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Academy of Breastfeeding Medicine Clinical Protocol #19: Breastfeeding Promotion in the Prenatal Period (Revised 2024)

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Abstract

Background: The Academy of Breastfeeding Medicine revised the 2015 version of this clinical protocol to review the evidence and provide recommendations related to breastfeeding promotion in the prenatal period.

Key Information: Promoting and normalizing breastfeeding in the prenatal period can improve breastfeeding outcomes including initiation and duration of breastfeeding. Ideally, prenatal interventions should be a part of a comprehensive longitudinal breastfeeding support program.

Recommendations: Clinicians or other health workers should discuss breastfeeding at each prenatal visit. Counseling topics should include the health benefits of breastfeeding versus not breastfeeding, the basics of breastfeeding (e.g., physiology, positioning), what to expect of hospital-based and immediate postpartum breastfeeding support (i.e., Baby-Friendly Ten Steps), and the risks of unnecessary supplementation. Medical, anatomical, and other risk factors for breastfeeding challenges should be identified, and targeted anticipatory guidance should be given. Prenatal counseling should include distribution of structured breastfeeding education at low literacy levels and in the parent's preferred language. Counseling should be culturally sensitive and patient-centered, including family members when appropriate. Prenatal support may integrate various health workers (e.g., medical doctors, midwives, community health workers, lactation consultants, among others) and include various modalities including telecommunication. Enhancing breastfeeding education for prenatal care providers is also imperative. Additional themes related to implementation of recommendations for specific populations are also reviewed.

Keywords: breastfeeding, prenatal education, peer group, community health workers

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About ABM Protocols: *A central goal of the Academy of Breastfeeding Medicine (ABM) is the development of clinical protocols for managing common medical problems that may impact breastfeeding success. These protocols serve only as guidelines for the care of breastfeeding mothers and infants and do not delineate an exclusive course of treatment or serve as standards of medical care. Variations in treatment may be appropriate according to the needs of an individual patient. The Academy of Breastfeeding Medicine empowers health professionals to provide safe, inclusive, patient-centered, and evidence-based care. Women and others who are pregnant and lactating identify with a broad spectrum of genders, pronouns, and terms for feeding and parenting. There are two reasons why ABM's use of gender-inclusive language may be transitional or inconsistent across protocols. First, gender-inclusive language is nuanced and evolving across languages, cultures, and countries. Second, foundational research has not adequately described the experiences of gender-diverse individuals. Therefore, ABM advocates for, and will strive to use, language that is as inclusive and accurate as possible within this framework. For more explanation, please read ABM Position Statements on Infant Feeding and Lactation-Related Language and Gender and Breastfeeding As a Basic Human Right.*

Introduction

The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) recommend prenatal breastfeeding promotion in step 3 of the Ten Steps for Successful Breastfeeding.¹ Historically, counseling and support received prenatally is undervalued and insufficient for expressed needs.² The purpose of this protocol is to summarize interventions and strategies that promote and normalize breastfeeding and lead to improved breastfeeding outcomes. The focus of this protocol is on interventions during the prenatal period. However, best practices support integrating these strategies throughout pregnancy and after birth as a longitudinal approach to most effectively promote sustained breastfeeding.³⁻⁷

Since the 2015 version of this protocol, there has been exponential growth in research regarding breastfeeding promotion in the prenatal setting. The following recommendations are supported by the most consistent evidence found in current literature and expert opinion.

As previously outlined in the 2015 version, building a breastfeeding-friendly office where patients seek prenatal care is a strong intervention that can promote breastfeeding. The Academy of Breastfeeding Medicine (ABM) Clinical Protocol #14 (Breastfeeding-Friendly Physician's Office—Optimizing Care for Infants and Children)⁸ summarizes these recommendations. The remainder of this protocol focuses on other evidence-based interventions. In addition, ABM Protocols #2 (Guidelines for Birth Hospitalization Discharge of the Breastfeeding Dyad),⁹ #5 (Peripartum Breastfeeding Management for the Healthy Mother and Infant at Term),¹⁰ #7 (Model Maternity Policy Supportive of Breastfeeding),¹¹ #18 (Use of Antidepressants in Breastfeeding Mothers),¹² and #21 (Breastfeeding in the Setting of Substance Use or Substance Use Disorder)¹³ may also serve as useful adjuncts to this protocol.

