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Andrea Crivelli-Kovach1 and Esther K. Chung2–4

Abstract

Objective: The purpose of this study was to describe current breastfeeding policies and practices among Philadelphia, PA metropolitan hospitals and changes in their policies and practices over time.

Methods: In-person group interviews were conducted to obtain a composite picture of actual breastfeeding policies and practices. One questionnaire per hospital was completed based on responses from group consensus. Twenty-five hospitals providing maternity care were contacted. Information was obtained from personnel representing different areas of maternity services. Hospitals were classified according to the degree to which they were implementing the Ten Steps to Successful Breastfeeding.

Results: Mean breastfeeding rates at suburban hospitals were significantly higher than urban hospitals (72% vs. 49%, \( p = 0.015 \)). Most hospitals were classified as high or moderately high implementers on six of the Ten Steps, including staff training (67%), printed information distributed to breastfeeding mothers (94%), breastfeeding initiation (61%), oral breastfeeding instruction given to mothers (83%), infant feeding schedules (89%), and hospital postpartum support (83%). Most hospitals reported partial or low implementation on two maternity practices: infant formula supplementation (61%) and rooming-in (72%).

Conclusions: In the past 15 years, hospitals in the Philadelphia area have an increased awareness about breastfeeding and enhanced support of breastfeeding by healthcare professionals. In spite of an increase in overall breastfeeding rates, formula supplementation in hospitals and contact time between mothers and their newborns continue to be areas of concern.

Introduction

The American Academy of Pediatrics recommends that mothers exclusively breastfeed their infants for the first year of the newborn’s life and continue for as long as is mutually desirable by the mother and her child. Since 1990, there has been a consistent rise in breastfeeding rates at hospital discharge and 6 months postpartum. The increased awareness and growth of breastfeeding in general in the United States parallel the global recognition of the importance of breastfeeding as outlined in the Innocenti Declaration and the Baby-Friendly Hospital Initiative (BFHI), launched jointly by the World Health Organization and the United Nations Children’s Fund (UNICEF) in 1991. The BFHI is the only global initiative that promotes breastfeeding within the hospital setting and is operationalized in the Ten Steps to Successful Breastfeeding.

The Health People 2010 Guidelines set the following national breastfeeding goals: 75% of mothers breastfeed at hospital discharge, 50% breastfeed at 6 months, and 25% continue for up to a year postpartum. For exclusive breastfeeding, the goals include 40% of mothers exclusively breastfeed at 3 months postpartum and 17% at 6 months. Although the percentage of U.S. breastfeeding mothers has increased steadily since 1993 (55.9% in 1993 vs. 66% in 2003), the rates continue to fall short of the projected goals. Philadelphia, PA, the fifth largest U.S. city, ranks 10th among the 10 largest cities for breastfeeding, with a breastfeeding initiation rate of 57%

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compared to the national average of 74% for babies born from 1999 to 2005.\textsuperscript{7,8}

Research in 2001 showed that hospitals implementing the Ten Steps had a higher mean breastfeeding initiation rate than other U.S. hospitals (83.3% vs. 69.5%).\textsuperscript{9} Researchers also found a positive dose–response relationship between the number of Steps implemented within the hospital and overall breastfeeding duration.\textsuperscript{10–12} Lactation difficulties during the hospital stay and within the first week following hospital discharge are associated with greater risk of early breastfeeding cessation and less success with breastfeeding future children.\textsuperscript{13} Breastfeeding outcomes are affected by inconsistencies seen in healthcare staff training,\textsuperscript{14} inadequate demonstration of proper breastfeeding techniques,\textsuperscript{15} prolonged separation of the mother–infant dyad and delayed breastfeeding initiation,\textsuperscript{16} and providing formula in the hospital discharge gift bags.\textsuperscript{17}

A baseline evaluation of Philadelphia area hospital breastfeeding policies was conducted in 1994.\textsuperscript{18} A follow-up study in 1999\textsuperscript{19} showed significant changes in breastfeeding initiation, rooming-in, and hospital discharge support practices. The purpose of this study was (a) to describe the current status of breastfeeding policies and practices in metropolitan Philadelphia, (b) to assess current implementation of the Ten Steps, and (c) to assess differences in policies and practices and compare implementation levels of the Ten Steps with 1994 and 1999 data.

