

# Implementing the Ten Steps for Successful Breastfeeding in Hospitals Serving Low-Wealth Patients

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UNICEF and the World Health Organization (WHO), along with USAID and Swedish International Development Agency (SIDA), launched a comprehensive approach to protect, promote and support breastfeeding with the 1990 Innocenti Meeting and Declaration.<sup>1</sup> This document called for the implementation of Ten Steps to Successful Breastfeeding<sup>2,3</sup> to strengthen health care practices, along with calls for national committees, controls for formula marketing, and paid maternity leave. The Ten Steps have been shown to have a direct impact on breastfeeding rates at the hospital, national, and international level (see the box on the next page).<sup>4-13</sup> The Baby-Friendly Hospital Initiative (BFHI) was introduced in 1991 as a method to encourage national support and to recognize hospital-level adherence to all Ten Steps. Over the years, more than 22 000 health care facilities in more than 150 countries around the world have been designated “baby friendly” by global and national BFHI approaches, representing about 28% of all maternity facilities worldwide.<sup>14a-b,15</sup> Nonetheless, only about 5% of facilities in the United States are designated as baby friendly.

Possible reasons for the slow progress in the United States include (1) the previously limited recognition by US health professionals and health professional organizations of the importance of breastfeeding, (2) assumptions by hospitals serving low-wealth and minority populations that their patients would not be interested in breastfeeding, (3) general lack of interest in this issue among hospital staff and administration, and (4) the complexity and costs of the US-based approach to designation provided by Breastfeeding Friendly USA (BFUSA), a nongovernment organization designed for this purpose.<sup>16</sup>

To address the first and second of these concerns, the Carolina Global Breastfeeding Institute’s Breastfeeding-Friendly Healthcare project (CGBI/BFHC) was designed to support the Ten Steps in a set of hospitals located across

**Objectives.** The Ten Steps to Successful Breastfeeding is a proven approach to support breastfeeding in maternity settings; however, scant literature exists on the relative impact and interpretation of each step on breastfeeding. We assessed the Ten Steps and their relationship with in-hospital breastfeeding rates at facilities serving low-wealth populations and explored the outcomes to identify step-specific actions.

**Methods.** We present descriptive and nonparametric comparisons and qualitative findings to examine the relationship between the Ten Steps and breastfeeding rates from each hospital using baseline data collection.

**Results.** Some steps (1-policy, 2-training, 4-skin-to-skin, 6-no supplements, and 9-no artificial nipples, followed by 3-prenatal counseling, 7-rooming-in) reflected differences in relative baseline breastfeeding rates between settings. Key informant interviews revealed misunderstanding of some steps.

**Conclusions.** Self-appraisal may be less valid when not all elements of the criteria for evaluating Step implementation may be fully understood. Limited exposure and understanding may lead to self-appraisal errors, resulting in scores that are not reflective of actual practices. Nonetheless, the indication that breastfeeding rates may be better mirrored by a defined subset of steps may provide some constructive insight toward prioritizing implementation activities and simplifying assessment. These issues will be further explored in the next phase of this study. (*Am J Public Health.* 2012;102:2262–2268. doi:10.2105/AJPH.2012.300769)

North Carolina that serve low-income populations.<sup>17</sup> The overall purpose of this project is to increase breastfeeding initiation, exclusivity, and duration and reduce inequity in breastfeeding support by supporting hospitals to make improvements in the quality of breastfeeding support services by implementing the Ten Steps. CGBI/BFHC offered the opportunity to further explore the steps individually and as they relate to breastfeeding patterns.

