

# Hospital Practices and Women's Likelihood of Fulfilling Their Intention to Exclusively Breastfeed

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Exclusive breastfeeding through at least the first 6 months is the physiologically appropriate approach to infant feeding.<sup>1</sup> Mixed or formula feeding carries with it increased risks of infection, developmental problems, mortality, and long-term ailments such as diabetes and cancers for mother and child.<sup>2–5</sup> In support of the evidence, the American Academy of Pediatrics,<sup>6</sup> American College of Obstetrics and Gynecology,<sup>7</sup> the American Public Health Association,<sup>8</sup> the World Health Organization,<sup>9</sup> and many other medical and health professional organizations<sup>10–12</sup> recommend that infants consume only mother's milk (exclusive breastfeeding) for at least the first 6 months of life, followed by continued breastfeeding with age-appropriate nutrient-rich complementary foods. The revised US Healthy People 2010 national objectives call for 17% of new mothers to be exclusively breastfeeding at 6 months.<sup>13</sup> Nonetheless, national statistics indicate that less than 12% of mother–baby pairs achieve this goal.<sup>14</sup>

The “Ten Steps for the Protection, Promotion and Support of Breastfeeding”<sup>15</sup> are the central part of the Baby-Friendly Hospital Initiative, along with adherence to the *International Code of Marketing of Breast-Milk Substitutes* and subsequent World Health Organization resolutions.<sup>16</sup> These practices have been reported to support breastfeeding behaviors and influence outcomes,<sup>17,18</sup> though in some cases they have been subjects of political disputes.<sup>19</sup> However, with the exception of a recent Centers for Disease Control and Prevention study<sup>20</sup> and some data from hospitals that have achieved “Baby-Friendly” status, little is known about the prevalence of these practices in hospitals across the United States.

Grizzard et al.<sup>21</sup> assessed Massachusetts hospitals and noted that hospitals with high or moderately high levels of implementation significantly differed from hospitals with partial implementation with respect to pacifier usage ( $P=.002$ ) and postpartum breastfeeding

**Objectives.** We sought to assess whether breastfeeding-related hospital practices reported by mothers were associated with achievement of their intentions to exclusively breastfeed.

**Methods.** We used data from Listening to Mothers II, a nationally representative survey of 1573 mothers who had given birth in a hospital to a singleton in 2005. Mothers were asked retrospectively about their breastfeeding intention, infant feeding at 1 week, and 7 hospital practices.

**Results.** Primiparas reported a substantial difference between their intention to exclusively breastfeed (70%) and this practice at 1 week (50%). They also reported hospital practices that conflicted with the Baby-Friendly Ten Steps, including supplementation (49%) and pacifier use (45%). Primiparas who delivered in hospitals that practiced 6 or 7 of the steps were 6 times more likely for achieve their intention to exclusively breastfeed than were those in hospitals that practiced none or 1 of the steps. Mothers who reported supplemental feedings for their infant were less likely to achieve their intention to exclusively breastfeed: primiparas (adjusted odds ratio [AOR]=4.4; 95% confidence interval [CI]=2.1, 9.3); multiparas (AOR=8.8; 95% CI=4.4, 17.6).

**Conclusions.** Hospitals should implement policies that support breastfeeding with particular attention to eliminating supplementation of healthy newborns. (*Am J Public Health.* 2009;99:929–935. doi:10.2105/AJPH.2008.135236)

instruction ( $P<.001$ ). Acceptance of free formula was significantly associated ( $P=.03$ ) with overall Ten Steps implementation. Although several international studies have concluded that even some progress toward “Baby-Friendly Hospital” status is associated with increases in breastfeeding, available US data<sup>20</sup> on the achievement of exclusive breastfeeding in relation to the number of steps in place are limited.

The goal of our study was to provide clinical and hospital administrative decision-makers with the information they need to institute policies and practices that enhance a woman's ability to achieve her intended duration of exclusive breastfeeding. We examined the results of a national survey that asked mothers about their feeding intentions “as [they] came to the end of [their] pregnancy” and their actual feeding patterns 1 week after the birth. We also asked mothers to report on their experiences with hospital practices known to influence breastfeeding success. Based on past research, we expected that hospital practices would be related to the fulfillment of a plan to exclusively breastfeed.

