formula rebates and distribution
- the retail and perceived market values of the formula packages continue to exceed those of the breastfeeding packages, and
- the impact of rising formula costs, spurred, in part, by the formula rebate program on WIC and non-WIC feeding decisions.

Costs for WIC Pre- and Post-Initiation of the Rebates

In 1989, in an effort to control the increasing costs of infant formula, states were required to implement a sole source cost containment program whereby formula manufacturers are provided the opportunity to bid on serving as the sole source formula provider for each state's WIC program. Formula manufacturers offer large rebates, based on the amount of formula purchased, in an effort to be awarded the sole source contract. In 2004, $1.6 billion was generated for the WIC program through formula rebates, increasing to $1.7 billion in 2005. Each year, these rebates provide the equivalent of the cost of the services for about 25% of all WIC participants.[3] In 2005, among the states that implemented new contracts with formula manufacturers, the average cost of one can of liquid concentrate formula was $0.43 after rebates. This constituted an 87% discount off the wholesale price.[11]

These sole source rebates generate considerable resources for the program, and the acceptance of the rebates may serve to undermine the WIC program's efforts to promote breastfeeding in several ways. At the program policy level, the rebates may create a dependency on distributing formula so more families can be served from the rebate income. Furthermore, the use of the rebate resources may carry fewer federal mandates, allowing the possibility of more flexibility in their use. The fiscal incentive to purchase and provide formula is compounded further by the relative costs of the

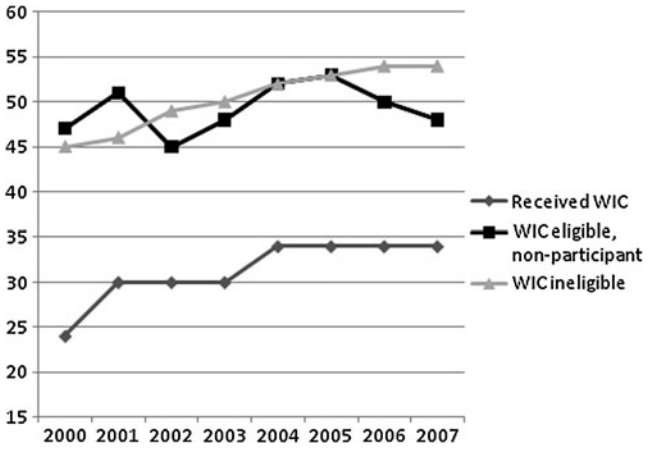

FIG. 2. Percentage of infants breastfed at 6 months by birth cohort and WIC participation status.[8]

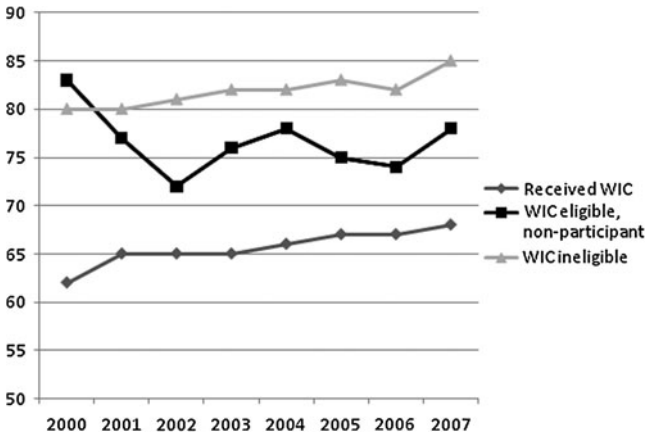

FIG. 1. Percentage of infants ever breastfed by birth cohort and Special Supplemental Nutrition Program for Woman, Infants and Children (WIC) participation status.[8]

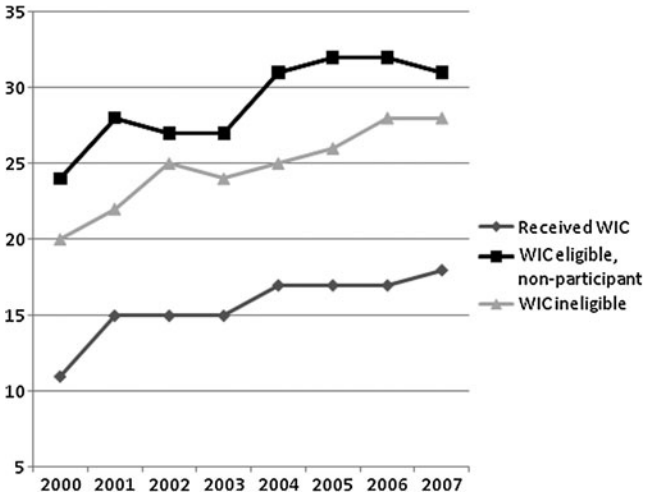

FIG. 3. Percentage of infants breastfed at 12 months by birth cohort and WIC participation status.[8]