Methods

In creating this protocol, ABM assembled teams of volunteer experts from relevant practice settings and disciplines. Authors are not limited to medical doctors or ABM members. The authors identified the relevant questions and performed a literature search using search terms (breastfeeding, prenatal, education, or intervention) as well as other relevant search terms from the years 2014 to 2023. The search was conducted

in the following databases: PubMed, MEDLINE, Web of Science, Cumulative Index of Nursing and Allied Health Literature, PsychINFO, and EMBASE. Studies were included that evaluated interventions/exposures related to prenatal breastfeeding counseling/education and that reported breastfeeding outcomes, for example, initiation, duration, and self-efficacy. A formal systematic review was not performed because of the broad nature of the topic.

Authors reviewed all identified literature, removed duplicate citations, applied inclusion criteria, and assigned each source a level of evidence using criteria of the Strength of Recommendation Taxonomy.^{14,15} The Level of Evidence from 1 to 3 for each source was based on study design and methodology, ranging from good to limited. The team then formulated and ranked each recommendation A, B, or C based on quality, quantity, and consistency of the assembled evidence according to the Strength of Recommendation Taxonomy criteria. Each recommendation was based on a framework of patient-oriented outcomes measuring changes in morbidity and mortality. The draft was then peer reviewed by members of the ABM Protocol Committee and the ABM Board of Directors and other experts within the organization. After a series of appropriate revisions, the protocol was approved by the Protocol Committee and the ABM Board prior to publication. The protocol was first written and published in English in the journal *Breastfeeding Medicine*.

Key Information

Evidence from multiple systematic reviews demonstrates that women who receive prenatal education about breastfeeding have higher rates of breastfeeding initiation, breastfeed for longer, and are more likely to exclusively breastfeed, particularly when prenatal education is provided in conjunction with postpartum support.¹⁶⁻¹⁹

Prenatal education should include the rationale for breastfeeding and education about how to breastfeed. Women who are taught that breastfeeding provides better health outcomes to women and infants are more likely to breastfeed.¹⁹ Eliciting a relevant history to identify risk factors for breastfeeding challenges (Table 1) and providing appropriate anticipatory guidance can improve breastfeeding outcomes as women prepare for potential difficulties and weigh solutions ahead of birth.²⁰⁻²⁶ If the history or physical exam findings suggest that

TABLE 1. TAKING A COMPLETE PRENATAL BREASTFEEDING HISTORY^{20–23,178}

If the history or physical exam findings suggest that a patient is at high risk for breastfeeding problems, consider a prenatal referral to a breastfeeding medicine specialist.

1. Ask about breastfeeding intent or infant feeding goals.
2. For each previous child, ask about breastfeeding initiation, duration of exclusive breastfeeding, total breastfeeding duration, who provided breastfeeding support, perceived benefits of breastfeeding, and breastfeeding challenges or complications.
3. For patients who did not breastfeed with previous children, consider asking about the perceived advantages and disadvantages of commercial milk formula feeding.
4. Clinicians should identify any medical history that may make breastfeeding especially beneficial for this child and/or patient.⁸⁶
5. Clinicians should inquire about any previous breast surgeries (reduction, implants), maternal or infant medical conditions, or maternal medications that may present additional breastfeeding challenges.
6. Perform a physical exam to evaluate for flat or inverted nipples and glandular hypoplasia and other features as suggested by history.

a patient is at high risk for breastfeeding problems, consider a prenatal referral to a Breastfeeding Medicine specialist.