## METHODS

The CGBI/BFHC was developed to support the implementation of the Ten Steps. CGBI/BFHC includes a quasi-experimental operational research design with pretest and posttest measurement; such operational research designs are used to study the implementation of new practices in situations where random assignment of individuals to the various

treatment states is unfeasible.<sup>18-20</sup> Hospitals participating in CGBI/BFHC were systematically assigned to 1 of 2 treatment groups: phase 1, during which hospitals carry out baseline data collection and feedback, and receive the intervention during the first period of time—in this case, 2009 through 2010—and phase 2, during which hospitals carry out baseline data collection and feedback, but no further intervention in the first period of time, and received a modified intervention during the second round, 2010 through 2011, based on lessons learned during the first round. Systematic assignment of the 6 hospitals included in the research was based on 3 initially available hospital characteristics: urbanicity, size, and whether it was a teaching hospital. These criteria were used to create the 2 comparable groups. During the first time period, phase 2 hospitals will serve as the control group for phase 1 hospitals. A group of additional hospitals that approached us for support were included as

### The Ten Steps to Successful Breastfeeding

Step 1	Have a written breastfeeding policy that is routinely communicated to all healthcare staff.
Step 2	Train all healthcare staff in skills necessary to implement this policy.
Step 3	Inform all pregnant women about the benefits and management of breastfeeding.
Step 4	Help mothers initiate breastfeeding within the first (half) hour of birth.
Step 5	Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
Step 6	Give newborn infants no food or drink other than human milk, unless medically indicated.
Step 7	Practice rooming-in—that is, allow mothers and infants to remain together—24 h/d.
Step 8	Encourage breastfeeding on demand.
Step 9	Give no artificial teats or pacifiers to breastfeeding infants.
Step 10	Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Source. UNICEF/World Health Organization.<sup>3</sup>

a group labeled “Other” hospitals, but were not included in the research design. The project design is further described elsewhere.<sup>17</sup> We used the baseline findings from the larger study.

#### Data Collection Instruments

A format was developed to collect breastfeeding initiation and exclusive breastfeeding rates from the hospitals by record review.

*Breastfeeding initiation and exclusive breastfeeding rates.* Feeding data are recorded in nurse’s notes and patient charts, but are not available from electronic record systems. To capture “any breastfeeding” and “exclusive breastfeeding” rates, each hospital carried out an intensive chart review of (1) 3 months of records, or (2) 300 consecutive patient charts, whichever were fewer, to capture a sufficient number for later comparison collected in the same fashion. The selection of 300 cases or 3 months was to ensure a large enough sample to be able to detect if a statistically significant change occurred, with a margin of error of 5 to 10 and 95% confidence, when compared with the same season in the same setting after intervention. Because the larger hospitals deliver in the range of 3000 births annually, we selected 300. In smaller hospitals with 300 to 500 births, a 25% sample was adequate for the same purpose. We defined feeding as “any breastfeeding” when there was any documentation of a breastfeeding episode. Exclusive breastfeeding was defined as any breastfeeding

plus no documentation of formula use during the hospital stay.

In addition, 3 quantitative tools and 1 qualitative tool were employed to gather information on the Ten Steps.

*Self-appraisal tool.* The BFUSA self-appraisal tool, used with permission and based heavily on the WHO/UNICEF self-appraisal tool, provides an appraisal of each facility’s adherence to the steps.<sup>21,22</sup> It is intended to be completed by a team of key management and clinical staff members. For the purposes of this study, the site coordinator and a breastfeeding interest group at each hospital completed the tool. It consists of a series of 47 yes-or-no questions about policies and practices specific to each step.

*Centers for Disease Control and Prevention Survey of Maternity Practices in Infant Nutrition and Care.* CGBI/BFHC used the Centers for Disease Control and Prevention (CDC) Maternity Practices in Infant Nutrition and Care (mPINC) as a second measure of participating hospitals’ provision of breastfeeding support. The mPINC collects data on maternity center policies and practices that support breastfeeding. The mPINC is a hospital-level instrument completed by an individual selected by hospital administration as the person most familiar with infant feeding practices at each facility.<sup>23</sup> The mPINC instrument was completed either by the same team that completed the self-appraisal tool at each hospital, or by the individual most knowledgeable about the facility’s infant feeding practices.

Only the 33 question stems and subquestions designed to assess adherence to policies and practices reflecting the Ten Steps were included in analysis.