Methods

Twenty-five hospitals providing maternity services were identified in metropolitan Philadelphia, which includes Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties. Since 1994, a total of 14 hospitals out of 39 providing maternity services have closed, merged services with other hospitals, or discontinued maternity care. Eighteen of the remaining 25 eligible hospitals (72%) agreed to participate in the study, approved by the Institutional Review Boards of Thomas Jefferson University and the Crozer-Keystone Health System. The seven non-participating hospitals were classified as suburban community/teaching. Non-participation was due to pending closure (n = 2) or difficulty scheduling a group interview during the study period (n = 5). The suburban hospitals who participated represented all suburban counties and were comparable overall in hospital characteristics to those who participated in 1994 and 1999.

The principal investigators identified a nurse manager and/or lactation consultant at each hospital as the primary contact. A formal letter describing the study and requesting participation was sent electronically and by standard mail. This was followed up with a phone call to answer questions and set up a group interview. The primary contact invited key personnel, including nurse managers/directors, physicians, staff nurses, lactation consultants, and childbirth educators, to an in-person group interview to obtain a composite picture of breastfeeding policies and practices at each hospital. Group interviews were conducted to control for differing perspectives and to reach consensus on each question regarding the degree of implementation for maternity practices specified in the Ten Steps. One questionnaire per hospital was completed.

The questionnaire was updated from the original questionnaire developed in 1994 to reflect changes in hospital practices over the past 15 years. For example, skin-to-skin contact as part of the hospital policy was added in the updated version. Core questions related to each of the Ten Steps and used to construct scores remained consistent with the original questionnaire to enable comparison of changes across time from 1994 to 2009. Questions were designed to measure the dimensions of the BFHI to determine the degree to which hospitals were implementing the Ten Steps.

The questionnaire was divided into 11 sections: one for hospital characteristics and the remainder for each of the Ten Steps. All questions within each section were coded as separate variables. Ten index variables representing the Ten Steps were created to classify hospitals’ level of implementation on the Ten Steps individually and overall. For questions assessing frequency of practices, categories ranged from all or most of the time (76–100%), often (51–75%), sometimes (26–50%), and seldom, if ever (0–25%) and were assigned a point value ranging from 4 to 1. Points for each response within a given step were summed and divided by the number of questions used to measure implementation of that step. This produced a numerical and a categorical rating for implementation of each step and for the Ten Steps overall: high (3.26–4.00), moderate (2.51–3.25), partial (1.76–2.50), or low (1.00–1.75) implementation. Development of the original questionnaire, calculation of scaled scores, and the system used to classify hospitals by level of implementation of the Ten Steps were described previously.\textsuperscript{20}

Breastfeeding rates were obtained from birth certificate data reported to the Pennsylvania Department of Health. The birth certificate data contain any breastfeeding (exclusive and partial) based on the newborn hospitalization and are, therefore, breastfeeding initiation rates. Frequencies were obtained for hospital characteristics, maternity practices, and implementation levels for each of the Ten Steps. Student’s t test was used to compare breastfeeding rates by hospital characteristics in 2009. A K-Related Samples test was used to compare implementation mean ranks across time measurement periods. All statistical comparisons were paired comparisons for the hospitals who participated in all three studies. SPSS version 17 (SPSS, Chicago, IL) (alpha = 0.05 level of significance, two-tailed) was used for these analyses.

Results

Of the 18 participating hospitals, two-thirds (67%) were classified as community hospitals with trainees (Table 1). Seven (39%) are located in Philadelphia and classified as urban hospitals. A majority of hospitals (61%) reported having a full-time lactation consultant on staff compared with only 16% in 1994 and 20% in 1999.