Given limited time with patients in the office setting, high-yield topics shown to have the greatest impact on breastfeeding outcomes include the benefits of breastfeeding and health outcomes of different methods, intensities, and durations of breastfeeding as well as practices to support early initiation of breastfeeding.^{1,19} Education should include the impact of breastfeeding versus not breastfeeding, the basics of breastfeeding (e.g., physiology, positioning), and the risks of unnecessary supplementation.^{7,19,24,27–37} Anticipatory guidance on hospital practices to maximize breastfeeding success such as immediate and continued skin-to-skin care, rooming in, and avoiding pacifiers should be reviewed, and parents should be empowered to advocate for these practices if not the standard of care at their birthing facility.^{26,38,39} Other high-yield topics are included in Table 2 from the Baby-Friendly Hospital Initiative Implementation Guidance, revised in 2018.¹ UNICEF has also published Key Messages for community delivery of counseling on infant and young child feeding, which have been adapted successfully for local implementation.^{40–42} In settings that use electronic health records, embedded

prompts can improve consistency of provider support and education statements.^{43,44}

Telehealth communications, where available, can also be used in the prenatal setting (and beyond) to provide breastfeeding education. Specific telehealth interventions include: smart message service (SMS)/text communication, electronic health applications, web-based monitoring, videoconferencing, voice calls, mobile applications, and internet-based assistive programs.^{45–53} SMS communication may be particularly useful to reach patients who may lack other resources but have access to a smartphone.^{45,53}

Prenatal breastfeeding education is most effective if it promotes self-efficacy and is structured.^{54–65} Breastfeeding self-efficacy is defined as confidence in one’s ability to breastfeed and meet one’s own goals and has been positively correlated with breastfeeding duration and exclusivity in various populations.⁵⁸ Physical written materials,^{44,46} workbook-based programs,^{28,44} and mobile/online applications^{51,66} are effective interventions. International guidance such as UNICEF’s Infant and Young Child Feeding Counseling Package⁴¹ can be adapted for country- and community-specific programs.⁴⁰

TABLE 2. WHO/UNICEF PRENATAL CONVERSATION TOPICS

WHO/UNICEF required prenatal conversation topics include at a minimum:

Breastfeeding

- The importance of breastfeeding including a discussion on the importance of direct breastfeeding, as needed
- Global recommendations for breastfeeding including:
 - Exclusive breastfeeding for the first 6 months
 - The risks of giving formula or other breast milk substitutes
 - Breastfeeding continues to be important after 6 months when other foods are given
- The basics of good positioning and attachment
- Recognition of feeding cues

Birth Practices

- The importance of immediate and sustained skin-to-skin contact
- The importance of early initiation of breastfeeding
- The importance of rooming in

World Health Organization, United Nations Children’s Fund. Implementation Guidance: Protecting, Promoting and Supporting Breastfeeding in Facilities Providing Maternity and Newborn Services: The Revised Baby-Friendly Hospital Initiative. World Health Organization: Geneva; 2018.

UNICEF, United Nations Children’s Fund; WHO, World Health Organization.

Prenatal care providers often lack training and confidence in providing breastfeeding education, particularly in prenatal interventions to support secretory activation (lactogenesis stage II) and management of delayed secretory activation.^{67,68} International organizations including WHO/UNICEF and ABM have formal breastfeeding curricula and targeted clinical guidelines for health care providers, much of which is available online and at no cost.^{69–71} In addition, health care workers may consider incorporating cognitive-behavioral therapy, social-cognitive theory-based models, and competence theory into prenatal breastfeeding counseling, which have shown success in improving breastfeeding outcomes.^{17,37,40,67,68,72–78} Mobile-based applications have shown utility in supporting community-health worker training and interventions.^{40,66} Health care institutions should facilitate and support employee breastfeeding, as health care workers who have had positive personal breastfeeding experiences may provide better support for patients.^{79,80}