WIC food packages; the package for formula-fed infant/mother pairs is less expensive to WIC than the cost of food packages for exclusively breastfed infant/mother pairs.

Typically, food packages are provided to non-breastfeeding postpartum women for up to 6 months, but women who are breastfeeding are provided food packages for up to 12 months. Before the sole source/rebate approach was implemented, the cost to WIC for the formula package was significantly higher than the cost of the breastfeeding package. After the sole source/rebates are included in the calculation, the net cost of the formula package was $28.26, much less than the breastfeeding package. With the current rising demand for WIC enrollment, coupled with limited resources allocated to the program, this may serve as a financial disincentive to encouraging WIC breastfeeding support. The U.S. Department of Agriculture Food and Nutrition Services (FNS) revised the WIC food packages in an effort to align the packages with current dietary guidelines and current infant feeding practice guidelines of the American Academy of Pediatrics as well as to better support establishment of sustained breastfeeding. By August 2009, all state agencies were required to have implemented the new food packages.[2] However, the cost disincentive for WIC fiscal administration to support breastfeeding persists. The FNS estimated that the cost of providing the new food packages to a fully breastfeeding infant/mother pair will average $51.30 per month for the first 9 months. Although this is less than the cost to WIC of the food packages (post-rebate) for a fully formula-fed infant/mother pair, an average of $59.14 per month, FNS estimates that by moving a family from fully breastfeeding to partially breastfeeding, an option available with the new packages, the WIC program will save $7.96 per month.[2] This may have the unintended consequence of increasing WIC's financial dependency on families choosing to partially breastfeed, rather than exclusively breastfeed, in order to minimize costs and serve more families.

For WIC, the cost difference between formula and breastfed packages is reduced under the revised approach; however, the costs are only similar when rebates are taken into account. In other words, the relative costs may be comparable for the breastfeeding package from WIC's point of view, but the participant still could perceive the formula package as the more expensive to replace on the open market. Although there is no question as to the commitment of WIC to promote breastfeeding, one could surmise that the dependency on formula rebates to serve more families may result in competing interests in serving as many families as possible while encouraging families to choose breastmilk over infant formula.

WIC's effort to promote breastfeeding may be further compromised by the lack of oversight and regulation of the use of the WIC acronym in the marketing of formula. Formula manufactures have capitalized on the rebate program, widely using the WIC name in marketing their formula. WIC may unintentionally be increasing the selection of specific brands through allowing the marketing of formula using the WIC acronym. WIC products are also given shelf-positioning benefits at point of sale, at retail, which is known to increase sales. Although there are some efforts to curb these practices through prohibitive language introduced in state contracts with formula manufacturers, as of 2005, 32 states did not limit the use of the WIC acronym or logo in advertisements.[12] Consequently, WIC, as a widely recognized national nutrition program, may inadvertently support the perception that formula feeding is the healthy norm.

Perceived Value of Formula for the WIC Participant

While the food package changes implemented in 2009 have increased the cost to WIC for the breastfeeding package, for the recipient, the retail, or replacement value of the formula package remains more than that of the breastfeeding package. The high and increasing cost of formula may perpetuate the idea that formula packages offered by WIC are of greater value than breastfeeding packages.[13] In 2005, the value of the breastfeeding package was $46.49. The pre-rebate or market value of the formula-fed infant package was $97.86, much higher than the value of the new breastfeeding package.[14] One of the changes to the new food packages implemented in 2009 was an increase in the commercial value of the breastfeeding package.

Since the Institute of Medicine recommendations were intended to be cost-neutral, the commercial value of the food packages for formula feedings was decreased. Despite these changes, the market value of the formula package is still much greater than the breastfeeding package. The retail price of a can of a 13-ounce can of formula is about $5.00, and the new food packages call for up to 884 ounces of reconstituted infant formula per month, depending on the age of the child.[2] This equates to about 10 cans of infant formula, depending on the formula manufacturer, and about a $50.00 increase in the perceived value of the food package for the participant.

