Academy of Breastfeeding Medicine
Annotated Bibliography
"Going Home Protocol"

Reference	Content	Level of Evidence
1. Studies that assess breastfeeding effectiveness and the perceived need to supplement:		
Szajewska, H., Horvath.A. , Koletzko, B. et al. Effects of brief exposure to water, breast-milk substitutes, or other liquids on the success and duration of breastfeeding: A Systematic review. Acta Paediatr, 2006; 95:145-152.	A review article evaluating the perceived need to supplement and the negative effects of supplemental feeds during the first days of life on breastfeeding duration and rate of exclusivity of breastfeeding among healthy infants.	II-3
Chapman, DJ and Perez-Escamilla, R. Does Delayed Perception of the Onset of Lactation Shorten Breastfeeding Duration? J Hum Lact, 1999; 15(2): 107-111.	A study of 146 postpartum mothers enrolled at postpartum day 2 and followed longitudinally which suggested that the maternal perceived delay in the onset of lactation was associated with a shorter breastfeeding duration and thus the perceived need to supplement early in life.	II-3
American Academy of Pediatrics and the American College of Obstetrics and Gynecology. Breastfeeding Handbook for Physicians. 2006. Elk Grove Village, IL: AAP, chapters 7-9.	A comprehensive book written by the leading breastfeeding medicine experts which systematically describes how to assess breastfeeding in the hospital, risk factors associated with lactation problems, guidance on maintenance of breastfeeding once discharged and maternal issues which can effect breastfeeding.	III
Sacco, L.M. Caufield,L.E., Gittelsohn, J., et al. The Conceptualization of Perceived Insufficient Milk Among Mexican Mothers. J Hum Lact 2006; 22(3): 277-286.	A study based on a series of interviews of 207 first-time mothers who were or intended to breastfeed to investigate the maternal concerns in relation to perceived insufficient milk (PIM) supply with their infants. Infant crying was viewed as the chief symptom of PIM (76% of interviews) with manipulation of the maternal diet and liquid intake (70% and 62% respectively) as well as supplemental formula feeds (82%) cited as the most common coping mechanisms. This study emphasized the need to address maternal concerns in relation to PIM to promote more exclusive and prolonged breastfeeding rates.	III

Section on Breastfeeding, American Academy of Pediatrics. Breastfeeding and the Use of Human Milk. Pediatrics 2005; 115(2): 496-506.	A policy statement written by an expert committee which provides education, and recommendations on how to educate, promote, support, and maintain the best practices regarding breastfeeding.	III
Perez-Escamilla, R, Pollitt,E., Lonnerdal, B. et al. Infant Feeding Policies in Maternity Wards and Their Effect on Breastfeeding Success: An Analytical Overview. Am J of Public Health, 1994; 84(1): 89-97.	A review article analyzing maternity ward practices such as rooming-in, breastfeeding guidance, formula supplementation, and the use of commercial discharge packs on overall breastfeeding success.	III
2. Studies which examine the maternal and infant risk factors which can negatively impact effective breastfeeding and its duration:		
Ahluwalia, I.B., Morrow, B. and Hsia, J. Why Do Women Stop Breastfeeding? Findings From the Pregnancy Risk Assessment and Monitoring System. Pediatrics, 2005; 116(6): 1408-1412.	A longitudinal study using the Pregnancy Risk Assessment and Monitoring System which analyzed pooled data collected from 10 states in the US (Arkansas, Colorado, Illinois, Louisiana, Maine, New York, Ohio, Oklahoma, Utah, and West Virginia) to look at breastfeeding rates at various intervals and reasons cited for breastfeeding cessation. Results from this large study concluded that younger women and those with limited socioeconomic resources were more likely to wean in the first month. Reasons for early weaning included sore nipples, inadequate supply, infant “having difficulties” and the perception that the infant was not satiated. Women who intended to breastfeed , thought they might breastfeed, or had ambivalent feelings about breastfeeding were more like to initiate and continue breastfeeding during early infancy than those who did not plan to breastfeed. These results suggest the need for healthcare providers to target these high risk groups and offer support to promote breastfeeding in this vulnerable population.	II-3