Although less available in many settings, involving people with lactation training (e.g., doulas, lactation consultants) in the prenatal setting has been shown to have a positive effect on breastfeeding initiation and exclusivity.^{43,81–86} Peer counseling during the prenatal period has also been shown to improve breastfeeding outcomes.^{44,81,87–89} Prenatal and postnatal home visit programs are effective in promoting breastfeeding initiation and duration.^{29,88,90–92} Group prenatal care has demonstrated positive influence on rates of breastfeeding exclusivity and duration in many settings, as mothers gain a built-in support network of peers before and after giving birth.^{28,93–97} Peers, doulas, and community health workers are particularly important in low- and middle-income countries¹⁸ and in community-based settings for improving breastfeeding outcomes.^{84,88,98–100}

Evidence shows that involving fathers/partners in prenatal care and targeting breastfeeding education toward them have a positive effect on breastfeeding outcomes.^{45,101–108} In some cultures and situations, enlisting the cooperation of a pivotal family member, other than the father or partner, may greatly assist in the promotion of breastfeeding.^{101,109–112} For example, adolescents may benefit from the maternal grandmother being included in promotional programs.^{113,114} Asking the patient who is most influential with respect to infant feeding preference and continuing to inquire about the family and community structure of patients throughout prenatal care can be an effective means of ensuring support.¹¹⁵

Community context

It is important to recognize that breastfeeding occurs within a larger sociocultural context. In addition to partners and families, broader population level support influences parental feeding decisions.^{7,53,101,114–116} Providers should understand the specific personal, financial, and sociocultural obstacles to breastfeeding. Community-level support of breastfeeding¹¹⁷ and enforcing the International Code of Marketing of Breast-Milk Substitutes in all settings including outpatient prenatal clinics are important to enable mothers to breastfeed successfully.¹¹⁸ Educational and promotional programs that target family and support networks are necessary, in addition to programs that target only mothers.¹¹⁵ Integrated health services such as the Baby-

Friendly Community Initiative have been shown to improve breastfeeding outcomes.^{88,119}

Cultural context

Cultural humility is essential to understand traditions and taboos associated with breastfeeding, adapt to cultural practices that facilitate optimal breastfeeding, and sensitively educate about traditions that may be detrimental to breastfeeding.^{84,120–122} It is important to ensure that parents across cultures understand the importance of exclusive breastfeeding to their children's growth and development¹²³ and for providers to consider acculturation of immigrant populations with respect to a family's current feeding choices.¹²⁰ Providers should be aware of the role of the physician's own personal cultural attitudes when interacting with patients.⁸⁶

Patients often understand information best in their primary language, so providing information and instruction in a parent's preferred language¹²⁴ and at low literacy levels^{112,125,126} should be prioritized.

Health disparities should be examined when considering prenatal breastfeeding interventions. Although some prenatal interventions are effective across various sociodemographic tiers, specific interventions are emerging that show increased efficacy among underrepresented and low-income groups.^{83,127} Some examples include motivational interviewing,¹²⁸ income supplementation,¹²⁹ and extended governmental programs that may support nutrition, health, and breastfeeding.^{130,131} Furthermore, efforts to involve community members and providers of similar backgrounds to patients may help support breastfeeding. For example, in multiple studies, Black women in the United States have reported that they feel they would have been better served by a Black health care worker providing breastfeeding support or care, and the importance of a trusting relationship with those giving breastfeeding support.^{132–134}

Populations at risk for poor breastfeeding outcomes or with specific counseling needs

Maternal conditions or known fetal conditions that may impact breastfeeding should be identified and addressed during the prenatal period. For instance, mothers at high risk of preterm delivery or with known fetal anomalies should receive counseling specific to these situations. Mothers with HIV receiving anti-retroviral therapy should be supported in breastfeeding and may receive additional counseling about methods for reducing the risk of mother-to-child transmission.^{135,136} In addition, identifying maternal conditions where breastfeeding *may be contraindicated* depending on national recommendations, such as HIV not on antiretroviral therapy or with a detectable viral load (depending on national recommendations), T cell lymphotropic virus type I or type II, untreated brucellosis, or Ebola virus, is an important part of prenatal care.^{135,137} Some people with certain health conditions are particularly at risk for poor breastfeeding outcomes, as outlined next.

