Academy of Breastfeeding Medicine
Annotated Bibliography

"ABM Clinical Protocol #7: Model Breastfeeding Policy" (Revision 2010)

INTRODUCTION

This scientific literature review encompasses articles written in English and published between 1980 and 2008 relevant to principles of model hospital policies to optimally support breastfeeding. The purpose of this protocol is to promote a philosophy and practice of maternal–infant care that advocates breastfeeding. Care should support the normal physiologic functions involved in the establishment of this maternal–infant process and assist families choosing to breastfeed with initiating and developing a successful and satisfying experience.

Citation	Comment	**Level of Evidence
Howard CR, Howard FM, Lanphear B, et al. Randomized clinical trial of pacifier use and bottle-feeding or cup feeding and their effect on breastfeeding. *Pediatrics* 2003;111:511–518.	Breastfeeding newborns were randomly assigned to 1 of 4 intervention groups (n=700): bottle/early pacifier (n=169), bottle/late pacifier (n =167), cup/early pacifier (n =185), or cup/late pacifier (n =179). Data were collected at delivery and then follow-up at 2, 5, 10, 16, 24, 38, and 52 weeks postpartum. Results indicated that supplemental feedings, regardless of method (cup or bottle), had a negative impact on breastfeeding duration. Among infants delivered by cesarean, cup-feeding significantly prolonged exclusive, full, and overall breastfeeding duration. Exclusive breastfeeding at 4 weeks was less likely among infants exposed to pacifiers but did not affect exclusive or full duration.	I
Gray L, Miller LW, Philipp BL, et al. Breastfeeding is analgesic in healthy newborns. *Pediatrics* 2002;109:590–593.	A prospective, randomized control trial. While receiving standard blood tests, full-term breastfeeding infants (n=30) were either held and breastfed or placed swaddled in a bassinet. During the procedure, crying was reduced 91% and grimacing was reduced 84% for the breastfed group in comparison to the control group.	I

Marinelli KA, Burke GS, Dodd VL. A comparison of the safety of cup feedings and bottle feedings in premature infants whose mothers intend to breastfeed. *J Perinatol* 2001; 21:350–355.	Infants ≤34 weeks (n=56) were enrolled and once they were physiologically stable at ≥34 weeks they were given one cup-feeding and one bottle-feeding in a randomly assigned order. During cup-feedings, infants were more physiologically stable, with lower heart rates, higher oxygen saturations, and less de-saturations, than during bottle-feedings. However, cup-fed infants took less volume, over more time, than bottle-fed for these initial feedings.	I
Howard CR, de Blieck EA, ten Hoopen CB, et al. Physiologic stability of newborns during cup- and bottle-feeding. *Pediatrics* 1999;104:1204–1207.	Healthy newborns (n=98) were randomly assigned to either cup-feeding (n=51) or bottle feeding (n=47) to observe any differences between the two groups with regards to heart, respiratory, and oxygen saturation rates. There were no significant differences observed between the administration of cup- and bottle-feeding.	I
DiGirolamo AM, Grummer-Strawn LM, Fein SB. Effect of maternity-care practices on breastfeeding. Pediatrics 2008; 122(Suppl 2):S43–S49.	To determine if infant care practices, specifically 6 key Baby-Friendly practices, influenced a mother's breastfeeding duration (n=1907). Results indicated that overall only 8.1% of the mothers experienced all 6 "Baby-Friendly" practices when in the hospital. The practices most consistently associated with breastfeeding beyond 6 weeks were initiation within 1 hour of birth, giving only breast milk, and not using pacifiers. Bringing the infant to the room for feeding at night if not rooming in and not giving pain medications to the mother during delivery were also protective against early breastfeeding termination. Compared with the mothers who experienced all 6 "Baby-Friendly" practices, mothers who experienced none were about 13 times more likely to stop breastfeeding early.	II-1
Rosenberg KD, Stull JD, Adler MR, et al. Impact of hospital policies on breastfeeding outcomes. *Breastfeed Med* 2008; 3:110–116.	A hospital survey was used to assess hospital compliance with the Ten Steps to determine an overall breastfeeding Support Score (n=57 birth hospitals). Hospitals' overall breastfeeding Support Scores ranged from 49.4 to 98.2 out of a possible total score of 100. Hospital compliance with individual Steps ranged from 5.3% for Step 2 (staff training) to 93% for Step 4 (helping with breastfeeding initiation) and Step 8 (encouraging feeding on demand). After controlling for institutional differences results indicated that increases in overall hospital breastfeeding Support Scores were associated with increases in breastfeeding percentage at 2 days (p=0.021) and at 2 weeks postpartum (p=0.011). However when analyzing each step separately, only the presence of a written hospital policy was independently associated with breastfeeding percent (p=0.028).	II-1
Braun ML, Giugliani ER, Soares ME, et al. Evaluation of the impact of the Baby-Friendly Hospital initiative on rates of breastfeeding. Am J Public Health 2003;93(8):1277-9.	A prospective, observational study to analyze if Baby Friendly Hospital Initiative (BFHI) status improved overall hospital breastfeeding rates. Two cohorts of births from a hospital in Brazil were followed: one pre-BFHI status (n=187), and one 2 years after BFHI implementation (n=250). Results indicated that breastfeeding	II-1