Cernadas, J.M.,Noceda, G., Barrera, L., et al. Maternal and Perinatal Factors Influencing the Duration of Exclusive Breastfeeding During the First 6 Months of Life. J Hum Lact, 2003; 19(2): 136-144.	A longitudinal study following 539 mothers over a 6 month duration which showed a longer duration of exclusive breastfeeding associated with a positive maternal attitude about breastfeeding, adequate family support, good mother-infant bonding, appropriate suckling technique, and no nipple problems. The median duration of exclusive breastfeeding in this study was 4 months. The study suggested early recognition of these potential peripartum issues that may arise and prompt intervention and maternal education will promote longer breastfeeding duration.	II-3
Dewey, KG, Nommsen-Rivers,L.A., Heinig, M.J., et al. Risk Factors for Suboptimal Infant Breastfeeding Behavior, Delayed Onset of Lactation, and Excess Neonatal Weight Loss. Pediatrics, 2003; 112(3): 607-619.	A longitudinal study which followed 280 mothers which showed that parity, delivery mode, duration of labor, labor medications, use of breastmilk substitutes and/or pacifiers, and maternal obesity had negative impact on their infants' breastfeeding behavior scores and their overall breastfeeding success. These results suggested close peripartum observation while in the hospital and the need for close follow up when discharged from the hospital.	II-3
Friedman, M.A. and Spitzer, A.R. Discharge Criteria for the Term Newborn. Pediatric Clinics of North America, 2004; Elsevier/WB Saunders, Co., 51: 599-618.	A review article covering the physiologic and social issues facing the new full term mother/baby dyad and suggested criteria for the timing of their discharge.	III
Neifert, M.R. The Management of Breastfeeding: Prevention of Breastfeeding Tragedies. Pediatric Clinics of N America, 2001; Elsevier/WB Saunders Co., 48(2): 273-297.	An article which thoroughly reviews the infant and maternal risk factors associated with initiation of lactation and breastfeeding and maintenance of breastfeeding with emphasis on early recognition and prompt intervention to prevent future morbidity.	III
Wight, N. The Management of Breastfeeding, part 2: Management of Common Breastfeeding Issues. Pediatric Clinics of N America, 2001; Elsevier/W.B. Saunders Co, 48(2): 1-20 (mdconsult.com/das/article/body/66832283-2/jorg=journal&source=&sp1180).	A comprehensive article discussing common problems encountered in breastfeeding dyad and how to manage them.	III

3. Studies which review the medical, societal and psychosocial benefits of breastfeeding and how to promote these best practices to increase overall breastfeeding rates.		
Taveras, E.M., Grummer-Strawn, L., Richardson, M., et al. Opinions and Practices of Clinicians Associated with Continuation of Exclusive Breastfeeding. Pediatrics, 2004; 113(4): e283-290	A prospective cohort study of 288 low-risk dyads in a large multispecialty group practice was followed to assess exclusive breastfeeding rates. Of the dyads who had the lowest rates, their clinicians reported limited time during preventive visits and/or inadequate knowledge to address the breastfeeding problems as very significant barriers to promoting breastfeeding. It was proposed that policies to enhance physicians' abilities to address breastfeeding problems within the constraints of busy practices through physician education and other means could improves their ability to support exclusive breastfeeding.	II-2
Merewood, A., Mehta, S.D., Chamberlain, L.B. et al. Breastfeeding Rates in US Baby-Friendly Hospitals: Results of a National Survey. Pediatrics, 2005; 116(3): 628-634.	An analysis of data from 29 of the 32 Baby-Friendly Hospitals in the United States which showed a mean initiation rate of 83.8% in those hospitals as compared with the overall US initiation rate of 69.5% in 2001. Exclusivity of breastfeeding during hospitalization was 78.4% versus the national mean of 46.3%. This study discussed the societal benefits of breastfeeding, the Ten Steps to Successful Breastfeeding and which of these ten steps were most difficult to comply with.	II-3
Kramer, M.S. and Kakuma, R. Optimal Duration of Exclusive Breastfeeding (review). The Cochrane Collaboration from the Cochrane Library, 2006; 4: 1-84.	A review article which discusses the reasoning behind exclusive breastfeeding, optimal duration of exclusive breastfeeding, rates and efforts at promotion.	III
American Dietetic Association: Position of the American Dietetic Association: Promoting and Supporting Breastfeeding. JADA, 2005; 105: 810-818.	A Policy statement written by the ADA which discusses the benefits including improving maternal and infant health survival, improving maternal morbidity, controlling health care costs and conserving natural resources. The ADA states their position on breastfeeding as the optimal infant nutrition and discusses various methods of promotion.	III

Hannah, A., Li, R., Benton-Davis, S., et al. Regional Variation in Public Opinion About Breastfeeding in the United States. J Hum Lact, 2005; 21(3): 284-288.	A unique article using data from the Healthstyles survey to study public opinion towards breastfeeding in the US. Discussion on public knowledge about breastfeeding, public attitudes, support, and perceptions about duration are included. Interestingly, there were regional differences in these areas which emphasized the need to learn from the best regions and apply subsequent findings to those regions having less positive public opinions and low rates.	III
Innocenti Declaration 2005: On Infant and Young Child Feeding. Statement, November 22, 2005, Florence, Italy.	A multi-organizational group policy statement generated from a conference held in Florence, Italy in 2005 attended by various representatives from the Academy of Breastfeeding Medicine, IBFAN, International Lactation Consultants Association, La Leche League International, Regione Toscana, UNICEF, Wellstart International, World Alliance for Breastfeeding Action and the World Health Organization which describes the world impact of breastfeeding and the need to adopt worldwide policies for breastfeeding promotion for the betterment of mankind.	III
Section on Breastfeeding, American Academy of Pediatrics. Breastfeeding and the Use of Human Milk. Pediatrics, 2005; 115(2): 496-506.	See above discussion in section 1.	III
Philipp, B.L. and Merewood, A. The Baby-Friendly way: the Best Breastfeeding Start. Pediatric Clinics of North America, 2004; 51(3): 16 pages.	A succinct description of the Baby-Friendly hospital initiative, how to carry out its steps and the societal impact of doing so, written by two professionals who successfully implemented this in their delivery hospital, which historically had very low breastfeeding rates from a variety of factors.	III
Taveras, E.M., Capra, A.M., Braveman, P.A, et al. Clinician Support and Psychosocial Risk Factors Associated with Breastfeeding Discontinuation. Pediatrics, 2003; 112(1): 108-115.	A study which looked at the role of support from clinicians and maternal depressive symptoms on the effect of breastfeeding duration. Awareness of these factors and policies to enhance privacy and flexible schedules in the workplace and school are also discussed.	III
Moreland, J. and Coombs, J. Promoting and Supporting Breastfeeding. Am Fam Physician 2000; 61:2093-100, 2103-4.	Practical advice to the physician on prenatal support, hospital management and subsequent pediatric and maternal visits to promote best breastfeeding practices, exclusivity and optimal duration	III