*Knowledge, attitude, and practices eSurvey.* An eSurvey, hereafter referred to as the Carolina BF-KAP, was designed that included 25 knowledge, attitude, and practice (KAP) questions selected/developed to reflect each of the Ten Steps’ global criteria (i.e., WHO’s expanded definition of each of the steps).<sup>22</sup> Questions were from standardized instruments for assessing clinicians’ knowledge and attitudes about breastfeeding support and measuring the breastfeeding support practices.<sup>23–25</sup>

*Key-informant interviews.* The authors developed a key-informant interview guide by using a semistructured approach, with main questions, follow-up questions, and probes,<sup>26</sup> as described in detail elsewhere.<sup>17</sup>

Key informants were selected to include representatives from each of the following cadres responsible for maternity care: management, physicians, nurse-practitioners, nurses and international board certified lactation consultants.

#### Data Collection

The Carolina BF-KAP was made available to all maternity staff through the hospital site coordinator. Hospitals received both online and paper versions. The incentive of a pizza lunch event was offered as an award for the 2 facilities with the greatest percentage of staff completing the survey.

The key-informant interviews included 34 respondents. CGBI/BFHC staff, in collaboration with each site coordinator, selected respondents using purposeful sampling to represent those staff members responsible for implementation of breastfeeding-related practice change at each hospital,<sup>27</sup> and 3 to 6 interviews were conducted at each hospital. Two research staff trained in qualitative research methods conducted the interviews; 1 member of the interview team facilitated the interviews as the second took notes and asked follow-up questions when appropriate. The interviews, which took place in a private room, were recorded using a digital audio recorder. Each interview lasted between 30 and 50 minutes; the 2 research staff queried

respondents until achieving construct saturation. A professional transcriptionist created verbatim, typed records of the digitally recorded interviews.

### Analytic Approach

CGBI/BFHC utilizes established quasi-experimental analytic approaches, in which analyses are based on the individual responses in each phase, recognizing that the systematic assignment is by facility rather than by individual. In addition, multiple-case study methods are employed to explore the support required for and the processes in intervention implementation as they vary by hospital. Previously published studies of hospital implementation of the Ten Steps predominantly explore the processes and experiences of single hospitals. This allows comparison among cases, incorporating the context-sensitive nature of the data.<sup>28,29</sup>

The authors used data from 3 instruments to estimate Step achievement: (1) the BFUSA self-appraisal tool, (2) CDC National Survey of Maternity Practices in Infant Nutrition and Care (mPINC), and (3) the Carolina BF-KAP. Step-specific scores for the self-appraisal tool and mPINC were calculated using each instrument's specific scoring approach.<sup>22,23</sup> The CGBI/BFHC eSurvey included a set of knowledge, attitude, and practice questions to reflect the content of each of the Ten Steps, based on the global criteria. The questions measuring steps 3 through 9 asked the respondent to indicate the percentage of patients in the respondent's care that received the relevant baby-friendly practice. The hospital score for each step is the average of the scores from all respondents in that hospital, presented as a percentage. For steps in which more than 1 question was used to assess compliance, the score is the percentage of total possible points from all questions measuring the step. The eSurvey measured staff training for step 2 by assessing respondents' clinical knowledge of breastfeeding support using 7 knowledge questions on breastfeeding support and promotion; a step 2 score is the percentage of knowledge questions answered correctly. The document review of hospital policies conducted during the baseline assessment provided the data needed to assess adherence to steps 1 and 10; therefore, the eSurvey did not assess these steps directly, but rather measured

staff commitment to each. All quantitative analyses were conducted in Stata/IC version 10.1 software.<sup>30</sup>

Given the nature of the data available, descriptive nonparametric rank assignment approaches are used to discuss the relationship between relative initial breastfeeding rates and the relative scores on each of the individual steps. We ranked the hospitals from 1 to 6, creating a breastfeeding ranking, and ranked the score on each step similarly. If the rank on the score for the top 2 hospitals was among the top 2 step scores by rank order, and the score for the bottom ranked 2 hospitals was among the bottom 2 step score rankings, we considered this to be generally reflective of an observed association between that step and the breastfeeding ranking. No statistical test is applied.