More than half of the hospitals in 2009 (61%) reported breastfeeding rates between 61% and 100% compared with 32% in 1994 and 34% in 1999 (Table 2). The mean breastfeeding rate (±SD) for all participating hospitals was 62.9 ± 21.5%, representing an increase over the mean rates in 1994 (48.3 ± 19.9%, \( p = 0.006 \)) and 1999 (52.6 ± 21.7%, \( p = 0.037 \)). Significant differences were also seen between mean breastfeeding rates reported by urban hospitals and suburban hospitals (49.4 ± 25.5% vs. 71.5 ± 13.8%, \( p = 0.029 \)) and by primary payer mix (76.0 ± 12.8% private vs. 46.5 ± 19.1 public, \( p = 0.001 \)) (Table 2).
Ten Steps

Step 1 (Formal policy): Have a written breastfeeding policy that is routinely communicated to all healthcare staff. The existence of a formal written policy was assessed to evaluate each hospital’s commitment to promoting breastfeeding within the hospital setting. Integral to the existence of the policy is the extent to which the policy delineates specific practices included in the Ten Steps. Content of policies (the number of Steps included) were examined to determine the comprehensiveness of the policy and how the policy is communicated to staff and evaluated for effectiveness (Table 3).

The percent of hospitals with a formal policy increased from 74% in 1994 to 94% in 2009. Overall, there was a shift from 55% of the hospitals in 1994 having no policy or policies that included one or two BFHI Steps to 56% of the hospitals in 2009 including six to nine BFHI Steps.

Maternity practices related to the Ten Steps reflected in most policies included initiation of breastfeeding within 1 hour (61%), breastfeeding support to maintain lactation (89%), restricting infant formula supplementation (67%), encouraging breastfeeding on demand (89%), and referring mothers to community resources following hospital discharge (61%). Eight hospitals (44%) reported including skin-to-skin contact as a component of their policy, which was not explored in 1994 or 1999 (Table 3).

All hospitals made the policy accessible to staff, while less than half posted it in the maternal and child unit (28%) or on the intranet (44%). Additionally, 44% of the hospitals reported a mechanism in place to evaluate the policy.

Step 2 (Healthcare staff training): Train all healthcare staff in skills necessary to implement this policy. In 2009, all hospitals, compared with 53% in 1994 and 46% in 1999, reported that most of the staff were informed of the breastfeeding policy, which occurs at orientation and during in-service trainings. Most hospitals (83%) conducted formal in-service programs for nurses only with 28% conducting the trainings on a monthly, quarterly, or semiannual basis and