U.S. Department of Health and Human Services, Office of Women's Health. Breastfeeding: H.H.S. Blueprint for Action on Breastfeeding. 2000; Washington, D.C., pp. 1-33.	A policy statement issued by the United States Government stressing the medical, and societal benefits of breastfeeding and how to optimally promote it in practice, in the workplace, in childcare facilities, and other public venues. It also emphasizes the need for public education, and how to address the marketing of breastmilk substitutes.	III
4. Studies which review the negative impact of commercial hospital discharge packs and/or the use of pacifiers on breastfeeding exclusivity, breastfeeding behaviors and duration.		
Howard, C.R., Howard, F.M., Lanphear, B., et al. Randomized Clinical Trial of Pacifier Use and Bottle-Feeding or Cupfeeding and Their Effect on Breastfeeding. Pediatrics, 2003; 111(3): 511-518.	A study comprised of 700 breastfed infants to 1 of 4 intervention groups: bottle/early (2-5 days) pacifier, bottle/late (> 4 weeks) pacifier, cup/early pacifier or cup/late pacifier. The cup or bottle infants received these types of supplementation when medically necessary. Any supplemental feeds regardless of method had a negative effect on breastfeeding duration but the method of supplementation (cup vs. bottle) showed no difference in duration. However when the infants required >2 supplements, the cup fed group had more prolonged exclusive and full breastfeeding rates. In C-section infants, cup feeding significantly prolonged exclusive, full and overall breastfeeding duration. Exclusive breastfeeding at 4 weeks was seen less in the early pacifier group of infants as was overall duration of breastfeeding but did not affect exclusive or full duration. The authors concluded that cup feeding may not necessarily have an advantage for providing supplements to the general population but may benefit dyads delivered by C-section or those who require multiple supplemental feeds. Early pacifier use was detrimental to exclusive and overall breastfeeding and thus should be avoided in the neonatal period.	I
Kramer, M.S., Barr, R.G., Dagenais, S., et al. Pacifier Use, Early Weaning, and Cry/Fuss Behavior: A Randomized Controlled Trial.	A randomized double-blind controlled trial involving 281 infants that were allocated to either a counseling intervention group that discouraged pacifier use and suggested other	I

JAMA, 2001; 286(3): 322-326.	means of consoling the infant versus the control group with no counseling. The counseling group had a total avoidance of the pacifier of 38% vs. the control group of 16% and also had reduced daily use (40.8% vs. 55.7%) and number of pacifier insertions per day (0.8 per day vs. 2.4 per day at 4 weeks, 0.8 vs. 3.0 at 6 weeks, and 1.3 vs. 3.0 at 9 weeks). In the analysis based on randomized intervention allocation, they did not find any difference in weaning at 3 months (18.9% vs. 18.3%) and no effect on cry/fuss behavior in the experimental group vs. the control, but when randomized allocation was ignored, they saw a strong observational association between exposure to daily pacifier use and weaning by 3 months (25.0% vs. 12.9%). Based on their statistical analysis, they concluded that the use of the pacifier is a possible marker of breastfeeding difficulties or reduced motivation to breastfeed rather than a true cause of early weaning.	
Howard, C., Howard, F., Lawrence, R., et al. Office Prenatal Formula Advertising and Its Effect on Breastfeeding Patterns. Obstetrics and Gynecology, 2000; 95(2): 296-303.	A randomized trial of 547 pregnant women who received either formula company based education packs or specially designed educational packs at their first prenatal visits. The groups were followed longitudinally for feeding methods and degree of breastfeeding at various intervals. The formula pack group was more likely to cease breastfeeding before discharge (RR 5.80) and before 2 weeks of age (adjusted OR 1.91). Exclusivity of breastfeeding was adversely affected in the formula pack group at 12 weeks or less (exclusive= hazards ratio 1.53, full=hazard ration 1.70, overall= hazards ratio 1.75). The study concluded that commercial formula packs should be eliminated from the prenatal settings.	I
Bliss, M.C., Wilkie, J., Acredolo, C. et al. The Effect of Discharge Pack Formula and Breast Pumps on Breastfeeding Duration and Choice of Infant Feeding Method. Birth, 1997; 24(2): 90-97.	A randomized prospective study of 1600 breastfeeding mothers, given identical discharge packs but with either formula, a breast pump, both or neither, followed longitudinally for 6 months with phone interviews. Interestingly, across the entire sample, the contents of the discharge pack had a negligible effect on the feeding	I