## METHODS

We present results from a 2006 national survey of 1573 women aged 18 to 45 years who had given birth in 2005 in a hospital to a singleton, still-living infant. The survey, entitled Listening to Mothers II,<sup>22</sup> was developed through a collaboration between Childbirth Connection and the Boston University School of Public Health and was conducted by Harris Interactive. The standard telephone sampling approach of random-digit dialing, though advantageous for reaching a diverse population, is not feasible for a national survey of new mothers because the number of US births (4 million annually) is small in proportion to the number of households (111 million); therefore, respondents were drawn from 2 other sources.

The Internet portion of the sample was drawn from Harris Interactive's ongoing Internet panel of more than 5 million individuals who agree to periodically participate in their surveys. To ensure a more representative overall sample, a telephone sample was also drawn. Respondents in this sample were

limited to non-White mothers and were identified through the use of a proprietary list<sup>23</sup> that contained telephone numbers and zip codes of mothers who had given birth in 2005. Households in zip codes with large non-White populations were called and respondents were screened to ensure not only that they met the original inclusion criteria but also that they were non-Hispanic Black or Hispanic. The combined survey results were weighted by Harris with their validated “propensity score” methodology (G. Terhanian et al, unpublished data, 2000; available from authors on request) to adjust for potential biases associated with online respondents. We applied population weights to statistical analyses by using currently available options in SPSS version 15.0 (SPSS Inc, Chicago, IL).

**Survey**

Details on the survey methodology are available elsewhere.<sup>22</sup> The survey sample selection and consent process complied with the codes and standards of the Council of American Survey Research Organizations and the code of the National Council of Public Polls. Data were collected and housed securely by Harris Interactive and the authors had access only to a deidentified file provided by Harris Interactive.

Questions related to breastfeeding were a brief part of the 30-minute survey that also included questions on prenatal, intrapartum, and postpartum experiences; maternal attitudes related to birth; and demographic characteristics.<sup>21</sup> All phone and Internet interviews were conducted between January 20 and February 21, 2006; no mother was asked to recall experiences from more than 13 months earlier, and for most mothers the recall time period was much sooner. The average respondent had given birth 7.3 months before completing the survey (online, 7.4 months; telephone, 6.4 months). Past research has found that mothers are able to validly recall estimates of breastfeeding initiation and duration up to 3 years.<sup>24</sup>

The resulting sample of mothers who had given birth in 2005 was generally representative (within 1 to 3 percentage points) of the comparable national population of birthing mothers—aged 18 to 45 years; singleton, hospital births—based on the most recent US data<sup>25</sup> available for comparison. A table summarizing the comparison was published in a related article.<sup>26</sup> Survey respondents came from

all 50 states and the District of Columbia. In terms of age, 52% of the study population and 52% of the comparable birthing population were aged between 25 and 34 years. Non-Hispanic Black mothers made up 12% and Hispanic mothers 21% of the study sample, compared with 14% and 23%, respectively, in the birthing population. Finally, the breastfeeding rates we report are generally comparable to 2005 rates reported by the Centers for Disease Control and Prevention based on the National Immunization Survey. Although the specific questions were not the same, the overall rate of any breastfeeding at all at 1 week in our sample (73%) matches the 73.1% reported as any breastfeeding at 7 days in the 2005 National Immunization Survey.<sup>27</sup>

**Measurements**

We retrospectively asked mothers about their infant feeding intention at the end of their pregnancy, their feeding practices at 1 week (summarized in Table 1), their experience with hospital staff related to 7 specific practices associated with exclusive breastfeeding (helping mother get started breastfeeding, showing mothers how to position baby, encouraging feeding on demand, informing mothers about

community breastfeeding resources, supplementing breastfeeding with formula or water, giving the baby a pacifier, providing free formula samples to mothers), and a global question about the breastfeeding support they received from hospital staff. Where possible, these items were taken directly from the Baby-Friendly Hospital Initiative Ten Steps,<sup>15</sup> with specific Baby-Friendly Hospital Initiative steps corresponding to survey questions noted in Table 2. Mothers were given 3 possible ways to describe the pattern of feeding intended during late pregnancy and practiced at 1 week: (1) exclusive breastfeeding, (2) exclusive formula feeding, or (3) mixed feeding. In a separate part of the questionnaire, we also asked the mothers if they experienced “rooming in” and included that variable in the multivariate analysis.