### Table 1. Hospital Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>1994 (n = 38)</th>
<th>1999 (n = 35)</th>
<th>2009 (n = 18)*</th>
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<tbody>
<tr>
<td><strong>Hospital type</strong></td>
<td>1994 (n = 38)</td>
<td>1999 (n = 35)</td>
<td>2009 (n = 18)*</td>
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<tr>
<td>Community</td>
<td>22 (57.9)</td>
<td>20 (57.1)</td>
<td>2 (11.1)</td>
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<tr>
<td>Community with trainees</td>
<td>10 (26.3)</td>
<td>12 (34.3)</td>
<td>12 (66.7)</td>
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<tr>
<td>Medical school</td>
<td>6 (15.8)</td>
<td>3 (8.6)</td>
<td>4 (22.2)</td>
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<td><strong>NICU classification</strong></td>
<td>1994 (n = 38)</td>
<td>1999 (n = 35)</td>
<td>2009 (n = 18)*</td>
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<td>No NICU</td>
<td>3 (7.9)</td>
<td>8 (22.9)</td>
<td>1 (5.6)</td>
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<tr>
<td>Level I/II NICU</td>
<td>27 (71.1)</td>
<td>19 (54.3)</td>
<td>7 (38.9)</td>
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<tr>
<td>Level III NICU</td>
<td>8 (21.1)</td>
<td>8 (22.9)</td>
<td>10 (55.6)</td>
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<tr>
<td><strong>Deliveries/year</strong></td>
<td>1994 (n = 38)</td>
<td>1999 (n = 35)</td>
<td>2009 (n = 18)*</td>
</tr>
<tr>
<td>≤1,000</td>
<td>14 (36.8)</td>
<td>12 (34.3)</td>
<td>2 (11.0)</td>
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<td>1,001–2,500</td>
<td>20 (53.0)</td>
<td>19 (54.3)</td>
<td>10 (55.6)</td>
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<td>&gt;2,500</td>
<td>4 (10.5)</td>
<td>5 (11.4)</td>
<td>6 (33.4)</td>
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<td><strong>Primary payer mix</strong></td>
<td>1994 (n = 38)</td>
<td>1999 (n = 35)</td>
<td>2009 (n = 18)*</td>
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<td>Private/HMO</td>
<td>28 (73.7)</td>
<td>26 (74.3)</td>
<td>9 (50.0)</td>
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<td>Medicaid managed care</td>
<td>10 (26.3)</td>
<td>9 (25.7)</td>
<td>7 (38.9)</td>
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<tr>
<td><strong>Presence of an IBCLC</strong></td>
<td>1994 (n = 38)</td>
<td>1999 (n = 35)</td>
<td>2009 (n = 18)*</td>
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<tr>
<td>Yes (full-time)</td>
<td>6 (15.8)</td>
<td>7 (20.0)</td>
<td>11 (61.2)</td>
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<tr>
<td>Yes (active part-time)</td>
<td>8 (21.1)</td>
<td>10 (28.6)</td>
<td>5 (27.7)</td>
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<td>No (limited part-time/no)</td>
<td>24 (63.2)</td>
<td>18 (51.5)</td>
<td>2 (11.1)</td>
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<tr>
<td><strong>Midwives deliver at hospital</strong></td>
<td>1994 (n = 38)</td>
<td>1999 (n = 35)</td>
<td>2009 (n = 18)*</td>
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<td>Yes</td>
<td>12 (31.6)</td>
<td>18 (51.4)</td>
<td>6 (33.3)</td>
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<tr>
<td><strong>Hospital stay</strong></td>
<td>1994 (n = 38)</td>
<td>1999 (n = 35)</td>
<td>2009 (n = 18)*</td>
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<td>Normal deliveries</td>
<td>30 (78.9)</td>
<td>2 (5.7)</td>
<td>1 (5.6)</td>
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<td>26–48 hours</td>
<td>8 (21.1)</td>
<td>33 (94.3)</td>
<td>17 (94.4)</td>
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<tr>
<td>Cesarean deliveries</td>
<td>1994 (n = 38)</td>
<td>1999 (n = 35)</td>
<td>2009 (n = 18)*</td>
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<tr>
<td>Up to 48 hours</td>
<td>2 (5.3)</td>
<td>0</td>
<td>1 (5.6)</td>
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<td>49–72 hours</td>
<td>31 (81.6)</td>
<td>23 (65.7)</td>
<td>4 (22.2)</td>
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<td>Over 72 hours</td>
<td>5 (13.2)</td>
<td>12 (34.3)</td>
<td>13 (72.2)</td>
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<td><strong>Record breastfeeding data</strong></td>
<td>1994 (n = 38)</td>
<td>1999 (n = 35)</td>
<td>2009 (n = 18)*</td>
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<td>Yes</td>
<td>18 (47.4)</td>
<td>28 (82.4)</td>
<td>16 (88.9)</td>
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<td><strong>Record exclusive breastfeeding</strong></td>
<td>1994 (n = 38)</td>
<td>1999 (n = 35)</td>
<td>2009 (n = 18)*</td>
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<tr>
<td>Yes</td>
<td>NA</td>
<td>NA</td>
<td>1 (5.6)</td>
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<td><strong>Data tabulated</strong></td>
<td>1994 (n = 38)</td>
<td>1999 (n = 35)</td>
<td>2009 (n = 18)*</td>
</tr>
<tr>
<td>Yes</td>
<td>12 (31.6)</td>
<td>13 (37.1)</td>
<td>16 (88.9)</td>
</tr>
</tbody>
</table>