	method and breastfeeding duration. However, examination of select subgroups revealed in increase in early supplementation in the formula group whereas the pump group had more prolonged exclusive breastfeeding. Duration was not affected in this study.	
Neifert, M,,Gray, J., Gary,N.,et al. Effect of Two Types of Hospital Feeding Gift Packs on Duration of Breastfeeding Among Adolescent Mothers. J of Adol Health Care, 1988; 9:411-413.	A randomized investigator-blind prospective study of 60 primiparous breastfeeding adolescents (<18 years old) given a gift pack either with formula or without. 35% of the cases breastfed less than 1 month. 22% nursed > 1 month but <2 months. 43% breastfed > 2 months. Exclusivity was not mentioned in the study. There appeared to be no significant difference in the groups of who received formula and who did not but all of them found the gift packs "useful." This study may be confounded by the variable of being an adolescent which makes them vulnerable, unsupported and eager to receive any gifts by virtue of their age and SES.	I
Frank, D.A., Wirtz, S.J., Sorenson,J.R., et al. Commercial Discharge Packs and Breastfeeding Counseling: Effects on Infant Feeding Practices in a Randomized Trial. Pediatrics, 1987; 80(6): 845-854.	A randomized controlled trial involving 354 low income urban mothers with multiple interventions. One intervention compared counseling by a trained counselor with subsequent sessions with routine bedside counseling by the nursing staff. The other compared commercial discharge packs with formula with research packs consistent with the WHO Code of Marketing of Breastmilk Substitutes with no formula. Compared to the routine nursing counseling group, the research group did have a delay in the introduction of solids but no statistically significant effect on breastfeeding, exclusive or partial at 4 months. However the women who received the research packs were more likely to have prolonged breastfeeding (exclusive or partial) and to also delay the introduction of solids. In addition in the group that received either research counseling or the research discharge packs, they had lower rates of rehospitalization than the group with the commercial packs (1% vs. 14%)	I
Vogel, AM, Hutchison, BL and Mitchell, EA. The impact of pacifier use on breastfeeding: A prospective cohort study. J. Paediatr. Child	A prospective cohort study involving 350 dyads followed to 1 year to determine the impact of pacifier use on breastfeeding duration. Most mothers introduced the pacifier within the	II-2

Health, 2001; 37: 58-63.	first month postpartum and the use of the pacifier was more associated with male gender, maternal smoking during pregnancy, and lower maternal confidence with breastfeeding. Daily pacifier use was associated with early weaning (RR 1.71) and a reduction of full breastfeeding (RR 1.35). Finger sucking showed no risk. Pacifier use less than daily did not change the duration of breastfeeding.	
Howard, C.R., Howard, F.M., Lanphear, B., et al. The Effects of Early Pacifier Use on Breastfeeding Duration. Pediatrics, 1999; 103(3):e33-39.	A group of 265 dyads were followed longitudinally at 2, 6, 12, and 24 weeks and then every 90 days till weaning. Data obtained included the use of the pacifier, infant feeding, the use of supplemental foods, breastfeeding frequency, and duration, exclusivity, and breastfeeding problems. The effect of timing of introduction of the pacifier (<= 2 weeks or <= 6 weeks) was also analyzed. Their results showed that introduction of the pacifier before 6 weeks was associated with a shortened duration of full breastfeeding (hazards ratio= 1.53) and overall breastfeeding (hazards ratio = 1.61), They also tended to nurse their baby less at 2 weeks (8.1 +/- 2.6 feeds /day vs. 9.0 +/- 2.3 feeds/day) and at 12 weeks (6.3 +/_ 2.0 vs. 7.4 +/- 1.6). It was also noted that in the pacifier group these mothers were more likely to report that breastfeeding was more inconvenient and had more problems with supply. However pacifier introduction either before 2 weeks or 6 weeks did not significantly affect breastfeeding duration at 2 and 3 months in this study.	II-2
Binns, CW and Scott, JA. Using Pacifiers: What are breastfeeding mothers doing? Breastfeeding Review, 2003; 10(2): 21-25.	556 dyads were followed at birth, then 2, 6, 10, 14, 18, and 24 weeks or until weaning. At 2 weeks they found 62% of the breastfed babies were using the pacifier which climbed to 78% at 6 weeks. They saw slightly fewer feeds in the pacifier group (6.9 vs. 7.4 at 6 weeks of age) but no difference in night feeds. They found that the use of the pacifier at 2 weeks was associated with reduced likelihood of any breastfeeding even removing other confounders. They hypothesized that in the pacifier group, since there were fewer feeds, that breast simulation and thus milk production would be compromised affecting overall breastfeeding	II-3