Step adherence was evaluated using the data from the key-informant interviews. The authors developed a codebook that comprised a list of codes corresponding to the respondents' reports of their hospital's current practices of each of the Ten Steps; decision rules for when to apply each code were more fully described in a companion article.<sup>17</sup> The typed transcripts were analyzed using ATLAS.ti.<sup>31</sup>

The results from the quantitative and qualitative analyses were triangulated to establish how well a hospital achieved a specific step. Where discrepancies between data type existed, project staff discussed potential explanations based on their on-site observations. Results from both the quantitative and qualitative data were presented back to those who completed the self-appraisal tool and the mPINC survey at each hospital and discussed.

### RESULTS

The scores for each step for each hospital from the Carolina BF-KAP instrument at baseline are presented in Table 1. The scores for steps 3 (prenatal education), 5 (counseling), and 8 (cues) were among the higher scores overall, although steps 4 (skin-to-skin), 6 (no supplements), and 10 (community support) received lower scores. Cross-case analyses revealed that among the phase 1 and phase 2 hospitals, the larger teaching hospitals tended to score higher across all steps than did the smaller nonteaching hospitals, especially on

steps 1 (policy), 2 (training), 4 (skin-to-skin), and 9 (no artificial nipples). Larger teaching hospitals did slightly better than smaller nonteaching hospitals on step 3 (prenatal education). In addition, larger teaching hospitals reported more opportunities for staff to receive hands-on training than staff at smaller nonteaching hospitals.

The initial breastfeeding rates and the scores on the different steps provide a descriptive indication of which steps appear to best mirror progress in breastfeeding. Table 2 illustrates the baseline breastfeeding initiation and exclusive breastfeeding rates and the associated rank order for each hospital. The scores for each of the Ten Steps were also included as rank ordered from the highest (1) to the lowest (6). In considering which step's rankings best reflected the top 2 and bottom 2 hospitals in terms of breastfeeding rates and rank, we found that steps 1 (policy), 2 (training), 6 (no supplements), and 9 (no artificial nipples) best reflected the rankings for breastfeeding rates, followed by steps 3 (prenatal), 4 (skin-to-skin), and 7 (rooming-in). The steps that best reflected exclusive breastfeeding rate ranking were steps 1, 2, 4, and 9, followed by 3, 6, and 7. Steps 8 (cues) and 10 (community support) did not appear to be related to the rank levels of breastfeeding or of exclusive breastfeeding.

Table 3 presents brief summaries of baseline key-informant interviews by step. It is clear that there are many areas of misunderstanding or lack of forward movement on individual steps. Cross-case analyses suggested little variation exists between the phase 1, 2, or other hospitals in the project, but not within the study design, with a few exceptions, as noted in Table 3.

### DISCUSSION

The Ten Steps have been shown in the literature to be associated with increased breastfeeding rates, both in studies in individual hospitals, as well as at the national level.<sup>4-13</sup> However, these studies also indicate that there are barriers both to the full implementation of all of the Ten Step practices, and to seeking and achieving the BFUSA designation. The barriers are both internal (e.g., motivation to consider and actions to change current practices) and external (e.g., seeking this designation includes annual fees from the year of

**TABLE 1—Step Status by Combined Score, Research Phase, and Hospital: Maternity Practices in Infant Nutrition and Care (mPINC) and Carolina Breastfeeding Knowledge, Attitude and Practice Surveys**