Rising Formula Costs

The Economic Research Service of the U.S. Department of Agriculture conducted a study of the impact of the formula rebate program on retail prices of infant formula. This study found that retail prices for infant formula selected for a WIC program in any particular state increased more than retail prices for formula brands not selected. The larger the relative size of the market share for formula for WIC participants, as opposed to market demand from non-participants, the larger the increase in price. WIC participants are mostly insensitive to price changes because the bulk of their formula needs are provided at no cost, regardless of price. Furthermore, the larger the share of price-insensitive consumers, the greater the ability of manufacturers, as well as supermarkets and other retail formula vendors, to increase prices. As the price of the contract brand of formula increases, the demand for other brands increases. This increase in demand increases the prices of non-contract brands as well, although not as much as the price increases for the contract brand.[3,4] These rising retail prices have increased costs for non-WIC participants as well. These higher prices may serve as a deterrent for non-participants to use formula, further increasing the disparities between breastfeeding rates between the subsidized and non-subsidized formula users.[14]

Sole source purchasing of more than half the formula sold in the United States has influenced the commercial formula market. WIC is a supplemental program only, and provides less formula than is needed. As a result, WIC participants must purchase additional formula. Because WIC offers only one brand, that brand is perceived as "endorsed." Manufacturers can modify the retail price of that brand of formula

with a reasonable expectation that WIC participants will likely purchase the "endorsed" brand after the WIC supply is exhausted. For WIC mothers who want to breastfeed, the economic incentive for using formula encourages mixed feeding, with a concomitant diminished milk production capacity and the need to purchase formula to supplement the amount that is provided. Because the price of the formula brand provided through WIC, as well as other formulas, has increased as a result of the rebate program, purchase of the additional formula may be more cost-prohibitive for lower-income families. The result has been attempts by WIC families to reduce purchase; recently, there has been media attention[15] on instances where families have diluted their formula beyond the recommended level in an effort to make the formula last longer, with deleterious health outcomes.

Conclusions

The growth of the WIC program, made possible in part through the formula rebate program, enables WIC to serve a greater number of families. However, this increase in numbers served may also have nurtured formula use by expanding the population receiving a supply of virtually free formula. The WIC commercial infant formula rebate program is extremely effective at reducing overall costs for the WIC program, thus increasing its capacity to serve more participants. But the impact of the rebate program in terms of fiscal benefits to WIC may, consciously or unconsciously, be undermining WIC's administrative efforts to promote and support breastfeeding because the result is that more families can be served by WIC if more families choose to formula-feed their infants. Additionally, the market value of the infant formula package is much higher than that of the breastfeeding package. This higher market value may encourage participants to choose the formula package over the breastfeeding package.

The fiscal pressure on the WIC administration to maintain the use of the formula package, coupled with the pull by the recipient based on the perceived value of the package, may explain, in part, the ongoing supply pressure and demand pressure for formula use.

For the non-WIC participant, the impact of the rebate program on the retail price of infant formula may deter some families from purchasing formula and, as a result, increase breastfeeding among those not eligible or not enrolled in WIC. This choice to breastfeed based on the rising retail cost of formula could, logically, contribute to disparity in breastfeeding rates between WIC participants and non-participants during times of economic difficulties for low- to middle-income non-participants.

Research is needed to better understand the perception and impact of the breastfeeding support program and packages within WIC on client decisions, as well as the impact of the rebate program on WIC administrative decisions. Taken together, these two factors that would favor formula use may conflict with WIC's stated goal to support breastfeeding among at-risk women and children. The alternative to rebates is not an easy choice. Limiting WIC formula purchase, with the concomitant loss of rebate income, could result in fewer families served. Other options could include WIC purchasing and distributing only generic formula, as means of reducing formula costs without rebates and potentially moderating the influence of the rebate program on retail formula prices. Alternatively, WIC could increase efforts to leverage additional breastfeeding promotion and support resources from formula manufacturers when a particular company is selected as the sole source provider for WIC.