	duration.	
Aarts, C., Hornell, A., Kylberg, E., et al. Breastfeeding Patterns in Relation to Thumb Sucking and Pacifier Use. Pediatrics, 1999; 104(4): e50-60.	A longitudinal study involving 506 dyads followed daily via recording logs and every 2 week interviews from the first week after delivery till 26 weeks of age. The study found that pacifier use was associated with fewer feeds and shorter sessions per 24 hours, shorter duration of exclusive breastfeeding and overall breastfeeding duration as compared with the non-pacifier group. There were no negative affects seen in the thumb sucking group.	II-3
Righard, L and Alade, MO. Breastfeeding and the Use of Pacifiers. Birth, 1997; 24(2): 116-120.	82 dyads were enrolled from 2-5 days post partum and were followed via phone till 4 months of age. The introduction of the pacifier was followed and the overall breastfeeding rates were calculated but exclusivity was not addressed. The overall breastfeeding rate in the non-pacifier group was 91% at 4 months and 44% in the pacifier group. The researchers saw poor latch technique in the pacifier group and attributed the early weaning to this.	II-3
Victora,C.G., Behague, D.P., Barros, F.C., et al. Pacifier Use and Short Breastfeeding Duration: Cause, Consequence, or Coincidence? Pediatrics, 1997; 99(3): 445-453.	An epidemiologic study based on a cohort of 650 dyads from Brazil who were interviewed and followed at 1, 3 and 6 months regarding pacifier use, when it was introduced, the intensity of use, the duration of breastfeeding, and parenting and breastfeeding styles were also addressed since they appeared to play a role in the use of the pacifier and subsequent breastfeeding behaviors. Their conclusions were that pacifiers may be an effective weaning mechanism used by mothers with difficulties with breastfeeding but are less likely to affect breastfeeding in the dyads where the mothers are confident about their skills. They also stated that breastfeeding promotional campaigns stressing pacifier prevention will not be successful unless they also address the other challenges of breastfeeding and maternal anxieties they recognized in the course of their study.	II-3
Barros, F.C., Victora, C.G., Semer. T.C., et al. Use of Pacifiers is Associated With Decreases in Breastfeeding Duration. Pediatrics, 1995: 95(4): 497-499.	Another longitudinal study with 605 dyads that studied the relative risk for weaning with the introduction of pacifiers at 1 month to the duration of breastfeeding at 6 months of age. The relative risk (RR) for weaning between 1-6 months for	II-3

	the pacifier users at 1 month of age was 3.84 as compared to the non- pacifier users. Even when adjusted for confounding variables the RR was 2.87 for weaning.	
Donnelly, A., Snowden, H.M., Rebfew, M, J, et al. Commercial hospital discharge packs for breastfeeding women (review). The Cochrane Collaboration from the Cochrane Library, 2005; 2, Art. no.:CD002075.	A solid review of the literature on the detrimental effects of hospital discharge packs containing formula going home with postpartum dyads on breastfeeding practice and duration.	III
Howard, C and Howard, FM. Commentary: Discharge Packs: How Much Do They Matter? Birth, 1997; 24(2): 98-101.	A commentary on the potential hazards of discharge packs to the breastfeeding dyads, the mixed messages it send to the patients, and their contributions to the obstacles of breastfeeding promotion already present that need to be overcome.	III
Speer, ME. Use of hospital discharge packs-1995. Position statement of the Texas Pediatric Society, Committee on Fetus and Newborn. Texas Medicine, 1996. 92(9): 56-57.	A policy statement from the Texas Pediatric Society condoning the use of discharge packs with formula stating that this may send mixed messages to our breastfeeding dyads, especially the younger, more vulnerable population who tend to have lower rates in general. In addition he states that this may undermine the woman's confidence in her ability to succeed with breastfeeding which may contribute to early weaning. In lieu of formula, educational materials in the discharge packs will be considered. This was a strong statement from the Society Chairman warning practitioners about the effects of sending formula home with new mothers.	III
Howard, C.R., Howard, F.M., Weitzman, M., et al. Commentaries: Antenatal Formula Advertising; Another threat to Breastfeeding. Pediatrics, 1994; 94(1):102-104.	A commentary on the aggressive infant formula marketing strategy which is not in the best interests of infants and mothers. This article discusses the physician's pivotal role in breastfeeding promotion and maintenance and how advertising in their practice setting can (inadvertently or purposefully depending on the practitioner) affect the mother's choice in infant feeding method, and exclusivity of breastfeeding. In addition these materials may give a subtle message to mothers that undermine their confidence to fully breastfeed their infants. The authors urge that pediatricians use the prenatal period to endorse breastfeeding and	III

	educate prospective parents about the benefits of breastfeeding and the risks of using formula. Physicians should also pay more attention to the subliminal messages that they may be giving their patients through the literature and commercial materials in their offices.	
Frank, DA. Commentaries: Commercial Discharge Packs and Breastfeeding Counseling: Summary of a Study. J Human Lact 1989; 5(1): 7-12.	The primary investigator's comments on the above study and her comments on design and analysis.	III
5. Studies which address pump access to mothers and breastfeeding management and/or breastfeeding management in the NICU setting or in the event of dyad separation.		
Chamberlain, L.B., McMahon,M., Phillip, B.L., et al. Breast Pump Access in the Inner City: A Hospital-Based Initiative to Provide Breast Pumps for Low-income Women. J Hum Lact, 2006; 22(1): 94-98.	An article describing a program to increase access to breast pumps through an inner-city hospital that serves a poor and minority population. Written by the same group that made this hospital Baby- Friendly.	III
Schanler, R. Post-Discharge nutrition for the preterm infant. Acta Paediatr, 2005; 94(suppl 449): 68-73.	A treatise on the use of breastmilk, fortifiers, and breastmilk substitutes when needed in the preterm infant to use at discharge.	III
Auerbach, KG and Walker, M. When the Mother of a Premature Infant Uses a Breast Pump: What Every NICU Nurse Needs to Know. Neonatal Network, 1994; 13(4): 23-29.	A very practical article on basic use of the breast pump, proper collection, and storage techniques written by two of the most respected authorities in the field.	III
Nyqvist, KH, Sjoden, P and Ewald, U. Mother's Advice About Facilitating Breastfeeding in a Neonatal Intensive Care Unit. J Hum Lact, 1994; 10(4): 237-243.	A useful article based on a series of phone interviews which gives suggestions on facilitating breastfeeding in the NICU and giving advice to the mothers.	III
Forte, A, Mayberry, LJ and Ferketich, S. Breast Milk Collection and Storage Practices Among Mothers of Hospitalized Neonates. J of Perinatology, 1987; VII (1): 35-39.	A descriptive article which discussed various methods of collection.	III
6. Studies which discuss issues about		