Phase and Hospital	Step 1 (Policy), Score, Mean, or Mean $\pm$ SD	Step 2 (Training), Score, Mean, or Mean $\pm$ SD	Step 3 (Prenatal Education), Score, Mean, or Mean $\pm$ SD	Step 4 (Skin-to-Skin), Score, Mean, or Mean $\pm$ SD	Step 5 (Counseling), Score, Mean, or Mean $\pm$ SD	Step 6 (No Supplements), Score, Mean, or Mean $\pm$ SD	Step 7 (Rooming-in), Score, Mean, or Mean $\pm$ SD	Step 8 (Cues), Score, Mean, or Mean $\pm$ SD	Step 9 (No Artificial Nipples), Score, Mean, or Mean $\pm$ SD	Step 10 (Community Support), Score, Mean, or Mean $\pm$ SD
<b>Phase 1</b>										
A	80	72	86	85 <sup>a</sup>	91	59	89 <sup>a</sup>	88	68	66
B	53	52	79	42	83	25 <sup>a</sup>	21 <sup>a</sup>	86	33	45
C (L)	83	90 <sup>a</sup>	90 <sup>a</sup>	67	90	62	70	85	78	73
Mean	72.0	71.3	85.0	64.7	88.0	48.7	60.0	86.3	59.7	61.3
<b>Phase 2</b>										
A	60	64	74	51	87	36	85	90	25	88 <sup>a</sup>
B	83	84 <sup>a</sup>	79	60	83	48	70	83	91 <sup>a</sup>	62
C (L)	49	57	64 <sup>a</sup>	37	91	39	61	91	20 <sup>a</sup>	77
Mean	64.0	68.3	72.3	49.3	87.0	41.0	72.0	88.0	45.3	75.7
<b>Other<sup>b</sup></b>										
A	84	75	84	45	92	51	59	95	83	51
B	51	59	76	41	75	68	76	84	67	47
C	82	79	88	80	84	57	31	73	32	84
D	88	81	76	65	95	53	56	91	32	51
E	70	52	80	45	90	42	95	86	83	51
F	18	30	77	17	55	28	24	55	15	52
Mean	65.5	62.7	80.2	48.8	81.8	49.8	56.8	80.7	52.0	56.0
Overall	67 $\pm$ 21	66 $\pm$ 17	80 $\pm$ 7	53 $\pm$ 19	85 $\pm$ 11	48 $\pm$ 14	61 $\pm$ 25	84 $\pm$ 11	52 $\pm$ 28	62 $\pm$ 15

Note. L = larger hospitals. Step score was derived from the self-appraisal tool, mPINC, and Carolina BF-KAP eSurvey.

<sup>a</sup>Hospitals that fell outside of 1 SD.

<sup>b</sup>Other hospitals were not included in the research design, but were included in discussion and informed planning.

registration until the hospital is assessed and designated). Thereafter, there is a recurrent annual fee in addition to the ongoing required training costs.<sup>16</sup> This expense may serve as a barrier, especially if it is taken from the lactation management accounts.

We gathered data from 5 hospitals that chose not to participate in a study designed to change their practices at this time. Interestingly, these “other” hospital scores were similar or not significantly below the means of the hospitals included in the study, as seen in Table 2. This finding indicates that it is not necessarily current status alone that dictates whether a hospital feels ready to take on a process of change. If it is not progress on the steps that is the motivation, what other factors may be important? Organizational readiness to change will be more fully explored in a future publication<sup>32</sup>; however, there may be factors within and beyond the facility itself that are not captured in this study. Less expensive or step-wise approaches to designation might encourage more facilities to consider taking action on the Ten Step practices.

The differences in step scores observed between the larger, teaching hospitals and the smaller, nonteaching hospitals could be attributed to a number of factors. First, some of the larger hospitals were also teaching hospitals, perhaps increasing the likelihood that they would have the impetus to implement the more recent, evidence-based practices. Alternatively, it is possible that the teams completing the research instruments in the larger teaching hospitals may have had varying levels of awareness of all the breastfeeding support practices within their facility than did the smaller hospitals.

Of particular interest is the possibility that a smaller number of steps are most associated with breastfeeding achievement. This study did not find statistical association between the breastfeeding or exclusive breastfeeding rates and the step scores using standard statistical tests. However, there was a rather clear association between initial hospital breastfeeding rate rankings and relative rank on scores on specific steps. In particular, level of achievement of steps 1 (policy), 2 (training), and 9 (no artificial nipples) seemed to best differentiate between the hospitals with the high and low breastfeeding rankings at baseline. It should be noted that we found little association of steps

**TABLE 2—Baseline Breastfeeding and Exclusive Breastfeeding Rates by Facility, Presented in Rank Order: data from Maternity Practices in Infant Nutrition and Care (mPINC) and Carolina BF-KAP Instruments**