We tabulated these results with a particular focus on whether women who intended to exclusively breastfeed at the end of pregnancy had in fact established exclusive breastfeeding 1 week postpartum. We recognize that many women make infant feeding decisions at an earlier point in time and that many women who establish breastfeeding continue beyond 1 week. We selected these time points to examine the association between hospital

**TABLE 1—Infant Feeding Intentions Compared With Actual Practice at 1 Week Postpartum Among US Mothers Who Gave Birth in 2005, by Parity: Listening to Mothers II Survey**

Feeding Practice <sup>b</sup> at 1 Week Postpartum	Feeding Intention <sup>a</sup>			Total, <sup>c</sup> %
	Exclusive Breastfeeding, %	Mixed (Breastfeeding and Formula), %	Exclusive Formula, %	
<b>Primiparas</b>				
Exclusive breastfeeding	44	4	1	50
Mixed (breastfeeding and formula)	20	8	0	28
Exclusive formula	6	4	13	22
<i>Total</i>	70	16	14	100
<b>Multiparas</b>				
Exclusive breastfeeding	47	5	1	53
Mixed (breastfeeding and formula)	7	11	1	18
Exclusive formula	3	5	21	29
<i>Total</i>	57	21	22	100

Note. For primiparas, n = 519. For multiparas, n = 1052.

<sup>a</sup>Women were asked, “As you came to the end of your pregnancy, how had you hoped to feed your baby? Options: breastfeeding alone, formula only, a combination of breastfeeding and formula.”

<sup>b</sup>Women were asked, “One week after you gave birth, how were you feeding your baby? Options: breastfeeding alone, formula only, a combination of breastfeeding and formula.”

<sup>c</sup>Totals are rounded.

**TABLE 2—Hospital Practices Reported by US Mothers Who Gave Birth in 2005 and Who Intended to Exclusively Breastfeed, by Parity: Listening to Mothers II Survey**

Hospital Practice (BFHI Step <sup>a</sup> )	Primiparas, %	Multiparas, %	All, %
On the whole would you say the staff, (BFHI 3)			
Encouraged breastfeeding	81	73	76
Encouraged formula feeding	5	1	2
Expressed no preference	15	26	22
Other hospital practices			
Helped you get started breastfeeding when you and your baby were ready (BFHI 4) <sup>a</sup>	89	70	77
Gave you free formula samples or offers <sup>b</sup>	74	61	65
Showed you how to position your baby to limit nipple soreness (BFHI 5) <sup>a</sup>	78	59	66
Encouraged you to feed “on demand” (BFHI 8) <sup>a</sup>	80	75	77
Told you about community breastfeeding support resources for ongoing help (BFHI 10) <sup>a</sup>	69	64	65
Provided formula or water to supplement your breastmilk (BFHI 6) <sup>a</sup>	49	29	37
Gave your baby a pacifier (BFHI 9) <sup>a</sup>	45	40	42

Note. BFHI = Baby-Friendly Hospital Initiative. Data excludes mothers with babies in the neonatal intensive care unit. For primiparas, n = 338. For multiparas, n = 577. For the total sample, N = 915.

<sup>a</sup>Most closely related BFHI step noted in parentheses. The 10 steps are available at: [http://www.unicef.org/nutrition/index\\_24806.html](http://www.unicef.org/nutrition/index_24806.html).

<sup>b</sup>Violates *International Code of Marketing Breast-Milk Substitutes*.<sup>16</sup>

practices and initial fulfillment of intention to exclusively breastfeed. Past research has found wide variations in exclusive breastfeeding by parity,<sup>28,29</sup> so we stratified all analyses to distinguish primiparas from multiparas. Because our intention was to examine the typical postpartum hospital experience for mothers, we limited analyses to those cases where the infant was not in the intensive care unit, resulting in the loss of 6% (100) of the respondents (Table 2, Table 3, and Figure 1).

### Analyses

We conducted data analyses with SPSS version 15.0 (SPSS Inc, Chicago, IL). We performed multiple logistic regression methods to examine the association between fulfillment of intention to exclusively breastfeed, various hospital practices, and related demographic variables for each parity stratum.

