



### **For the infant**

Breastfeeding decreases the risk that the infant may develop infectious diseases, ear infections, diarrhea, and more in early life. It reduces the risk of developing certain chronic diseases in later life.<sup>1</sup>

### **For the mother**

Breastfeeding mothers may return to their pre-pregnancy weight faster, and have a reduced risk of breast and ovarian cancer. It helps reduce postpartum bleeding and helps the uterus to return to normal size quicker.<sup>1,2</sup>

### **For the family**

Breastfeeding facilitates bonding. It helps develop a psychological connection between mother and infant.<sup>1</sup>

### **For the community**

Breastfeeding is less expensive than formula. Breastfeeding is better for the environment with less energy and water use, along with less garbage produced. Better health for mother and infant reduces the financial burden on the community.<sup>1</sup>

## **Special Supplemental Nutrition Program for Women, Infants and Children (WIC)**

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# **Breastfeeding Among WIC Participants, 2010-2014**

## **Introduction**

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) is a USDA funded program. WIC was created in 1974 to provide specific nutrients that were found to be lacking in the diets of pregnant and post-partum women, infants and young children during critical times of growth and development. WIC provides three main benefits including nutrition and breastfeeding education, referral to other health and social services, and nutritious supplemental foods. While WIC has always supported breastfeeding, there has been added emphasis on efforts to promote and support breastfeeding in recent years. In 2009, WIC nationally made changes to the food package provided to infants and women in the post-partum and breastfeeding participant categories in an effort to promote and support breastfeeding. Changes included a larger food package for women who were partially or fully breastfeeding, and added foods to the fully breastfeeding package to support the special nutritional needs of this life stage.

## **Background**

Breastfeeding is widely recognized as the preferred feeding method for healthy infants.<sup>1-3</sup> To support and promote breastfeeding in the WIC program we assure that WIC local agency staff are offered training about breastfeeding, pregnant or breastfeeding women receive education about the benefits of breastfeeding and strategies to overcome issues, and our program issues breast pumps to women facing challenges in feeding at the breast. Montana WIC also offers the Breastfeeding Peer Counselor program through 11 local agencies. This evidence-based program provides mother-to-mother support for breastfeeding success. While many efforts have been made to positively impact our breastfeeding rates, more quantitative analysis was needed to assess our impact. In late 2009, Montana WIC implemented a new Management Information System (MIS) for WIC eligibility and data collection. This report is an analysis of the first five years of breastfeeding data available through this system.

## **Methods**

WIC participant data was extracted from the Montana Successful Partners in Reaching Innovative Technology (M-SPIRIT) MIS for each calendar month from January 1, 2010 through December 31, 2014. Data collected included "ever breastfed" (indicating initiation) and the level of breastfeeding (related to the food package selection) for infants turning three, six, or twelve months of age during the month of interest. To capture complete data on all infants participating on the program during the period of interest, the data have a one-year lag time, which allows for complete information for the first year of life.

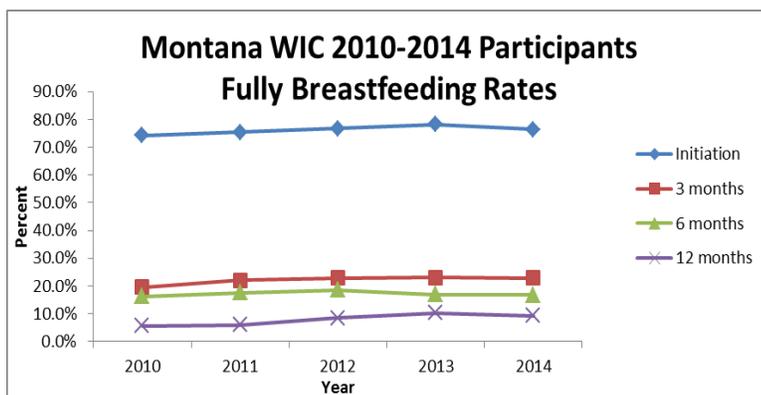
# Breastfeeding Among WIC Participants, 2010-2014