*Where n < 18 for 2009, selected hospitals did not report the information asked.
HMO, health maintenance organization; IBCLC, International Board Certified Lactation Consultant; NA, not available; NICU, neonatal intensive care unit.
Overall breastfeeding rateb | 1994 | n | Mean (SD) | 1999 | n | Mean (SD) | 2009 | n | Mean (SD) |
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<tbody>
<tr>
<td>Overall breastfeeding ratea</td>
<td>38</td>
<td>48.3 (19.9)</td>
<td>35</td>
<td>52.6 (21.7)</td>
<td>18</td>
<td>62.9 (21.5)</td>
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<td>Breastfeeding rates by locationb</td>
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<tr>
<td>Urban hospitals</td>
<td>18</td>
<td>35.5 (18.8)</td>
<td>14</td>
<td>37.9 (23.6)</td>
<td>7</td>
<td>49.4 (25.5)</td>
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<tr>
<td>Suburban hospitals</td>
<td>20</td>
<td>59.8 (12.7)</td>
<td>21</td>
<td>62.4 (13.6)</td>
<td>11</td>
<td>71.5 (13.8)</td>
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<tr>
<td>Breastfeeding rates by payer mixc</td>
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<tr>
<td>Private/HMO</td>
<td>27</td>
<td>57.9 (13.3)</td>
<td>26</td>
<td>59.9 (17.8)</td>
<td>10</td>
<td>76.0 (12.8)</td>
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<tr>
<td>Medicaid/managed care</td>
<td>11</td>
<td>24.6 (12.0)</td>
<td>9</td>
<td>31.6 (18.6)</td>
<td>8</td>
<td>46.5 (19.1)</td>
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</table>

<table>
<thead>
<tr>
<th>Breastfeeding initiation level</th>
<th>n (%)</th>
<th>n (%)</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–20%</td>
<td>5 (13.2)</td>
<td>3 (8.6)</td>
<td>1 (5.6)</td>
</tr>
<tr>
<td>21–40%</td>
<td>10 (26.3)</td>
<td>5 (14.3)</td>
<td>2 (11.1)</td>
</tr>
<tr>
<td>41–60%</td>
<td>11 (28.9)</td>
<td>15 (42.8)</td>
<td>4 (22.2)</td>
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<tr>
<td>61–80%</td>
<td>12 (31.6)</td>
<td>9 (25.7)</td>
<td>8 (44.5)</td>
</tr>
<tr>
<td>81–100%</td>
<td>0</td>
<td>3 (8.6)</td>
<td>3 (16.7)</td>
</tr>
</tbody>
</table>

For mothers with cesarean births, most hospitals (72%) reported encouraging the mothers to hold their babies after recovery, and 44% reported the initial contact time as being over 30 minutes (18% in 1994 and 34% in 1999). Some hospitals (44%) reported the first breastfeeding 3–8 hours after recovery compared with 43% in 1999 and 60% in 1994. Fewer hospitals (17%) reported the first feeding within the first hour after recovery compared with 37% in 1999. Regarding nursery stays, 39% of the hospitals reported less than 2-hour stays, 44% reported 2–4-hour nursery stays, and 11% kept babies in the nursery for 5 or more hours, a decrease from 60% in 1994 and 46% in 1999. One hospital reported never separating the mother–infant dyad following cesarean section.

Step 5 (Breastfeeding education and support): Show mothers how to breastfeed, and maintain lactation even if they should be separated from their infants. Most hospitals (61%) reported having a full-time International Board Certified Lactation Consultant (IBCLC) on staff compared with only 16% in 1994 and 20% in 1999. Few hospitals (11%) reported no or limited IBCLC staffing.

There were no significant changes in the amount of instruction that mothers received during their hospital stay from earlier surveys or in the support that breastfeeding mothers with babies in the neonatal intensive care units receive. Most hospitals reported giving instruction with the first feeding (94%) and that mothers of babies in special care are supported in their efforts to breastfeed (83%).

Step 6 (Infant formula supplementation): Give newborn infants no food or drink other than breastmilk, unless medically indicated. A majority of hospitals (67% for vaginal births, 50% for cesarean births) reported giving newborns breastmilk as a first feeding all or most of the time compared with 47% in 1994 and 89% in 1999. Most hospitals (89%)
reported giving formula supplements compared with 37% in 1994 and 1999. Many hospitals (68%) reported that more than half the time formula supplements were given at the mother’s request.

More hospitals (44%) in 2009 reported displaying promotional materials for infant formulas compared with 29% in 1994 and 34% in 1999. Most hospitals (94%) distributed separate discharge bags to breastfeeding mothers, but only 6% distributed bags without formula or coupons, compared with 16% in 1994.

Step 7 (Rooming-in) Practice rooming-in—that is, allow mothers and infants to remain together—24 hours a day.