### RESULTS

Table 1 compares intended and 1-week rates of feeding types, by parity. Mothers' reports of fulfilling their feeding intention (exclusive breastfeeding, exclusive formula, or mixed)

differed by parity, with 65% of primiparas and 79% of multiparas feeding the baby at 1 week in the way they had intended at the end of pregnancy. The largest group were those mothers who intended to, and at 1 week were, exclusively breastfeeding their babies. Most who did not achieve their intention to exclusively breastfeed (20% of primiparous women; 7% of multiparous women) practiced mixed feeding. There were some respondents (4% of primiparas and 5% of multiparas) who had intended to use mixed feeding but were exclusively breastfeeding at 1 week.

Overall, 61% of respondents indicated that they had intended to exclusively breastfeed, and about half of the mothers (51%) were exclusively breastfeeding at 1 week. When these findings were stratified by parity and demographic characteristics of mothers, we found substantial variance across groups (data not shown). Those most likely to intend to and actually exclusively breastfeed at 1 week were mothers who were non-Hispanic White, better educated, had higher incomes, had private insurance, or were employed part-time. When we stratified the results by parity, we found that first-time mothers with the largest

discrepancy between intent and exclusive breastfeeding to be those mothers with a reported income of \$25 000 to \$49 999 (78% intention vs 49% actual exclusive breastfeeding at 1 week), Hispanic mothers (59% vs 32%, respectively), non-Hispanic Black mothers (59% vs 33%, respectively), or mothers employed part-time (78% vs 51%, respectively). Among multiparas the same general patterns emerged, though the difference between intent and actual exclusive breastfeeding was much smaller.

We also examined the bivariate relationship between intrapartum experiences and fulfillment of intention to exclusively breastfeed (data not shown). Among primiparas, factors that were related in bivariate analysis to achievement of intent to exclusively breastfeed included having an obstetrician (rather than a family doctor or midwife) as the prenatal care provider and not having a cesarean delivery. Among multiparas, there were more factors related to achievement of intention to exclusively breastfeed, including not having an epidural or a cesarean delivery, having the baby in contact with the mother immediately after birth, rooming in with the baby, and a postpartum length of stay of 2 days or less. These variables were included in the multivariate analysis.

Table 2 presents responses concerning hospital practices related to breastfeeding from mothers who intended to exclusively breastfeed and whose babies were not in the neonatal intensive care unit. Responses are stratified by parity. More than four fifths of primiparas (81%) who intended to exclusively breastfeed indicated that the staff encouraged breastfeeding. In terms of specific hospital practices, primiparas reported that in some cases staff were highly supportive in providing help getting started (89%), encouraging breastfeeding on demand (80%), and showing how to position the baby (78%). However, almost half (49%) of those first-time mothers who intended to exclusively breastfeed reported that their baby was given water or formula for supplementation, 45% reported that their baby had been given a pacifier, and 74% of those intending to exclusively breastfeed reported being given free formula samples or offers. On the whole, the pattern for multiparas involved less variation than primiparas across the

**TABLE 3—Percentage of US Mothers Who Gave Birth in 2005 Who Intended to Exclusively Breastfeed and Were Exclusively Breastfeeding at 1 Week, by Parity and Reported Hospital Practices: Listening to Mothers II Survey**

	Primiparas			Multiparas		
	Mother Experienced Practice, % (No.)	Mother Did Not Experience Practice, % (No.)	<i>P</i> <sup>a</sup>	Mother Experienced Practice, % (No.)	Mother Did Not Experience Practice, % (No.)	<i>P</i> <sup>a</sup>
<b>Hospital practice</b>						
Helped you get started breastfeeding when you and your baby were ready	69 (301)	33 (36)	<.001**	83 (403)	82 (173)	.691
Gave you free formula samples or offers	61 (249)	74 (90)	.002	77 (349)	92 (228)	<.001
Showed you how to position your baby to limit nipple soreness	69 (263)	49 (75)	.002	82 (339)	83 (238)	.883
Encouraged you to feed “on demand”	69 (271)	50 (66)	.004	87 (432)	70 (144)	<.001
Told you about community breastfeeding support resources for ongoing help	73 (231)	48 (106)	<.001	84 (367)	81 (210)	.334
Provided formula or water to supplement your breastmilk	49 (166)	81 (172)	<.001	56 (169)	94 (407)	<.001
Gave your baby a pacifier	57 (152)	71 (186)	.009	82 (228)	83 (349)	.640
<b>Hospital staff attitude</b>						
Hospital staff encouraged breastfeeding		67	.071		85	.115
Hospital staff encouraged formula		40			80	
Hospital staff expressed no preference		60			78	