## Analysis

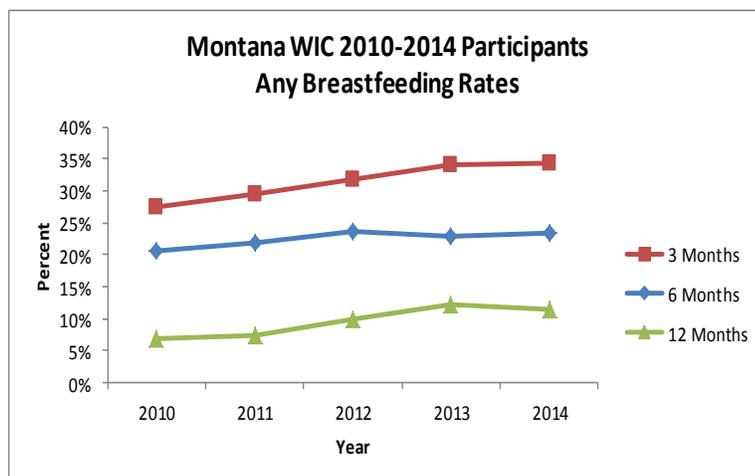
All analyses summarized in this report were completed using R 3.2.2. Infants are considered to be 'fully' breastfed when the mother reports she is breastfeeding and her infant's WIC food package does not include any formula. Infants are considered to have 'some' breastfeeding when the mother reports she is breastfeeding and her infant's WIC food package includes formula. Infants are considered to have no breastfeeding ('none') when the mother reports she is not breastfeeding and her infant's WIC food package includes formula. Chi-square tests were used to determine significant differences between groups and missing values were excluded from all analyses.

## Results

Breastfeeding behavior was queried for 31,629 WIC infants served between 2010-2014. The rate of breastfeeding initiation among WIC participants increased from 74% in 2010 to 76% in 2014 ( $p=0.007$ ). By comparison, the breastfeeding initiation among all Montana infants is 91% (NIS, 2011 births). Rates of fully breastfeeding at three months (from 20% to 23%,  $p<0.001$ ) and twelve months (from 6% to 9%,  $p<0.001$ ) have also increased (see Figure 1). No significant change in fully breastfeeding rates at six months was observed. From 2013 to 2014, breastfeeding initiation rates did decrease (from 78% to 76%,  $p=0.02$ ); however, fully breastfeeding rates at three, six, and twelve months did not significantly decrease. As shown in Figure 2, rates of any breastfeeding (fully and some breastfeeding combined) increased from 2010 to 2014 for three month ( $p<0.001$ ), six month ( $p<0.001$ ), and twelve month ( $p<0.001$ ) old infants.



**Figure 1:** Montana WIC participant's initiation rates and fully breastfeeding rates at three, six, and twelve months.



**Figure 2:** Montana WIC participant's level of any breastfeeding at three, six, and twelve months.

# Breastfeeding Among WIC Participants, 2010-2014

## Breastfeeding Peer Counselor Program Comparison

Breastfeeding rates were compared between agencies with a peer counselor program versus similarly sized-agencies without a program (Table 1). Since no small WIC agencies and all large WIC agencies have peer counselor programs, only medium-sized agencies were used in this analysis. Rates were significantly higher at all benchmarks for agencies with a peer counselor program compared to similarly-sized agencies without a program (Table 1). All rates were significantly different (all p-values < 1 x 10<sup>-7</sup>). The large differences were in initiation rates (79% versus 59%) and three month rates (23% versus 14%). Note these results only indicate an association between peer counselors and breastfeeding rates; they do not imply that peer counseling caused an increase in breastfeeding rates.