Most hospitals (94%) reported having a written policy that allows mothers to room-in 24 hours with their newborns compared with 73% in 1994 and 94% in 1999. However, approximately half of the hospitals (56%) reported few mothers choosing 24-hour rooming-in. There was an increase in the percentage of hospitals (56%) reporting most mothers spending over 16 hours/day with their babies (26% in 1999, 13% in 1994), and 44% reported most mothers spending from 9 to 16 hours (87% in 1994 and 71% in 1999). Most hospitals reported separating babies from their mothers for pediatric rounds (94%), hearing tests (100%), heel sticks (100%), infant baths (83%), mother baths (89%), and phototherapy (100%).

Step 8 (Feeding schedules): Encourage breastfeeding on demand.

Most hospitals (83%) encourage mothers to feed their newborns on demand and are taught to recognize hunger cues, similar to results shown in 1994 and 1999. An increase in the percentage of hospitals (39%) that reported limiting the length of feedings (29% in 1994 and 20% in 1999) was seen with many hospitals expressing concern about patient satisfaction. Of importance is that only 33% reported bringing the babies to their mothers at night to breastfeed compared with 76% in 1994 and 89% in 1999. Most hospitals (83%) reported giving babies formula at night if they were not brought to their mothers.

Step 9 (Pacifier use): Give no additional teats or pacifiers to breastfeeding infants. Most hospitals (83%) reported using pacifiers, noting that this is often at the mother’s request, similar to 1994 (77%) and 1999 (84%).

Step 10 (Hospital discharge support): Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Support for breastfeeding mothers following discharge from the hospital increased from earlier surveys with 89% reported giving various types of support versus 45% in 1994 and 46% in 1999. The most frequently offered types of support included home visits covered by insurance (83%) and referral to (a) support groups (78%), (b) a lactation consultant (83%), (c) the Special Supplemental Nutrition Program for Women, Infants and Children (100%), and (e) an outpatient lactation clinic (56%). Fewer hospitals (33%) reported follow-up telephone calls or follow-up visits at the hospital (17%). Half of the hospitals (50%) reported having breastfeeding support groups on site, an increase from only 16% in 1994 and 23% in 1999.

Hospital level of implementing the Ten Steps

Implementation level of hospitals on each of the Ten Steps and overall is summarized in Table 4. Most hospitals (72%) were classified as high or moderate implementers overall in 2009 (37% in 1994 and 51% in 1999), representing an increase in implementation levels for the surveyed hospitals since 1994. Most hospitals were classified as high or moderate implementers for six of the Ten Steps: Step 2 (staff training, 67%), Step 3 (breastfeeding information, 94%), Step 4 (breastfeeding...
initiation, 61%), Step 5 (breastfeeding support and instruction, 83%), Step 8 (feeding schedules, 89%), and Step 10 (hospital discharge support, 83%).

A K-Related Samples test for mean implementation ranks was conducted to evaluate whether hospital levels of implementing each of the Ten Steps in 2009 differed from those measured in 1994 and 1999. Mean implementation ranks differed significantly for Step 4 (breastfeeding initiation) \[ \chi^2 (2, n = 17) = 6.17, p = 0.045 \], Step 7 (rooming-in) \[ \chi^2 (2, n = 17) = 6.24, p = 0.044 \], and Step 8 (breastfeeding on demand) \[ \chi^2 (2, n = 17) = 18.16, p < 0.001 \].

Discussion

Changing hospital breastfeeding policies and practices creates an atmosphere that both protects and supports the mother–infant dyad. Researchers have examined the impact of the Ten Steps to Successful Breastfeeding on breastfeeding promotion in the hospital setting. Results of this study showed changes over the past 15 years in formal policy, staff training, breastfeeding initiation and formula supplementation, and breastfeeding support following hospital discharge.

**Formal breastfeeding policies**

Results showed an increase in hospitals with formal breastfeeding policies that included most of the maternity practices noted in the Ten Steps. Additionally, a number of hospitals promoted skin-to-skin contact, which is associated with higher rates of breastfeeding initiation and breastfeeding at 1–4 months postpartum when implemented shortly after delivery. Having a formal policy that includes most of the BFHI recommendations demonstrates the hospital’s commitment to promoting breastfeeding and provides the platform for ensuring staff training and education and support of mothers.