Note. Data excludes mothers with babies in the neonatal intensive care unit.  
<sup>a</sup>*P* values reflect  $\chi^2$  test on comparisons of within parity group breastfeeding rate at 1 week across hospital practices.

different hospital practices. An analysis of these practices by race/ethnicity (data not shown) found that non-Hispanic White primiparas intending to exclusively breastfeed were much less likely to report supplementation with water or formula (40%) than were non-Hispanic Black (71%) or Hispanic (74%) mothers with this intention.

Table 3 presents data on the percentages of mothers who fulfilled their intention to exclusively breastfeed. In this table, the columns represent different levels of parity and whether the mother reported that the hospital engaged in a particular practice. For example, 69% of the mothers who intended to exclusively breastfeed and reported that hospital staff helped them get started breastfeeding were exclusively breastfeeding at 1 week. This finding can be compared with 33% of primiparas fulfilling their intention to exclusively breastfeed at 1 week in hospitals where they reported that they did not get help in starting to

breastfeed. Among primiparas there was a significant difference in the rate of achieving their intention by whether a hospital engaged in each of the practices, particularly supplementation, with slightly less than half (49%) achieving their intention to exclusively breastfeed compared with 81% in cases where there was no supplementation.

The differences for multiparas were generally less pronounced, with the exception of supplementation; 94% of the mothers who did not report supplementation occurring achieved their intention to exclusively breastfeed, compared with 56% where supplementation was reported. The provision of formula samples or coupons<sup>30</sup> was associated with a significant reduction in achievement of intention to exclusively breastfeed for both primiparas and multiparas.

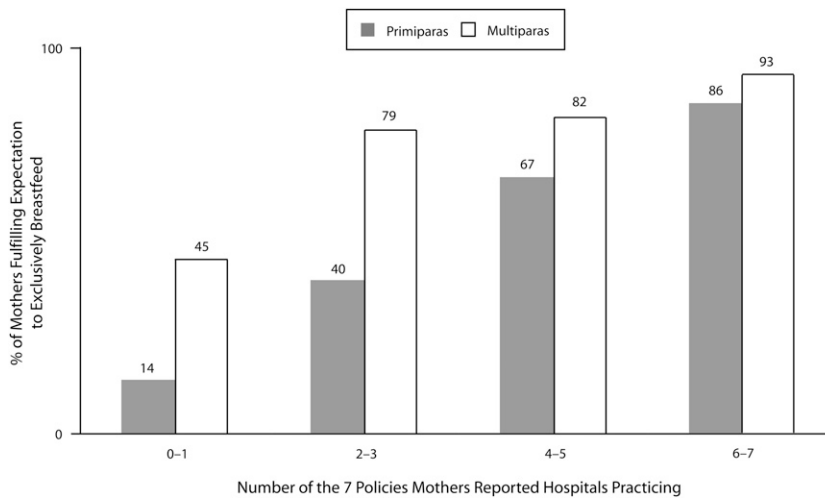
We examined whether there was a dose–response relationship between the number of supportive practices mothers reported that

hospitals engaged in and the achievement of exclusive breastfeeding. Figure 1 displays a strong cumulative effect of these policies for both parity groups. Primiparas who reported experiencing at least 6 of the 7 practices were 6 times more likely (86% vs 14%) to fulfill their intention to exclusively breastfeed than mothers experiencing 1 or none of these practices. Multiparous mothers in the same comparison were more than twice as likely (93% vs 45%).