- a. Weight: Individuals with obesity are less likely to meet their breastfeeding goals. Mothers with obesity tend to be less exposed to pro-breastfeeding practices and receive less breastfeeding education, potentially because of provider biases.¹³⁸ Obesity is associated with lower rates of breastfeeding initiation and shorter duration of breastfeeding.^{139,140} There is emerging evidence that

metabolic syndrome, often associated with obesity, may result in delayed secretory activation and low milk production.¹⁴¹ A Cochrane review in 2019 concluded that there is insufficient evidence that any social, educational, or physical supports are beneficial in the initiation or continuation of breastfeeding in women with obesity.¹⁴²

Low maternal body mass index is also associated with shorter duration of breastfeeding.¹³⁹ Health care providers should be particularly aware of their own biases regarding weight when caring for people with obesity.

- b. **Diabetes:** Perinatal complications are more common for women with preexisting diabetes or gestational diabetes, and infants of mothers with diabetes are at risk for hypoglycemia and early formula supplementation.¹⁴³ Antenatal milk expression is one option to potentially decrease the need for postpartum supplementation for hypoglycemia and was shown to not be associated with harm after 36 weeks gestational age for women with diabetes in pregnancy at low risk of complications.¹⁴⁴ Although this practice is commonly recommended and practiced, there is little evidence of the impact on breastfeeding outcomes at this time.^{145,146}
- c. **Mental health:** Providers should screen women during pregnancy for preexisting or new mental health conditions including depression, anxiety, and post-traumatic stress disorder.¹⁴⁷⁻¹⁵⁰ In addition, stressful life events and interpersonal violence may be risk factors for mood disorders and poor breastfeeding outcomes and may affect the mother's safety.¹⁵¹⁻¹⁵⁷ Combining breastfeeding and mental health interventions may be beneficial to those with peripartum mood disorders.⁶⁴ Psychosocial education, training on breastfeeding self-efficacy, and psychotherapy may increase odds of breastfeeding and decrease breast milk insufficiency.¹⁵⁸
- d. **Substance use disorders:** Breastfeeding is recommended for most women with substance use disorders (SUDs) in treatment, and most SUD medication treatments are compatible with breastfeeding.¹³ Alcohol use disorder is the most common SUD among pregnant women.^{159,160} Women should be offered treatment, supportive counseling on breastfeeding, and education on the health risks to infants of alcohol exposure in the breastmilk. Tobacco is also among the most common substances used in pregnancy and lactation, and women with tobacco use have been found to have lower rates of breastfeeding and may have low milk production, though the mechanism of this is not fully understood.^{161,162} They should be encouraged to stop/reduce tobacco use and reduce smoke exposure to their infant and counseled that breastfeeding improves infant health even if the mother continues tobacco use postpartum. Despite strong evidence to support breastfeeding among women on medication-assisted treatment (MAT) for opioid use disorder, breastfeeding rates remain low in this population.¹⁶³⁻¹⁶⁵ Pregnant patients on MAT should be encouraged to breastfeed. Breastfed infants with prenatal opioid exposure require less pharmacologic treatment for neonatal opioid withdrawal syndrome and have shorter length of hospitalization than those fed only commercial milk formula.^{166,167} Prenatal education and consistent, evidence-based

policies within health care institutions may help encourage more women with SUDs on MAT to initiate breastfeeding.^{168,169} For more information on breastfeeding and SUDs, see ABM Protocol #21 (Breastfeeding and Substance Use or Substance Use Disorder).¹³

- e. **Anatomic considerations:** Certain anatomic variants such as tubular, hypoplastic or markedly asymmetric breasts, flat or inverted nipples, or a history of certain types of breast surgeries can be a risk for breastfeeding challenges (Table 1).^{20,22,23,25} Avoid non-evidence-based and potentially harmful interventions, such as nipple preparation, during the prenatal period.

Recommendations

For each recommendation, the quality of evidence (Levels of Evidence 1, 2, and 3) and the Strength of Recommendation (A, B, and C) are noted as defined by the Strength of Recommendation Taxonomy criteria.

