

# Baby-Friendly Hospital Initiative Evaluation Brief

## Introduction

Research that has demonstrated numerous benefits associated with breastfeeding for both mother and child. Recognizing the important role that hospitals and birthing facilities play in supporting or discouraging mothers' efforts to breastfeed, in 1991 the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) developed the Baby-Friendly Hospital Initiative (BFHI), an effort that assists hospitals and birthing facilities to implement policies and practices that provide mothers with the knowledge, skills, and confidence to initiate and continue breastfeeding.

In 2009, First 5 LA committed \$10.5 million in grants to assist up to 21 hospitals with exclusive in-hospital breastfeeding rates lower than the Los Angeles County average in seeking Baby-Friendly Hospital (BFH) designation. Between June 2009 and October 2011, a total of 16 hospitals received First 5 LA funding for staff training and operational support to implement policy and practice changes recommended by Baby-Friendly USA.

In September 2012, First 5 LA contracted with Harder+Company Community Research (Harder+Company)

to conduct a point-in-time evaluation<sup>1</sup> to document the challenges and milestones that hospitals have experienced as they seek Baby-Friendly Hospital designation. As part of that evaluation, Harder+Company analyzed data provided by three funded hospitals (referred to as case study hospitals) to **examine whether there was a relationship among breastfeeding intent, delivery route, and skin-to-skin contact with in-hospital breastfeeding.**

The research brief provides information about the methods and analytic approach of this analysis, the findings, and potential implications for future study.

## Methods and Analytic Approach

Three case study hospitals (Pomona Valley, Greater El Monte and St. Mary) were selected for inclusion in this analysis based on presence of data for the dependent variable (in-hospital breastfeeding) and three predictor variables (breastfeeding intent, delivery route and skin-to-skin contact).<sup>2</sup>



The variables were defined as:

- Breastfeeding intent: Any breastfeeding (including exclusive breastfeeding and a combination of breast milk and formula feeding) or formula.
- Delivery route: Cesarean section (C-section) or vaginal.
- Skin-to-skin contact: Any skin-to-skin contact at all during the hospital stay or no skin-to-skin contact.

In-hospital breastfeeding: Any breastfeeding (including exclusive breastfeeding and a combination of breast milk and formula feeding) or formula.

## Analytic approach

We conducted a two (breastfeeding intent) by two (delivery route) by two (skin-to-skin contact) ANOVA to test effects of breastfeeding intent (any breast feeding versus none), delivery route (vaginal versus C-section), and skin-to-skin contact (any versus none) on in-hospital breastfeeding. Altogether 7,326 cases were included in the analysis. As can be seen in Exhibit 1 below, most women (90.7 percent) entered the hospital with the intent to breastfeed. Although the percent of women who entered without intent to breastfeed at all was small (9.3 percent), due to the large sample size there were still an ample number of women (n=681) to conduct an analysis.

Table 1  
Number of Cases per Group (N=7,326)

Breastfeeding Intent	Delivery Route	Skin-to-Skin	N
No Intent to Breastfeed			
C-section		No	223
		Yes	45
Vaginal		No	150
		Yes	263
<b>Total</b>			<b>681</b>
Intent to Breastfeed			
C-section		No	1,497
		Yes	689
Vaginal		No	830
		Yes	3,629
<b>Total</b>			<b>4,872</b>
<b>Grand Total</b>			<b>7,326</b>

## Findings

The results of the ANOVA should be interpreted cautiously due to the large sample size. As a result, some differences achieved statistical significance despite having a very small effect size, which calls into question the practical importance of the finding. We believe these findings are ultimately most useful to describe different sub-groups of women who may experience barriers and challenges to initiating breastfeeding in the hospital.