**Staff training**

Knowledge of breastfeeding management and professional attitudes influence a mother’s infant feeding decision and support her hospital experience. Professional knowledge is central to reducing the amount of misinformation and inconsistent advice given to breastfeeding mothers that can negatively impact a mother’s experience. The BFHI recommends 18 hours of training for healthcare professionals and staff working with breastfeeding mothers. In 2009, more hospitals reported offering annual in-service programs for their staff but provide on average less than 3 hours of training. Nurses wanting more in-depth training need to do so outside the hospital setting. Lactation consultants receive in-depth training annually as a requirement for their certification, and research shows that the presence of an IBCLC within the hospital increases breastfeeding rates.

**Breastfeeding initiation and supplementation**

Separation of the mother–infant dyad during the hospital stay is a barrier to breastfeeding, and hospital practices that routinely separate mothers and babies, delay breastfeeding, and/or use supplementary formula feedings impact breastfeeding duration. Most vaginal birth babies initiate breastfeeding early, whereas cesarean birth babies often experience delays in initiating feedings. This practice increases the likelihood that babies will receive formula supplements while separated from their mothers in the nursery. Initial evaluation in the nursery for all babies is still the norm in Philadelphia, with more hospitals separating the mother–infant dyad for up to 2 hours than reported in 1999. Nearly 40% of the hospitals reported that babies are receiving for-
mula supplementation over 50% of the time, and 68% reported that often supplements are given at the mother’s request. This represents a higher level of supplementation than that reported earlier, which may be due to several factors, including changes related to hospital closures, patient demand for mixed feedings, and the need to supplement when infants exhibit jaundice or low blood sugar.

Hospital discharge support

Support of the new mother outside the hospital setting is critical for breastfeeding maintenance and duration but remains a challenge for health professionals, particularly if there is limited access to outpatient lactation support programs. Hospitals in this study showed increased levels of outside support with telephone calls, home visits, and referral to support groups and lactation clinics. Support following discharge from the hospital is essential until breastfeeding is established.

Hospital implementation of Ten Steps

Comparisons across measurement periods from 1994 to 2009 for the 18 participating hospitals showed significant differences in mean ranks for breastfeeding initiation, rooming-in, and breastfeeding on demand. In each case, improvements in implementing these steps made from 1994 to 1999 shifted in a negative direction from 1999 to 2009, indicating the need for improvement in initiating breastfeeding within an hour after delivery, keeping the mother–infant dyad together as recommended by the BFHI, and monitoring infant formula supplementation, including night feedings.

Limitations and significance

Since 1994, a significant number of maternity services in metropolitan Philadelphia closed (36% decrease from 1994 to 2009). Although the hospitals participating in the study were similar overall in hospital characteristics to those that participated in earlier studies, the small number sampled makes comparisons of the cohorts across time periods difficult. All statistical comparisons are paired comparisons for the hospitals that participated in all three studies.

The significance of this study relates to the implementation of key maternity practices, such as breastfeeding initiation, infant supplementation, and rooming-in, reported by hospitals across the United States. Additionally, the concerted efforts of a strong breastfeeding advocacy and support network in metropolitan Philadelphia, committed to the BFHI, extends breastfeeding support beyond the hospital to a broader healthcare support network, including community organizations, primary care professionals, and hospitals. The challenge lies in determining how the needs of the mother–infant dyad can be served best by each member of this network to promote and support breastfeeding.

Summary

Results of this study showed an increase in the percentage of hospitals rated as moderate implementers of the Ten Steps overall. Despite this increase, several hospitals are still classified as partial or low implementers. Most hospitals have included more Steps in their formal policies, which indicates organizational support of breastfeeding and sets the stage for meaningful change in how policies are implemented in practice. Initiating breastfeeding shortly after delivery helps to establish breastfeeding, but practices such as formula supplementation, night feedings, and separation of the mother–infant dyad are associated with early breastfeeding termination and shorter breastfeeding duration. The challenge remains for hospitals to address implementation of maternity practices identified in their policies as providing a supportive environment for breastfeeding mothers.

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