Step Score	Breastfeeding, % (Rank Order)	Step 1 (Policy), Range or Rank	Step 2 (Training), Range or Rank	Step 3 (Prenatal Education), Range or Rank	Step 4 (Skin-to-Skin), Range or Rank	Step 5 (Counseling), Range or Rank	Step 6 (No Supplements), Range or Rank	Step 7 (Rooming-in), Range or Rank	Step 8 (Cues), Range or Rank	Step 9 (No Artificial Nipples), Range or Rank	Step 10 (Community Support), Range or Rank
<b>Any breastfeeding</b>											
Facility <sup>a</sup>		49-83 <sup>b</sup>	52-90 <sup>b</sup>	64-90	37-85	83-91	25-62 <sup>b</sup>	21-89	83-91	20-91 <sup>b</sup>	45-88
1C	87 (1)	1 <sup>c</sup>	1 <sup>c</sup>	1 <sup>c</sup>	2 <sup>c</sup>	3	1 <sup>c</sup>	3	5	2 <sup>c</sup>	6
2B	66 (2)	1 <sup>c</sup>	2 <sup>c</sup>	3	3	5	3	3	6	1 <sup>c</sup>	3
1A	64 (3)	3	3	2	1	1	2	1	3	3	5
2C	55 (4)	6	5	6	6	1	4	5	1	6	4
2A	52 (5)	4	4	5 <sup>c</sup>	4	4	5 <sup>c</sup>	2	2	5 <sup>c</sup>	2
1B	44 (6)	5 <sup>c</sup>	6 <sup>c</sup>	3	5 <sup>c</sup>	5 <sup>c</sup>	6 <sup>c</sup>	6 <sup>c</sup>	4	4	1
<b>Exclusive breastfeeding</b>											
Facility <sup>a</sup>		49-83 <sup>b</sup>	52-90 <sup>b</sup>	64-90	37-85 <sup>b</sup>	83-91	25-62	21-89	83-91	20-91 <sup>b</sup>	45-88
2B	57 (1)	1 <sup>c</sup>	2 <sup>c</sup>	3	3	5	3	3	6	1 <sup>c</sup>	2 <sup>c</sup>
1C	51 (2)	1 <sup>c</sup>	1 <sup>c</sup>	1 <sup>c</sup>	2 <sup>c</sup>	3	1 <sup>c</sup>	3	5	2 <sup>c</sup>	5
1A	27 (3)	3	3	2	1	1	2	1	3	3	3
2A	19 (4)	4	4	5	4	4	5	2	2	5	4
1B	17 (5)	5 <sup>c</sup>	6 <sup>c</sup>	3	5 <sup>c</sup>	5 <sup>c</sup>	6 <sup>c</sup>	6 <sup>c</sup>	4	4	1
2C	14 (6)	6 <sup>c</sup>	5 <sup>c</sup>	6 <sup>c</sup>	6 <sup>c</sup>	1	4	5 <sup>c</sup>	1	6 <sup>c</sup>	6 <sup>c</sup>

Note: Any breastfeeding rate defined as any documentation of a breastfeeding episode during the hospital stay, exclusive breastfeeding rate defined as record of any breastfeeding plus no documentation of formula use during the hospital stay; data obtained from patient chart review.

<sup>a</sup>Number indicates phase group, letter indicates individual hospital.

<sup>b</sup>Range indicates steps where at least 3 of the rankings were reflective of the breastfeeding rate rank order.

<sup>c</sup>Number indicates that the highest and lowest 2 rankings reflect the highest and lowest breastfeeding rankings. The scores are both given the same rank score.

8 (cues) and 10 (community support) with levels of breastfeeding in the hospitals. Perhaps this is partially explained by the findings from the key-informant interviews in that cues were not well understood and outreach to the community was limited, but also would impact posthospitalization breastfeeding rates rather than in-hospital rates. The key-informant data revealed these and other gaps in understanding the meaning and intent in several of the steps. Hence, self-appraisals of the Ten Steps completed by facility level staff may suffer from the fact that the steps themselves may not be fully self-explanatory, and therefore may be misunderstood without the further explanation provided in background materials. This may occur even among staff in facilities attempting to implement them.