- **Intent Matters.** Most women (91 percent)<sup>3</sup> entered the hospital with the intent to breastfeed. Women who entered the hospital with the intent to breastfeed were significantly more likely to breastfeed during their hospital stay (95 percent) compared to women who entered the hospital without the intent (37 percent).<sup>4</sup>
- **Delivery route was related to in-hospital breastfeeding.** Overall, women in this sample who delivered vaginally were more likely to breastfeed in the hospital (91 percent) than women who experienced a C-section (88 percent).<sup>5</sup> However the effect size<sup>6</sup> for this finding is extremely small and is tempered by the significant three-way interaction among breastfeeding intent, delivery route, and skin-to-skin contact.
- **Women who experienced skin-to-skin contact were significantly more likely to breastfeed** than women who did not experience skin-to-skin contact with their babies (94 percent versus 84 percent).<sup>7</sup>
- **Skin-to-skin contact is more strongly related to breastfeeding for women who entered the hospital without the intent to breastfeed compared to women who enter with the intent to breastfeed.** Women who entered without intent to breastfeed AND received skin-to-skin contact were 12 percent more likely to breastfeed in the hospital than their counterparts who did not have skin-to-skin contact. Skin-to-skin contact was less predictive of breastfeeding in women who entered with the intent to breastfeed; there was only a 6percent difference between breastfeeding rates for women who experienced skin-to-skin contact and those who did not in this group.<sup>8</sup>

- **The three-way interaction among breastfeeding intent, delivery route and skin-to-skin suggests that skin-to-skin contact was especially supportive of breastfeeding for women who entered the hospital without breastfeeding intent and who experienced a C-section.**<sup>9</sup> Among women delivering vaginally, skin-to-skin contact resulted in about a 5 percent increase in breastfeeding in the hospital. However, as seen in Figure 13 below, the effect of skin-to-skin contact was much more pronounced among women who entered the hospital without the intent to breastfeed: there was a 12 percent difference among women who deliver vaginally and a 23 percent difference among women who experience a C-section.<sup>10</sup>

## Implications

**The results of this analysis suggest that hospitals have the opportunity to change a woman’s choice of feeding method when she expresses no intent to breastfeed.**

Mothers who are admitted to the hospital with no intention to breastfeed should be a red flag to nurses and doctors to encourage and perform Baby-Friendly practices. More

specifically, ensuring that mothers and babies experience skin-to-skin contact, especially after a C-section, may be one important avenue to increase breastfeeding among mothers initially resistant to doing so.



## Endnotes

1. For additional information about the evaluation, please see Harder+Company Community Research, Baby-Friendly Hospital Initiative: Evaluation Report (August 30, 2013).
2. Chi-square were conducted to determine if the case study hospitals were significantly different from the other funded hospitals. Results showed that the case study hospitals were significantly different ( $p < .01$ ) from the other funded hospitals in terms of : ethnicity (Caucasian to Non-Caucasian, Latina to Non-Latina, and African-American to Non-African-American); primary language (Spanish speaking to Non-Spanish speaking); and skin-to-skin (any skin-to-skin to none). Case study hospital were not significantly different from the other funded hospitals in terms of route of delivery (C-section to vaginal). These findings underscore that the results of the case study analyses are not generalizable to the other funded hospitals.
3. Cases that did not have data for breastfeeding intent, delivery route, AND skin-to-skin were dropped from the analysis.
4.  $F(1, 7318)=1852.7; p < .01$
5.  $F(1, 7318) =14.4; p < .01$
6. Partial eta squared=.002
7.  $F(1, 7318) =85.84; p < .01$  This finding would be more compelling if there was enough data to analyze skin-to-skin within the first hour following birth, which is an evidence-based practice and standard of BFHs.
8.  $F(1, 7318)=19.22; p < .01$
9. There were two additional two way interactions that achieved statistical significance, (the interaction between delivery route and skin-to-skin and the interaction among breastfeeding intent and delivery route), but were extremely small and potentially less meaningful in light of the three-way interaction and are not highlighted here.
10.  $F(1,7318)=4.74; p < .05$

## Acknowledgments

*First 5 LA oversees the Los Angeles County allocation of funds from Proposition 10, which added a 50-cent tax on tobacco products sold in California. Funds raised help pay for health care, education and child development programs for children from the prenatal stage to age 5 and their families. First 5 LA’s mission is to increase the number of young children who are physically and emotionally healthy, safe and ready to learn. For more information, please visit [www.First5LA.org](http://www.First5LA.org).*

### Harder + Company

Alejandro Orozco Shannon Kobes  
Dulce Degadillo Joelle Greene  
Matthew Kronz Loraine Park

### First 5 LA

Holly Campbell Gabe Dee  
Mario Snow



Champions For Our Children  
[www.First5LA.org](http://www.First5LA.org)