	initiation, duration and exclusivity rates significantly increased post-BFHI implementation when compared to pre-BFHI breastfeeding rates.	
Mikiel-Kostyra K, Mazur J, Boltruszko I. Effect of early skin-to-skin contact after delivery on duration of breastfeeding: A prospective cohort study. *Acta Paediatr* 2002;91:1301–1306.	A prospective study to observe if early skin-to-skin contact after delivery effected duration of breastfeeding (n=1250). Results indicated that the implementation of skin-to-skin significantly increased mean duration of exclusive breastfeeding by 0.39 months and overall breastfeeding duration by 1.43 months. Infants who stayed with their mothers for at least 20 min were exclusively breastfed for 1.35 months longer and weaned 2.10 months later than those who never had skin-to-skin contact after delivery.	II-1
Righard L, Alade MO. Effect of delivery room routines on success of first breast-feed. *Lancet* 1990;336:1105–1107.	An observational study to better understand how delivery room routines affect the success of the first breastfeed. Infants (n=72) were observed for 2 hours after birth, half of the infants were place on the mother's abdomen immediately after birth but removed after about 20 minutes (n=34) and the other half of infants were left on the mother's abdomen uninterrupted for 1 hour. After about 20 minutes infants began to make crawling movements towards the breast; the rooting reflex soon came into play, and at an average of 50 minutes after birth most of the infants were sucking at the breast. More infants in the uninterrupted group than demonstrated the correct sucking technique (24/38 vs. 7/34). Of the mothers who had received pethidine during labor (n=40, 56%) their infants also demonstrated sedated behavior and most of them (25/40) did not suck at all.	II-1
Declercq E, Labbok MH, Sakala C, et al. Hospital practices and women's likelihood of fulfilling their intention to exclusively breastfeed. *Am J Public* Health 2009;99:929–935.	A retrospective study using data from Listening to Mothers II survey (n=1573) which asked mothers about their breastfeeding intention and infant feeding at 1 week. Primiparas mothers reported a difference between their intention to exclusively breastfeed (70%) and their behavior at 1 week (50%). Hospital practices that conflicted with the Baby-Friendly Ten Steps were also noted (e.g. supplementation (49%) and pacifier use (45%)). Primiparas who delivered in hospitals that practiced 6 or 7 of the steps were 6 times more likely to 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).	II-2
Philipp BL, Malone KL, Cimo S, Merewood A. Sustained breastfeeding rates at a US Baby-Friendly Hospital. Pediatrics 2003;112(3 Pt	To observe if a hospital would sustain elevated breastfeeding initiation rates after Baby-Friendly status, infant medical records were pulled and reviewed. Results indicated that initiation rates (87% in 1999, 82% in 2000, and 87% in 2001) and	II-2