maintaining breastfeeding and returning to work or school.		
Kimbro, RT. On-the-Job Moms: Work and Breastfeeding Initiation and Duration for a Sample of Low-Income Women. Matern Child Health J 2006; 16:243-251.	A population study which discusses that low-income women have difficulty combining work and breastfeeding which has important health implications for both themselves and their infants. They confirmed a link between going back to work and weaning. They also found, interestingly, that women in service occupations in their sample did not differ in breastfeeding duration from stay-at home mothers or professionals.	III
Dodgson, JE, Chee, Y and Yap, TS. Workplace breastfeeding support for hospital employees. J of Advanced Nursing, 2004; 47(1): 91-100.	A good reference article which focuses on employees returning to work and maintenance of breastfeeding within the hospital setting.	III
Neilsen, J. Return to Work: Practical Management of Breastfeeding. Clin Obstetrics and Gynecology, 2004; 47(3): 724-733.	A practical article which reviews considerations prior to returning to work, childcare issues, employer issues, methods of milk expression, discussion on breast pumps, proper storage of expressed milk, milk supply issues and the role of galactagogues, and advice on helping the mother prioritize time for the new baby and herself without becoming overwhelmed by trying to "do it all." A nicely written article with good references.	III
Patient pamphlet from American Family Physician: "Information from your family doctor - Returning to work while breastfeeding." American Family Physician, December 2003; 68(11): 1-5, (/das/journal/view/65482456-2/N/14207287/ja394148).	A simply written pamphlet designed to hand out to breastfeeding patients with good advice and a useful list of web sites in the back.	III
McIntyre, E., Pisaniello, D., Gun, R., et al. Balancing breastfeeding and paid employment: a project targeting employers, women and workplaces. Health Promotional International, 2002; 17(3): 215-222.	A large scale project which involved the generation of over 50,000 information workplace kits geared towards employers and subsequent distribution of these kits to medium to large workplaces plus employer and employee organizations with preference to workplaces that employed women of childbearing age and of various diverse cultural backgrounds. There was also extensive promotion of this	III

	project which included 20 newspaper articles, 17 radio interviews or news items, and 18 articles in journals and professional magazines. Responses from employers were encouraging: between ¼ to ⅓ of the employers intended to display the materials, half of the employers who responded stated that they found these kits useful in their organization, 70% of them agreed that the kits provided sufficient information to support balancing of breastfeeding and work in their institutions, and 68% of the respondents stated that the kit provided useful solutions to support balancing breastfeeding and work in their organization.	
Meek, JY. The Management of Breastfeeding: Breastfeeding in the Workplace. Pediatric Clinics of N America, 2001; 48(2): 1-13.	A comprehensive review article which discusses the obstacles women must face to maintain lactation in the workplace. Data on initiation and duration among working women is presented and rates on increased likelihood in weaning with return to work are included and addressed. Barriers to breastfeeding and ways to overcome these are discussed in detail. Practical advice to the mother as well as to the health care provider is included. In addition, information on how to pump in the workplace is discussed. Finally legislation regarding breastfeeding in the workplace and workplace lactation programs are reviewed.	III
7. Studies which address the role and efficacy of prenatal, postnatal and peer counseling in efforts to support the breastfeeding dyad.		
Bonuck, K.A., Trombley, M., Freeman, K. et al. Randomized, Controlled Trial of Prenatal and Postnatal Lactation Consultant Intervention on Duration and Intensity of Breastfeeding up to 12 Months. Pediatrics, 2005; 116(6): 1413-1426.	A study including 304 low income women who attended one off two community clinics, serving mainly a Hispanic and/or black population. Lactation consultants provided prenatal visits, postpartum visits, home visits, and phone calls, and interviews were conducted at several points during the first year of life. In the intervention group which provided the counselors, the women were more likely to breastfeed through week 20 (53.0% vs. 39.3%) but in both the intervention and control group exclusive breastfeeding rate were low and did not differ significantly. At 13 weeks the	I