Finally we examined what factors were most strongly related to achievement of exclusive breastfeeding intention in a multivariate analysis. Because of the substantial differences consistently noted for parity, we ran separate models for primiparas and multiparas. Consistent with our focus on the relationship between hospital practices and achievement of intention to exclusively breastfeed, we included the 7 hospital practices as well as key intrapartum variables (prenatal care provider, epidural use, method of delivery, rooming in, where the baby was in the first hours after birth, and postpartum length of stay), and demographic variables (age, education, income, race/ethnicity, employment status, and third-party payer source) associated with feeding choices.

When we controlled for all the other noted demographic and intrapartum variables, among primiparas, only 4 hospital practices were statistically significantly associated with the likelihood of achieving breastfeeding intention: (1) helping mothers get started (adjusted odds ratio [AOR]=6.3; 95% confidence interval [CI]=1.8, 21.6), (2) hospital staff not supplementing with formula or water (AOR=4.4; 95% CI=2.1, 9.3), (3) telling mothers about community resources for breastfeeding support (AOR=2.3; 95% CI=1.1, 4.9), and (4) staff not giving the baby a pacifier (AOR=2.3; 95% CI=1.2, 4.4). Among multiparas, 2 hospital practices significantly impacted fulfillment of intention: hospital staff not supplementing (AOR=8.8; 95% CI=4.4, 17.6) and hospital staff encouraging feeding on demand (AOR=3.4; 95% CI=1.7, 6.8). None of the demographic or intrapartum events remained significantly related to fulfillment of intended exclusive breastfeeding duration in these models.





Notes. Hospital practices: (1) staff helped mother get started breastfeeding, (2) staff showed mother how to position baby, (3) staff encouraged feeding on demand, (4) staff directed mothers to community breastfeeding resources, (5) staff did not encourage supplementing breastfeeding with formula or water, (6) staff did not encourage pacifier use, (7) staff did not give out free formula or offers. Differences in fulfillment are statistically significant across numbers of policies ( $P < .01$ ).

**FIGURE 1—Hospital support and breastfeeding success among US mothers who gave birth in 2005: Listening to Mothers II Survey.**

## DISCUSSION

We identified several hospital practices, as reported by mothers, that were strongly related to rates of exclusive breastfeeding. We used a large, representative national sample to focus on a critical time in establishing exclusive breastfeeding and examined how hospital practices were positively and negatively associated with the likelihood that a mother who intended to exclusively breastfeed her infant was actually doing so 1 week after birth. We also documented hospital practices from a unique perspective—that of mothers—rather than stated policies or reports from hospital staff. In this way, our study can serve as a complement to a recent Centers for Disease Control and Prevention survey of hospital practices and policies related to breastfeeding as reported by hospital staff at the facility level.<sup>20</sup>

We found a substantial difference between primiparas' intention to exclusively breastfeed (70%) and their actual rate of exclusive breastfeeding 1 week after birth (50%). These shifts between intention and practice represent a huge lost opportunity to encourage and

support breastfeeding in the United States.

Applying these differences to national data results in a total of more than 400 000 infants annually (10% of all US births) whose mothers intended to exclusively breastfeed as they completed their pregnancies but were not doing so 1 week after birth.

Experiencing hospital practices that inhibit exclusive breastfeeding (i.e., staff supplementing breastfeeding with formula or water, being given free formula samples, babies given pacifiers) was significantly associated with mothers' failure to fulfill their intention to exclusively breastfeed. In cases where mothers reported a comprehensive package of supportive practices, primiparas were 6 times more likely and multiparas twice as likely to achieve their intention to exclusively breastfeed.

The practice of hospital staff providing formula or water to supplement breastfeeding was significantly related to failure to achieve exclusive breastfeeding. Mothers whose babies did not experience supplementation were 4.4 times (primiparas) or 8.8 times (multiparas) more likely to achieve their intention to exclusively breastfeed. The World Health Organization 1998 compendium, *Evidence for the Ten*

*Steps to Successful Breastfeeding*, confirms that there is substantial evidence behind Step 6, "Give newborn infants no food or drink other than breastmilk, unless medically indicated," reporting that the feeding of supplements disrupted breastfeeding,<sup>30</sup> a conclusion supported by studies from Honduras and Italy.<sup>31,32</sup>

## Comparison With Other Studies

Few studies have examined hospital practices as predictors of success at exclusive breastfeeding.<sup>33–35</sup> A recent study of Colorado mothers' descriptions of hospital practices and their infant feeding experiences found a significant relation between hospital practices unsupportive of breastfeeding and discontinuation of breastfeeding at 8 weeks. The study also found, as we did, a cumulative effect of hospital practices, but did not stratify mothers by parity or perform a multivariate analysis on their results.<sup>36</sup> These studies, which involved different methodologies and were done in different settings, reinforce the need for hospital practices supporting initiation and later successful continuation of exclusive breastfeeding.