1):e234-6.	exclusivity rates (34% in 1999, 26% in 2000, and 25% in 2001), as well as the rate of infants who received more breast milk than formula (73% in 1999, 67% in 2000, and 67% in 2001), continued to be maintained at a high level post-Baby-Friendly designation.	
Cattaneo A, Buzzetti R. Effect on rates of breast feeding of training for the Baby Friendly Hospital Initiative. BMJ 2001;323(7325):1358-62.	A controlled, non-randomized study to determine if hospital staff training is an effective means to increase breastfeeding rates. Eight hospitals from different regions in Italy participated in the training (n=571 health workers). Group 1 training occurred in hospitals after the first implementation phase while group 2 training occurred after the second phase. After the trainings were completed results indicated that staff compliance (2.4 steps to 7.7 steps) and staff knowledge of breastfeeding (0.41 to 0.72 in group 1, 0.53 to 0.75 in group 2) scores significantly increased. Hospital breastfeeding rates at discharge also significantly increased: exclusive breastfeeding (41% to 77% in group 1, 23% to 73% in group 2), rates of full (exclusive plus predominant) breastfeeding at three months (37% to 50% in group 1, 40% to 59% in group 2) and any breastfeeding at six months (43% to 62% in group 1 and 41% to 64% in group 2).	II-2
Eidelman AI, Hoffmann NW, Kaitz M. Cognitive deficits in women after childbirth. *Obstet Gynecol* 1993;81:764–767.	Performance on neuropsychiatric testing (Wechsler Logical Memory Test and the Wechsler Visual Reproduction Test) was lower in 100 women on postpartum day 1 when compared to performance of non-pregnant women.	II-2
Merten S, Dratva J, Ackermann-Liebrich U. Do baby-friendly hospitals influence breastfeeding duration on a national level? *Pediatrics* 2005;116:e702–e708.	A retrospective study which surveyed mothers from Switzerland at 9 months post partum on their infant feeding experience (n=3032). This study was conducted to observe if attending a Baby Friendly Hospital during pregnancy increased the rate of breastfeeding initiation, duration and exclusivity. Results indicated that if a hospital had good compliance with the UNICEF guidelines, then breastfeeding duration was increased for those attending a Baby Friendly hospital.	II-3
US National Library of Medicine. TOXNET: Toxicology Data Network. Drugs and Data Base http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT (Last accessed 10/11/2011).	An online database for health care professionals to use when determining if a mother can or cannot still breastfeed on certain medications.	III
Academy of Breastfeeding Medicine Protocol Committee. Clinical protocol number #19: Breastfeeding promotion in the prenatal setting.	A clinical protocol that outlines a guide on how to prenatally promote breastfeeding. Recommendations include: creating a breastfeeding-friendly office; integrate breastfeeding promotion, education and support throughout prenatal care;	III

Breastfeed Med 2009;4:43–45.	take a detailed breastfeeding history when collecting the prenatal history; be culturally sensitive; incorporate breastfeeding as an important component of the initial prenatal breast examination; and discuss breastfeeding at each visit. Specific recommendations by trimester are also outlined.	
Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #3: Hospital guidelines for the use of supplementary feedings in the healthy term breastfed neonate, revised 2009. *Breastfeed Med* 2009;4:175–182.	A clinical guideline that provides a clear definition of what supplementary and complementary feedings are, as well as recommendations as to when it is and is not appropriate to use food other than breast milk. If deemed necessary, guidelines are outlined as to which supplementation to use and how much. Suggestions are also given on how to promote successful breastfeeding.	III
American Academy of Pediatrics Section on Breastfeeding. Sample Hospital Breastfeeding Policy for Newborns, 2009. https://www.nfaap.org/netforum/eweb/dynamicpage.aspx?site=nf.aap.org&webcode=aapbks_homepage (Last accessed 10/11/2011).	A sample hospital breastfeeding policy for clinicians to use as a model to develop a hospital policy that promotes and supports breastfeeding among mothers and their newborns.	III
American *Academy of Pediatrics. Redbook: 2009 Report of the Committee on Infectious Diseases*, 28th ed. American Academy of Pediatrics, Elk Grove, IL, 2009.	A comprehensive manual listing the American Academy of Pediatrics' policies regarding control of infectious disease in children. Developed specifically for pediatricians by the Committee on Infectious Diseases.	III
Briggs GG, Freeman RK, Yaffe SJ. *Drugs in Pregnancy and Lactation*, 8th ed. Williams and Wilkins, Baltimore, 2009.	A reference guide that overviews medications that may or may not be safe for a mother to take during pregnancy or while breastfeeding.	III
United Nations Children's Fund, World Health Organization. Section 1. In: *Baby Friendly Hospital Initiative: Revised, Updated and Expanded for Integrated Care*. World Health Organization, UNICEF and Wellstart International, Geneva, 2009.	A revised outline of the Baby Friendly Hospital Initiative. Provides rationale for revisions, how to implement and sustain initiatives on a broader level, hospital level implementation information , the global criteria for hospitals to achieve Baby Friendly Hospital status, how to comply with the international code of marketing of breast-milk substitutes, and finally Baby-friendly expansion and integration possibilities.	III
World Health Organization, UNICEF. *Acceptable Medical Reasons for the Use of Breast-Milk Substitutes*. World Health Organization, Geneva, 2009.	An overview of acceptable medical reasons based on maternal and/or infant conditions that need temporary or long-term use of infant supplementation.	III
Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #5: Peripartum breastfeeding management for the healthy mother	A clinical protocol providing guidelines on how to support and manage breastfeeding mothers and their term infants. Outlines recommendations during the prenatal, labor and delivery, and immediate postpartum stage as well as outlines	III