	control group had lower breastfeeding intensity, especially the US –born control subjects. "There were no significant differences in breastfeeding intensity among the US-born intervention, foreign-born intervention, and foreign-born control groups." They concluded that breastfeeding promotion should focus on US-born women and on exclusive breastfeeding.	
Labarere, J., Gelbert-Baudino, N., Ayral,A.S., et al. Efficacy of Breastfeeding Support Provided by Trained Clinicians During an Early, Routine, Preventive Visit: A Prospective, Randomized, Open Trial of 226 Mother-Infant Pairs. Pediatrics, 2005; 115(2): e139-146.	226 dyads were followed at monthly intervals and randomized to either the intervention group or the control group. The intervention group consisted of dyads who were being followed by a primary care physician who had received a 5 hour training program in breastfeeding prior to the study. The invention group attended routine preventive visits in addition to predischarge and postdischarge support and were also invited to attend a an individual routine preventive outpatient visit within 2 weeks after birth from one of the trained physicians. The control group received routine maternity ward care and was provided a phone number for peer support once discharged form the hospital. They did not attend the preventive support visit within 2 weeks of discharge. Mothers in the intervention group were more likely to report exclusive breastfeeding at 4 weeks (83.9% vs. 71.9%), and had a longer breastfeeding duration (18 weeks vs. 13 weeks). Breastfeeding difficulties were less common in the intervention group (55.3% vs. 72.8%) and maternal satisfaction was higher in the intervention group (97.7% vs. 91.1%). They researchers concluded that early preventive visits in offices of trained physicians can improve breastfeeding outcomes. They proposed that a short training program for practicing physicians might contribute to better breastfeeding rates and suggested that the multifaceted interventions needed to support breastfeeding should include primary care physicians.	I

Chapman, D.J., Damio, G., Young, S., et al. Effectiveness of Breastfeeding Peer Counseling in a Low-Income, Predominantly Latina Population. Arch Pediatr Adolesc Med, 2004; 158: 897-902.	219 dyads were randomized to either an intervention group which received extensive prenatal, perinatal and postnatal peer counselor services plus routine care vs. the control group who received only routine care. As expected the intervention group had higher initiation rates, longer breastfeeding durations and higher rates at both 1 and 3 months out.	I
Anderson, A.K.,Damio, G., Young, S., et al. A Randomized Trial Assessing the Efficacy of Peer Counseling on Exclusive Breastfeeding in a Predominantly Latina Low-Income Community. Arch Pediatr Adolesc Med, 2005: 159: 836-841.	135 cohorts were assigned to a peer counselor plus conventional support group or a conventional support group alone and were followed through 3 months of age. At discharge from the hospital, 9% of the intervention group had not initiated breastfeeding vs. 24% of the control. Non exclusivity of breastfeeding was 56% of the controls and 41% of the intervention group at discharge. By 3 months out, 97% of the controls and 73% of the intervention were not exclusively breastfeeding and amenorrhea was seen more in the intervention group as well less incidence of infant diarrheal disease.	II-3
Stremler,J and Lovera, D. Insight From a Breastfeeding Peer Support Pilot Program for Husbands and Fathers of Texas WIC Participants. J Hum Lact, 2004; 20(4): 417-422.	A description of a unique program geared towards the fathers of the babies which showed increased initiation rates in the clinics employing the peer dads. Father-to-father breastfeeding education was received favorably and successfully enlightened and empowered the fathers who help contribute to supporting the dyad at home. A nice pilot program which should be considered universally.	II-3
Merewood, A and Philipp, BL. Peer counselors for Breastfeeding Mothers in the Hospital Setting: Trials, Training, Tributes, and Tribulations. J Hum Lact 2003; 19(1): 72-76.	A description of a Baby-Friendly Teaching Hospital's peer counselor program in existence since 1998. The article reviews the program models, training methods, benefits, challenges, and practicalities of the program used in the hospital setting. The program focuses around 3 models: a telephone model, a postpartum model and a NICU model and discusses the benefits and issues of each.	III
Bronner, Y., Barber,T., Vogelhut, J., et al. Breastfeeding Peer Counseling: Results From the National WIC Survey. J Hum Lact,	This paper examined the breastfeeding peer counseling system within the context of the sate and local WIC programs in Maryland. They found the programs to be	III

2001; 17(2): 119-134.	effective in promoting and sustaining breastfeeding among WIC mothers but saw a lack of consistent policies and procedures regarding the recruitment and training of the counselors which affected the efficacy. The discussed the lack of funding which supports these useful programs as another challenge.	
8. Studies discussing the timing of hospital discharge and its effects on breastfeeding.		
Mercier, C.E., Barry, S., Paul, K., et al. Improving Newborn Preventive Services at the Birth Hospitalization: A Collaborative, Hospital-Based Quality-Improvement Project. Pediatrics, 2007; 120(3): 481-488.	A large collaborative study conducted in all of the state of Vermont hospitals with obstetrics and postpartum services which targeted preventative services such as hepatitis B immunization, assessment and management of peripartum breastfeeding issues, assessment and risk for hyperbilirubinemia, performance of metabolic screens, counseling on tobacco smoke exposure, car seat assessment, sleep position counseling, screening for domestic violence and planning for close outpatient f/u at discharge, using hospital staff members and community physicians as the implementers. In the majority of the areas, the intervention services improved outcomes: assessment improved for breastfeeding adequacy (81% intervention vs. 49% control), risk for hyperbilirubinemia (23% vs. 14%), sleep position assessment (56% vs. 13%), car seat assessment (71% vs. 42%), tobacco smoke exposure counseling (54% vs. 23%), car seat counseling (75% vs. 38%), and performance of hearing screening (97% vs. 74%). No significant changes were seen in hepatitis B immunization, metabolic screening performance, assessment of tobacco smoke exposure, or assessment for domestic violence in the home. They concluded that hospital staff and physician education and counseling was very effective in improving these preventive services in the peripartum period and will help decrease morbidity in the neonatal period.	I