**Limitations**

Limitations of this study include 1) self-selection bias in that hospitals that had staff interested in the subject were more likely to enroll, and 2) the quasi-experimental design only allowed for comparison between treatment groups, and did not support testing for between-hospital statistical significance. However, the small number of hospitals also allowed us to explore in-depth the processes of step implementation and monitor actual step achievement. Furthermore, there may have been selection bias in the respondents who participated in the Carolina BF-KAP and in the key-informant interviews. Although whether these hospitals are truly representative of the majority of hospitals in the state or nation may be questioned, the fact that multiple hospitals were studied and the use of a multiple case approach allow for additional insights that may better serve the interests of additional sites attempting to increase exclusive breastfeeding during the hospital stay.

**Conclusions**

This study identified the fact that the Ten Steps, as stated, may not be fully understood, even by those attempting to implement them, and all involved should obtain access to the documents that further elucidate the activities necessary for their implementation. Furthermore, there were indications that achievements in some of the steps (1-policy, 2-training, 4-skin-to-skin, 6-no supplements, and 9-no artificial nipples) are

**TABLE 3—Key-Informant Interview Findings on Individual Step Status at Baseline: data from Maternity Practices in Infant Nutrition and Care (mPINC) and Carolina Breastfeeding Knowledge, Attitudes and Practices Surveys**

Step	Summary of Findings: Key-Informant Interviews
Step 1 (policy)	Lack of awareness among staff of the existence and content of a breastfeeding policy across all hospitals. This included hospitals where the hospital received a high score on step 1 on both the self-appraisal tool and the mPINC.
Step 2 (training)	Only 1 hospital had a comprehensive approach to training staff on providing breastfeeding support; only 2 others had opportunities for staff to receive hands-on training.
Step 3 (prenatal education)	Respondents indicated that step 3 was not provided by hospital and no impact on the prenatal counseling offered by care providers.
Step 4 (skin-to-skin)	Most respondents interpreted step 4 to refer exclusively to establishing breastfeeding within an hour making no mention of the practice of skin-to-skin; few staff report supporting either skin-to-skin or the establishment of breastfeeding within the first hour.
Step 5 (counseling)	Staff state that the responsibility for supporting breastfeeding, hence step 5, falls solely on the IBCLC(s) at the hospital; few noted that nurses were responsible for showing moms how to breastfeed.
Step 6 (no supplements)	Breastfeeding infants often receive formula supplementation in the nursery; this practice exists in most hospitals.
Step 7 (rooming-in)	Nurses will typically offer to take the baby to the nursery to provide the mother an opportunity to rest; this practice was instigated both by the staff and the mothers. Respondents from only 2 hospitals indicated that infants routinely roomed-in with their mothers
Step 8 (cues)	Most reported that staff respond to infant feeding cues; however, some respondents said that infant feeding cues meant feeding the infant every 4 h because “that is what the formula can say,” whereas others could only identify late hunger cues such as crying. No interview included comment on satiety cues.
Step 9 (no artificial nipples)	Although respondents reported awareness that breastfeeding infants should not receive pacifiers or bottle nipples, most indicated that breastfed infants often received pacifiers or were supplemented using nipples. One hospital had gotten rid of all pacifiers and artificial nipples.
Step 10 (community support)	Many reported that their hospital practiced step 10; however, when respondents were asked what resources were provided to breastfeeding mothers, few were able identify resources other than the IBCLC at their facility.

Note. IBCLC = international board-certified lactation consultant.

more closely aligned with breastfeeding rates than are the other 5. If this hypothesis proves true, it may be logical to strategically prioritize specific steps for greater impact. In addition, if steps are shown to not be associated with increased breastfeeding rates, independently or as part of the package, it may be possible to omit them from assessment approaches. These possibilities will be further explored in the next phase of this study. ■

### About the Authors

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### Contributors

E. C. Taylor was the project director and oversaw all project activities and contributed to writing of the draft and editing of the final article. N. C. Nickel carried out all analyses and prepared all tables, created the original

draft, wrote the methods section and prepared tables for the final article, and edited the final article. M. H. Labbok contributed the development of the project and study design, conceptualization for the draft, and the preparation and editing of the final article.

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### Human Participant Protection

The institutional review board of University of North Carolina and of each of the hospitals involved reviewed and approved this study.

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