1. Intentionally discuss breastfeeding at each prenatal visit, and include the benefits, physiology, and process of breastfeeding (including techniques of latching and positioning), as well as the risks of supplementation.

Levels of Evidence: 2–3. Strength of Recommendation: B.

 - a. Acknowledge that breastfeeding results in superior health outcomes for women and their infants as compared with health outcomes experienced by dyads using commercial milk formula.

Level of Evidence: 1. Strength of Recommendation: A.
 - b. Elicit a detailed breastfeeding history identifying medical, anatomic, and other risk factors for breastfeeding challenges with appropriate referral to a lactation specialist or a clinician who specializes in breastfeeding medicine if identified (see Table 1).

Levels of Evidence: 1–3. Strength of Recommendation: B.
 - c. Focus on high-yield prenatal breastfeeding topics, including the impact of breastfeeding versus not breastfeeding, the basics of breastfeeding (e.g., physiology, positioning), what to expect of hospital-based and immediate postpartum breastfeeding support (i.e., Baby-Friendly Ten Steps), and the risks of unnecessary supplementation (Table 2).

Level of Evidence: 3. Strength of Recommendation: C.
 - d. Use electronic medical record prompts, if available, to improve consistency of provider support and education statements.

Levels of Evidence: 1–2. Strength of Recommendation: A.
2. Breastfeeding education in the prenatal setting should be structured and provided in formats best suited to the population served.

Level of Evidence: 2. Strength of Recommendation: B.

 - a. Employ education that promotes self-efficacy.

Levels of Evidence: 1–3. Strength of Recommendation: A.

- b. Use structured, written breastfeeding materials. Effective interventions include various modes of delivery such as paper, workbooks, online/apps, and videos. Levels of Evidence: 1–3. Strength of Recommendation: B.
 - c. Include telecommunication (i.e., telehealth, mobile apps) in the prenatal care model given the positive association with improved breastfeeding outcomes. Level of Evidence: 1. Strength of Recommendation: B.
3. Enhance breastfeeding knowledge, skills, and attitudes for people who provide prenatal care. Levels of Evidence: 1–3. Strength of Recommendation: B.
 - a. Focus on latch assessment, prenatal interventions to support secretory activation (lactogenesis stage II), and management of delayed secretory activation as providers report lowest confidence in these areas. Levels of Evidence: 2–3. Strength of Recommendation: B.
 - b. Consider training in cognitive-behavioral therapy, social-cognitive theory-based models, and competence theory, which have shown success in improving breastfeeding outcomes. Levels of Evidence: 1–2. Strength of Recommendation: A.
 - c. Consider use of mobile-based applications for community health-worker training and interventions. Levels of Evidence: 1–2. Strength of Recommendation: B.
 4. Offer opportunities for peer lactation education and counseling during the prenatal period. Levels of Evidence: 1–2. Strength of Recommendation: A.
 - a. Encourage use of a prenatal and postnatal home visiting program that includes breastfeeding. Levels of Evidence: 1–2. Strength of Recommendation: A.
 - b. Encourage use of group prenatal care. Levels of Evidence: 1–2. Strength of Recommendation: B.
 - c. Encourage use of layperson participation and community health workers. Level of Evidence: 1. Strength of Recommendation: A.
 - d. For historically oppressed and low-income populations in both high- and low- and middle-income countries, consider use of peers, group interventions, and motivational interviewing. Promote and support government policies that assist these families such as food or cash benefits. Levels of Evidence: 1–2. Strength of Recommendation: B.
 5. Involve fathers/partners and other family members in prenatal care and target breastfeeding education towards them. Level of Evidence: 2. Strength of Recommendation: B.
 6. Integrate health care workers skilled in breastfeeding and lactation consultants, where available, into prenatal care. Level of Evidence: 1. Strength of Recommendation: A.
 7. Provide culturally sensitive care and consider cultural differences in discussing feeding practices. Level of Evidence: 2. Strength of Recommendation: B.
 - a. Provide written materials in parent's primary languages when possible and appropriate. Level of Evidence: 2. Strength of Recommendation: B.
 - b. Provide all written materials at low literacy reading levels. Levels of Evidence: 2–3. Strength of Recommendation: B.
 8. Advocate for and use community-level support programs that support families, such as the Baby-Friendly Community Initiative. Levels of Evidence 1–3. Strength of Recommendation B.
 9. Provide anticipatory guidance on interventions to support milk production and breastfeeding duration to women with obesity. Level of Evidence: 2. Strength of Recommendation: B.
 10. Provide anticipatory guidance and support on breastfeeding for women with diabetes. At this time there is no sufficient evidence of the impact of antenatal milk expression on breastfeeding outcomes to specifically recommend it. Level of Evidence: 1. Strength of Recommendation: C.
 11. Screen patients for mood disorders and stressful life events including interpersonal violence. Level of Evidence: 2. Strength of Recommendation: B.
 12. Provide anticipatory guidance and support on breastfeeding to women with SUDs. Level of Evidence: 2. Strength of Recommendation: B.