Madden, J.M., Sourmerai, S.B., Lieu,T.A., et al. Length-of-Stay Policies and Ascertainment of Postdischarge Problems in Newborns. Pediatrics, 2004; 113(1): 42-49.	An interesting study which showed that after the implementation of early postpartum discharge programs (with hospital stays <48 hours or 2 nights) that the rates for hyperbilirubinemia rose, the consideration for phototherapy rose, the need for extra outpatient visits rose and that feeding problems (involving breastfeeding) doubled but the researchers hypothesized that these data reflected the more frequent post discharge assessments needed around early discharge and heightened post discharge ascertainment "bias" to account for these findings. A reasonable interpretation to this study would be to allow longer (more traditional 48 hour) postpartum stays to monitor these preventable problems before discharge which in the long run will be much more cost effective, reduce post discharge testing and morbidity, and be easier on the dyad in general.	II-3
American Academy of Pediatrics and the American College of Obstetrics and Gynecology. Breastfeeding Handbook for Physicians. 2006. Elk Grove Village, Il. AAP, chapter 7.	See above comments in section 1.	III
Section on Breastfeeding, American Academy of Pediatrics. Breastfeeding and the Use of Human Milk. Pediatrics, 2005; 115(2): 496-506.	See above comments in section 1.	III
Neifert, M. The Management of Breastfeeding: Prevention of Breastfeeding Tragedies. Pediatric Clinics of N America, 2001; Elsevier/WB Saunders, Co. 48(2): 273-297.	See above comments in section 2.	III
Margolis, LH and Schwartz, JB. The Relationship Between the Timing of Maternal Postpartum Hospital Discharge and Breastfeeding. J Hum Lact, 2000; 16(2): 121-128.	A commentary on the discharge timing based solely on predetermined financially driven rules rather than in a decision–making process based on dyad readiness which will affect breastfeeding success. Theoretically, if nursing is better established at hospital discharge morbidity and rates	III

	of rehospitalization will be less.	
9. Studies which discuss mother and baby separation and the importance of skin-to-skin contact.		
Mikiel-Kostyra, K., Mazur, J. and 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 cohort study involving 1250 dyads followed immediately postpartum to 3 years of age. With the minimum of 20 minutes of immediate skin-to-skin contact, mean duration of exclusive breastfeeding was extended in the implementation group by 0.39 months, overall breastfeeding duration was extended by 1.43 months, overall exclusive breastfeeding was extended for 1.35 months and weaning was delayed by 2.10 months longer than the control group. This was an important study which showed that even this small amount of time can make a big difference in breastfeeding outcomes.	I
Lindenberg, C., Artola, R.C., and Jiminez, V. The effect of early post-partum mother-infant contact and breastfeeding promotion on the incidence and continuation of breastfeeding. Int. J Nurs Stud, 1990; 27(3): 179-186.	A moderate sized study done in Nicaragua of 375 cohorts which showed increased breastfeeding initiation rates with immediate postpartum contact for 45 minutes and/or rooming-in.	II-3
Anderson,G.C., Moore E., Hepworth, J., and Bergman N. Early skin-to-skin contact for mothers and their healthy newborns (Review). The Cochrane Collaboration from the Cochrane Library, 2006; 4: 1-40.	An excellent review article which thorough discusses the benefits of early skin-to skin contact including temperature regulation, promotion and improvement of breastfeeding status in the immediate peripartum period and at hospital discharge, prevention of hypoglycemia, reduced respiratory distress, reduced cardiovascular complications, reduced crying and fussiness, and increased maternal-infant bonding.	III
Browne, J.V. Early relationship environments: physiology of skin-to-skin contact for parents and their preterm infants. Clin Perinatol, 2004; 31: 287-298.	An important review article which discusses the physiologic regulatory mechanisms enhanced by skin-to-skin contact in premature infants including a discussion on its enhancement in breastfeeding behaviors and lactogenesis.	III
Rapley, G. Keeping mothers and babies together- breastfeeding and bonding. Midwives, 2002; 5(10): 332-334.	A nice discussion on the importance of skin-to-skin contact, immediate postpartum initiation of breastfeeding and rooming-in in the establishment of breastfeeding and reduction of complications written by a midwife who is the	III

	deputy program director of the UNICEF UK Baby-Friendly Initiative.	

Suggestions for Areas of Future Research:

After review of the existing literature on this subject, several areas for the need for future research were recognized.

1. The literature is lacking in studies in ways to combat the perceived delayed onset of lactogenesis and the need to supplement early in the peripartum period with lower income women, particularly those who are Hispanic, who are often guided by cultural influences into using both breast and bottle (e.g. “los dos”) from the onset.
2. Research regarding the timing of discharge of the mother-baby dyad, often based on current insurance reimbursement practices (in the United States), and the rates of complications with breastfeeding that arise that could potentially have been prevented by extending their stay needs to be looked into further.
3. Studies examining maternal risk factors for lactation problems in mothers with advanced maternal age and mothers who are having highly technological induced pregnancies (ie: IVF, GIFT) need to be done as this is becoming a significant proportion of the delivering mothers now and these women often present with breastfeeding problems.
4. Finally, research would be very enlightening into the cost benefit analysis of providing pumps to NICU mothers who are separated from their infants in preventing future disease and lowering the duration of the initial hospitalization, thus reducing overall health care costs for these infants.

****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.

The Academy of Breastfeeding Medicine, Inc.

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