and infant at term revision, June 2008. *Breastfeed Med* 2008;3:129–132.	problems and complications that may arise.	
AAFP Breastfeeding Advisory Committee. Family Physicians Supporting Breastfeeding: Breastfeeding Position Paper 2008. http://www.aafp.org/online/en/home/policy/policies/b/breastfeedingpositionpaper.html (Last accessed 10/11/2011).	A position paper by the American Academy of Family Physicians in support of breastfeeding. Reviews the history, benefits, and provides detailed recommendations on a wide array of topics that may influence a mother's decision to breastfeed (i.e. breast surgery, infant illness, father's role, military issues, etc.). Formal breastfeeding education for medical students, residents, and family physicians is also outlined.	III
Academy of Breastfeeding Medicine Board of Directors. Position on breastfeeding. *Breastfeed Med* 2008;3:267–270.	A position statement that emphasizes a physician's role with the promotion, protection and support of breastfeeding. This statement clearly defines the term "breastfeeding" and "human milk feeding" and lists the health benefits of breastfeeding. Fourteen tenets related to the promotion of breastfeeding are discussed (i.e. physician breastfeeding education, breastfeeding should be considered the norm, avoiding promoting supplementation, etc.). Organizations that promoted breastfeeding which are accepted and endorsed by the Academy of Breastfeeding Medicine are listed.	III
Hale TW. *Medications and Mothers' Milk*, 13th ed. Hale Publishing, Amarillo, TX, 2008.	A comprehensive book detailing which medications are and are not safe to use when breastfeeding.	III
Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #2 (2007 revision): Guidelines for hospital discharge of the breastfeeding term newborn and mother: ''The going home protocol.'' *Breastfeed Med* 2007; 2:158–165.	A clinical protocol providing guidelines on how to continue supporting a breastfeeding newborn and mother during hospital discharge. Maternal and infant risk factors for lactation problems are discussed which include history/social factors, anatomic/physiologic factors and environmental factors.	III
Ip S, Chung M, Raman G, et al. *Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries.* Evidence Report/Technology Assessment No. 153 (prepared by Tufts-New England Medical Center Evidence-Based Practice Center, under contract no. 290-02-0022). AHRQ Publication number 07-E007. Agency for Healthcare Research and Quality, Rockville, MD, 2007.	A comprehensive report that reviews and summarizes the current evidence of breastfeeding effects on the short- and long-term health outcomes for both mother and infant.	III
World Health Organization. HIV and Infant Feeding. 2007	A guide providing recommendations on the safety of a mother breastfeeding if HIV positive and best practices to prevent transmission of the virus from mother to	III

http://www.who.int/hiv/pub/mtct/infant_feeding/en/index.html (Last accessed 10/11/2011).	baby.	
American Academy of Pediatrics, American College of Obstetricians and Gynecologists. *Breastfeeding Handbook for Physicians*. American Academy of Pediatrics, Elk Grove Village, IL, 2006.	A handbook developed by both the American Academy of Pediatrics and American College of Obstetricians and Gynecologists which overviews the latest and best practices with regards to breastfeeding.	III
Wight N, Marinelli KA, Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #1: Guidelines for glucose monitoring and treatment of hypoglycemia in breastfed neonates revision June, 2006. *Breastfeed Med* 2006;1:178–184.	Clinical protocol providing guidelines for monitoring and treating hypoglycemia in breastfed neonates in the first hours/days of life. Also provides risk factors, general management recommendations, and how to support a mother with a child who has hypoglycemia.	III
Gartner LM, Morton J, Lawrence RA, et al. Breastfeeding and the use of human milk. *Pediatrics* 2005;115:496–506.	Reviews the benefits of breastfeeding for not only infant and mother, but also on a community level. Also provides a review of the contraindications to breastfeeding (i.e. mothers currently receiving chemotherapy or test positive for HIV), as well as conditions that are not contraindications to breastfeeding (i.e. smoking and breastfeeding). Recommendations for best clinical practices among health care professionals that support breastfeeding are listed and reviewed.	III
Lawrence RA, Lawrence RM. *Breastfeeding: A Guide for the Medical Profession*, 6th ed. Mosby, Philadelphia, 2005.	A comprehensive book for medical professionals that specifically focuses on breastfeeding.	III
World Health Organization, United Nations Children's Fund, Academy of Breastfeeding Medicine Board of Directors. Celebrating Innocenti 1990–2005: Achievements, Challenges and Future Imperatives. World Alliance for Breastfeeding Action http://www.innocenti15.net/index.htm (Last accessed 10/11/2010).	Recognition of the continued support for breastfeeding by UNICEF and their encouragement to internationally protect, promote and support of breastfeeding.	III
Committee on Drugs, The American Academy of Pediatrics. The transfer of drugs and other chemicals into human milk. *Pediatrics* 2001;108:776–789.	A guide of the potential transfer of drugs and chemicals through breast milk and the possible consequences. Recommendations of best practices are also given.	III
Queenan JT, ed. ACOG *Educational Bulletin Number 258. Breastfeeding: Maternal and Infant*	Comprehensive evidence based educational bulletin for obstetricians that reviews: a) benefits of breastfeeding for mothers and babies, b) obstacles and c)	III