## Limitations

Our study was based on a US national sample drawn from a combination of Internet and telephone respondents. Internet-based samples are increasingly being used in public opinion research,<sup>37</sup> and our data were supplemented with a telephone survey of non-White, English-speaking mothers. The combined sample was weighted to adjust for the national demographic distribution of the childbearing population and the propensity to be online. The result is a sample that is generally representative of the US birthing population and US breastfeeding rates. Although the results mirror the demographic characteristics of the US birthing population, we cannot be certain that our respondents were representative of all hospital and breastfeeding experiences of birthing women in the United States. However, there were no indications suggesting a likelihood of bias in the results.

Our study relied on mothers' recall and was not validated by records review. Past research has shown that mothers are generally accurate in their reports of their own birth experiences.<sup>38</sup> Nonetheless, it is possible that some respondents could have based their retrospective response regarding intention on their actual

breastfeeding experience. To protect against this possibility, the survey was structured to be neutral and nonjudgmental about feeding choice. It is also possible that mothers who stopped breastfeeding chose to “blame” hospital practices for their decision. To minimize this possible effect, we asked the question on breastfeeding at 1 week after the questions on hospital practice. Also the comparable national data most often used in reporting breastfeeding trends, the National Immunization Survey, as well as data from Ross Laboratories Mothers Surveys<sup>39</sup> relied on maternal recall,<sup>40</sup> and a study of maternal recall of breastfeeding experiences found mothers’ responses both valid and reliable.<sup>24</sup>

## Conclusions

Breastfeeding protection, promotion, and support may rely on identifying and using “teachable moments” to increase mothers’ intention to achieve exclusive breastfeeding, and these findings present opportunities and raise questions in 2 areas. First, should we be pleased or disappointed that 70% of first-time and 57% of experienced mothers had the intention late in their pregnancy to exclusively breastfeed? We need to consider why almost half of the multiparous mothers in 2005 reported no intention to exclusively breastfeed their baby. Clearly some efforts are needed to promote a greater interest in exclusive breastfeeding among all mothers, particularly among those who have given birth before and may have had adverse experiences. Improving in-hospital breastfeeding support for first-time mothers may have the added benefit of promoting exclusive breastfeeding in subsequent children.

Second, why are those hospital practices that have been repeatedly shown to increase breastfeeding among new mothers not more consistently instituted in United States hospitals? A large proportion of mothers stop exclusive breastfeeding within the first week, and that action was strongly related to hospital practices. As policy statements from the American Public Health Association and other leading organizations declare, these practices must be changed at the hospital and professional levels to ensure that the hospital experience more consistently contributes to the health and welfare of mothers and babies. Implementation of the updated Baby-Friendly

Hospital Initiative will contribute to increasing the proportion of mothers who are given the support they need to fulfill their intention to exclusively breastfeed. ■

## About the Authors

At the time of the study, Eugene Declercq was with School of Public Health, Boston University, MA. Miriam H. Lobbok was with the School of Public Health, University of North Carolina, Chapel Hill. Carol Sakala was with Childbirth Connections, New York, NY. MaryAnn O’Hara was with the University of Washington, Seattle.

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## Contributors

E. Declercq designed the study, wrote the first draft of the “Methods” and “Results” sections, and did the data analysis. M.H. Lobbok, M. O’Hara, and C. Sakala did the literature review and wrote the first draft of the Introduction and “Discussion” sections. C. Sakala and E. Declercq were involved in the design of the questionnaire that was the basis for the survey. All authors were involved in writing subsequent drafts.

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Robin Young assisted with the data analysis.

## Human Participant Protection

This study was ruled exempt by the institutional review board office of the Boston University School of Medicine because authors only had access to a deidentified file. Original data are securely stored at Harris Interactive.

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