Summary

The prenatal period offers a historically undervalued but critical time to positively impact infant feeding outcomes and promote breastfeeding. Prenatal education should always be provided in consideration of culture, identity, family, and social context. We recommend, based on our evidence review, that clinicians providing prenatal care intentionally discuss breastfeeding with patients and make structured breastfeeding education available, as well as offer access to peer counseling and skilled lactation services whenever possible. We also recommend involvement of fathers/partners and use of telecommunication or telehealth in prenatal breastfeeding education. We furthermore recommend that health care organizations enhance breastfeeding training for prenatal care health care workers, as evidence demonstrates that staff education can positively impact breastfeeding outcomes.

Areas for Future Research

Although there has been exponential growth in literature on this topic over the last 8 years, there remains a need for more or better quality research in the following areas:

1. Cost-effectiveness studies are needed to determine which of the aforementioned interventions should receive the greatest emphasis in routine clinical practice. This includes studies to evaluate the cost-effectiveness of making an outpatient practice breastfeeding friendly.
2. There is a need for higher-quality studies focused on the efficacy of breastfeeding interventions for

minoritized and marginalized populations.¹⁷⁰ Current literature suggests that community peer support, self-help groups, education to improve breastfeeding self-efficacy, pre/postnatal programs with both professional and layperson education, and support programs all improve breastfeeding outcomes.^{18,100,128,171,172} However, further high-quality research would benefit communities as they seek to determine which interventions are best to implement in their region.

3. Although e-learning activities are widely accepted and emerging as a useful tool in breastfeeding education,^{47,48,50,51,173} more studies are needed to evaluate if e-learning, perhaps in conjunction with other prenatal interventions, demonstrates improvement in breastfeeding outcomes.
4. Although many studies have been published on prenatal interventions, translational research investigating implementation and advocacy among health care organizations, community organizations, and political systems should be undertaken.
5. Future studies should examine factors that contribute to differences in breastfeeding outcomes by type of prenatal care provider.
6. Although antenatal breast milk expression has shown favorable trends with respect to improving lactation outcomes,^{174–176} more rigorous randomized controlled trials designed to measure differences in breastfeeding outcomes could better inform the use of antenatal breast milk expression.
7. Additional research evaluating the effect of medical comorbidities and pregnancy risks on breast milk production and breastfeeding outcomes and how best to provide anticipatory guidance and education is needed.
8. The need persists to educate gender-diverse and adopting families about infant feeding options, including induced lactation and co-lactation.¹⁷⁷
9. Although discussion of breastfeeding is recommended as early as possible in pregnancy, further research is needed to determine if there is a benefit to addressing breastfeeding education for school-aged children and during the preconception period.
10. More research is needed on support for historically oppressed and low-income mothers in order to support them to breastfeed at higher rates.

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Authors' Contributions

The authors have all contributed to this document.

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ABM protocols expire 5 years from the date of publication. Content of this protocol is up to date at the time of publication. Evidence-based revisions are made within 5 years or sooner if there are significant changes in the evidence.

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