Aspects. Committees on Health Care for Underserved Women and Obstetric Practice, American College of Obstetricians and Gynecologists, Washington, DC, July 2000, pp. 1–16. International Journal of Gynecology & Obstetrics 74 (2001) 217–232.	contraindications to breastfeeding; d) role of the obstetrician in education/support for the breastfeeding woman prenatally, peripartum and after hospital discharge (includes the Ten Steps) ; f) recommended contraception for breastfeeding mothers; g) treatment of common breastfeeding problems such as sore nipples, mastitis, abscesses, maintaining milk supply when separated, employment, weaning and breast cancer detection.	
U.S. Department of Health and Human Services. *HHS Blueprint for Action on Breastfeeding. Office on Women's Health*, U.S. Department of Health and Human Services, Washington, DC, 2000.	A review on the health benefits of breastfeeding and reaffirms that breastfeeding is the best feeding option for infants. This call to action also provides a blue print for how community stakeholders can get involved and support breastfeeding mothers as well as the best ways to educate the public about breastfeeding. Other recommendations include how to support mothers in different setting such as the health care system, workplace, and childcare facilities.	III
Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding. UNICEF, New York, 1990.	A declaration by UNICEF stating their support for breastfeeding and encouraging international protection, promotion and support of breastfeeding.	III
World Health Organization, United Nations Children's Fund. Protecting, promoting and supporting breastfeeding: The special role of maternity services (a joint WHO/UNICEF statement). *Int J Gynecol Obstet* 1990; 31(Suppl 1): 171–183.	Introduces the "Ten Steps to Successful Breast-feeding." Provides information on how to prepare health workers to promote and support breast-feeding; where and when health workers should act to promote breastfeeding; the procedures health care workers should follow to promote breastfeeding in a clinical setting.	III
WHO/UNICEF meeting on infant and young child feeding. *J Nurse Midwifery* 1980;25:31–38.	Expert statement re: importance of breastfeeding/appropriate weaning in improving infant and young child feeding with goal of developing practical measures. Focused on several themes including promotion of information, education and training of health workers concerning breastfeeding and appropriate marketing and distribution of breast milk substitutes. Maternity practices addressed. Not referenced.	III

Suggestions for Areas of Future Research:

Change in the hospital setting is hard. A comprehensive hospital breastfeeding policy that is clearly communicated to maternity staff may be a key step in the change process to support breastfeeding dyads. Rosenberg et al. reported that the presence of a written breastfeeding policy was independently associated with a statistically significant increase in the rate of breastfeeding. Certain maternity care practices like The Ten Steps to Successful Breastfeeding, the framework of the WHO-UNICEF Baby-Friendly Hospital Initiative, have been shown to influence breastfeeding outcomes. An analysis of the Infant Feeding Practices Study II (IFPS II) found that

breastfeeding women who did not experience any of the Steps were 13 times more likely to stop breastfeeding early compared to those who experienced at least six Steps. In addition, the more steps practiced, the higher the duration and exclusivity of breastfeeding at 2 months. As only 8% of women surveyed in the IFPS II reported experiencing all six of the Baby-Friendly efforts measured, a great deal of work remains to be done.

Recommendations for further research include:

1. What are effective strategies to increase implementation of Baby-Friendly practices in the hospital setting?

2. How best to monitor staff adherence to a hospital's breastfeeding policy?

3. What are the effects of additional practices, not included in the original Ten Steps, on breastfeeding initiation and duration?

****US Preventive Services Task Force Ranking of Evidence from Scientific Studies**

I	Evidence obtained from at least one properly randomized controlled trial.
II-1	Evidence obtained from well-designed controlled trials without randomization.
II-2	Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.
II-3	Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940s) could be regarded as this type of evidence.
III	Opinions of respected authorities, based on clinical experience; descriptive studies and case reports; or reports of expert committees.

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