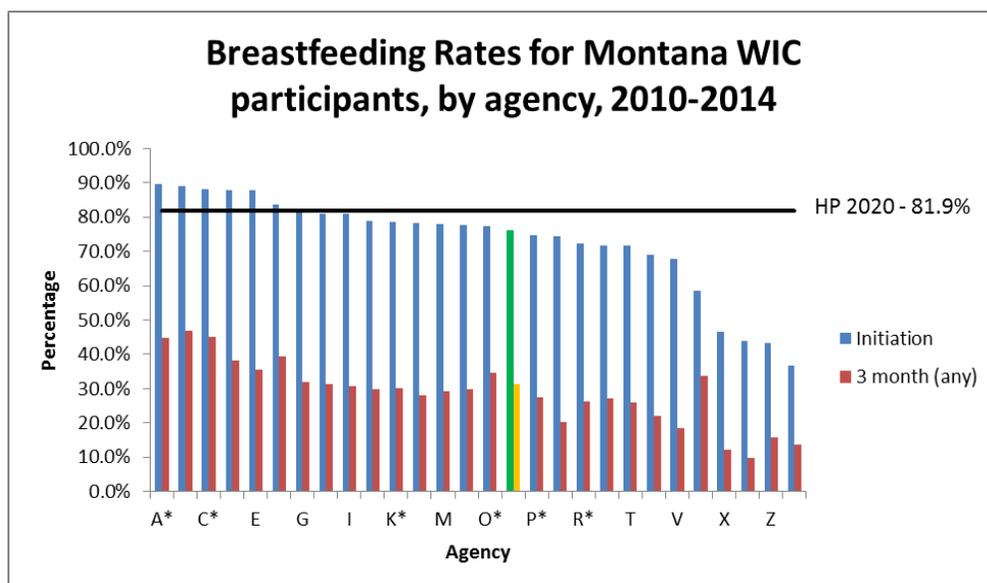
	Peer Counselor	No Peer Counselor
Initiation	79%	59%
3 months (fully)	23%	14%
6 months (fully)	18%	11%
12 months (fully)	8%	5%

**Table 1:** Medium size agency breastfeeding comparisons for agencies with and without a peer counselor.

## Breastfeeding by Agency

There was substantial variation in breastfeeding rates by agency. Six agencies have exceeded the Healthy People 2020 target of 81.9% breastfeeding initiation. Among WIC agencies in Montana, breastfeeding rates drop significantly between initiation and 3 months, as shown in Figure 3.

Figure 3: Ranking of local agencies by breastfeeding rates for the time period of 2010-2014. An \* indicates a local agency with a Breastfeeding Peer Counselor Program. The State WIC rate is represented by the green and orange bars.



# Breastfeeding Among WIC Participants, 2010-2014

## Discussion

The rate of breastfeeding initiation among WIC participants increased significantly from 2010 to 2014 for initiation, three months, and twelve months. During this same time period, the rates of any breastfeeding at three months, six months and twelve months also increased significantly among WIC participants. There was also a significant increase in rates of any breastfeeding at three, six, and twelve months. While the overall increased rates are encouraging, breastfeeding initiation rates did decrease significantly from 2013 to 2014; the declines will have to be monitored.

A large drop off at the "any" level of breastfeeding occurs between initiation and three months of age. In reviewing the selected reason given for stopping breastfeeding, two reasons which are selected frequently have ties to perceived milk supply. These reasons are fussy unsatisfied infant and perceived lack of milk. A comparison of breastfeeding rates between medium size local WIC agencies with breastfeeding peer counselors and without breastfeeding peer counselors show significantly higher rates for initiation and fully breastfeeding at three, six and twelve months in the medium size local WIC agencies with a breastfeeding peer counselor. To increase the duration of breastfeeding, Montana WIC should examine the reasons for stopping breastfeeding between initiation and three months of age to determine anticipatory guidance for breastfeeding mothers. An exploration of expanding the breastfeeding peer counselor services to all Montana pregnant and breastfeeding WIC participants should also be considered.

## Action Plan

- WIC local agencies will use their local breastfeeding statistics to create their annual Breastfeeding Plan.
- Increasing breastfeeding rates beyond 3 months will be a target area for training and interventions.
- Montana WIC will continue to support the Breastfeeding Peer Counselor Program and work with local agencies to increase participation in this program.
- Continue to monitor the breastfeeding rates and target interventions based on data.

## References

1. U.S. Department of Health and Human Services. *The Surgeon General's Call to Action to Support Breastfeeding*. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General; 2011, p. 1-5.
2. American Academy of Pediatrics and American College of Obstetricians and Gynecologists. *Breastfeeding Handbook for Physicians*. Elk Grove Village, IL and Washington DC, 2006, p. 33.
3. World Health Organization. (2015). Health Topics: Breastfeeding. Retrieved from <http://www.who.int/topics/breastfeeding/en/>

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