In sum, given that the WIC program serves about half of all infants born in the United States, WIC has a significant influence on infant feeding practice and on the price of commercial infant formula. This year, the WIC program engaged the Institute of Medicine to review research needs. This may, therefore, be the time that consideration be given to further study of the relationship that the WIC program shares with formula manufacturers and whether this relationship is in the best interest of the families served and in the best interest of efforts to achieve the nation's health goals for breastfeeding. In sum, given the issues presented, it is arguable that considerable additional research is needed to explore the overall impact of all aspects of WIC breastfeeding support on client practices, to study the impact of the rebates on administrative decisions, the WIC participants' perceptions of the cost of the new packages, and how each of these influences decisions.

Disclosure Statement

No competing financial interests exist.

References

1. Objectives 16–19. Increase the Proportion of Mothers Who Breastfeed Their Babies. Breastfeeding, Newborn Screening, and Service Systems. In: Healthy People 2010, Volume II, 2nd ed. www.healthypeople.gov/Document/HTML/Volume2/16MICH.htm#_Toc494699668 (accessed April 11, 2009).
2. National Archives and Records Administration. 7 CFR Part 246—Special Supplemental Nutrition Program for Women, Infants and Children (WIC): Revisions in the WIC Food Packages; Interim Rule. Federal Register 2007;72(234).
3. Oliveira V, Davis DE. Recent Trends and Economic Issues in the WIC Infant Formula Rebate Program. 2006;6657. mpra.ub.uni-muenchen.de/6657/1/MPRA_paper_6657.pdf (accessed April 5, 2009).
4. Prell M. An Economic Model of WIC, the Infant Formula Rebate Program, and the Retail Price of Infant Formula. 2004;39-2. www.ers.usda.gov/publications/fanrr39-2/fanrr39-2.pdf (accessed April 17, 2009).
5. Ryan AS, Zhou W. Lower breastfeeding rates persist among the Special Supplemental Nutrition Program for Women, Infants, and Children participants, 1978–2003. *Pediatrics* 2006;117:1136–1146.
6. U.S. Department of Agriculture National Agriculture Library. Loving Support Projects in Action. www.nal.usda.gov/wicworks/Learning_Center/support_peer.html (accessed September 2, 2010).
7. Racine EF, Frick K, Guthrie JF, et al. Individual net-benefit maximization: A model for understanding breastfeeding cessation among low-income women. *Matern Child Health J* 2009;13:241–249.
8. Centers for Disease Control and Prevention. National Immunization Survey. www.cdc.gov/breastfeeding/data/NIS_data/2005/socio-demographic_any.htm (accessed April 17, 2010).
9. Jensen E. Participation in the Supplemental Nutrition Program for Women, Infants and Children (WIC) and

Breastfeeding: National, regional, and state level analyses (submitted).
10. Carr A. Breastfeeding and the WIC program. *Breastfeed Med* 2009;4(Suppl 1):S-57–S-58.
11. U.S. Government Accountability Office. FNS Could Take Additional Steps to Contain WIC Infant Formula Costs. 2006. www.gao.gov/new.items/d06380.pdf (accessed April 5, 2009).
12. U.S. Government Accountability Office. Some Strategies Used to Market Infant Formula May Discourage Breastfeeding; State Contracts Should Better Protect Against Use of WIC Name. 2006. www.gao.gov/new.items/d06282.pdf (accessed April 5, 2009).
13. Holmes A, Chin N, Kaczorowski J, et al. A barrier to exclusive breastfeeding for WIC enrollees: Limited use of exclusive breastfeeding food package for mothers. *Breastfeed Med* 2009;4:25–30.
14. U.S. Department of Agriculture Food and Nutrition Service Office of Analysis, Nutrition, and Evaluation. WIC Food Package Costs and Rebates Summary: Fiscal Year 2005. U.S. Food and Drug Administration, Washington, DC, 2007. www.gpo.gov/fdsys/pkg/FR-2007-12-06/pdf/E7-23033.pdf (accessed April 7, 2009).
15. Tampa Tribune. Diluted Formula Nearly Kills Baby. www2.tbo.com/content/2008/dec/02/na-diluted-formula-nearly-kills-baby/news-metro/ (accessed April 19, 2010).

Address correspondence to:
Elizabeth Jensen, MPH
Department of Maternal and Child Health
Gillings School of Global Public Health
University of North Carolina at Chapel Hill
421 Pittsboro Street, CB 7445
Chapel Hill, NC 27599-7445

E-mail: ecjensen@email.unc.edu