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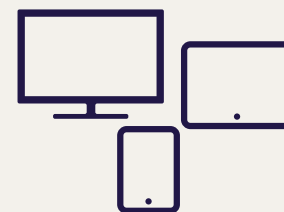
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Breastfeeding in the United States

Strategies to Support Families and Achieve National Goals

Ifeyinwa Asiodu, Julie Caswell, and
Meredith Young, *Editors*

Committee on Understanding Breastfeeding
Promotion, Initiation and Support
Across the United States: An Analysis

Board on Children, Youth, and Families

Board on Behavioral, Cognitive, and Sensory
Sciences

Division of Behavioral and Social
Sciences and Education

Consensus Study Report
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This Consensus Study Report was reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise. The purpose of this independent review is to provide candid and critical comments that will assist the National Academies of Sciences, Engineering, and Medicine in making each published report as sound as possible and to ensure that it meets the institutional standards for quality, objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process.

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Acronyms and Abbreviations

AAP	American Academy of Pediatrics
ABM	Academy of Breastfeeding Medicine
ACA	Affordable Care Act
ACEN	Accreditation Commission for Education in Nursing
ACEND	Accreditation Council for Education in Nutrition and Dietetics
ACEs	Adverse childhood experiences
ACGME	Accreditation Council for Graduate Medical Education
ACME	Accreditation Commission for Midwifery Education
ACOG	American College of Obstetricians and Gynecologists
AHRQ	Agency for Healthcare Research and Quality
AI/AN	American Indian/Alaska Native
AMCB	American Midwifery Certification Board
ARC-PA	Accreditation Review Commission on Education for the Physician Assistant
AWHONN	Association of Women's Health, Obstetric and Neonatal Nurses
BBFI	Becoming Breastfeeding Friendly Index
BFFCD	Breastfeeding Family Friendly Community Designation
BFHI	Baby Friendly Hospital Initiative
BFPC	Breastfeeding peer counseling or counselors
BLS	Bureau of Labor Statistics
BMI	Body Mass Index
CAAHEP	Commission on Accreditation of Allied Health Education Programs
CACFP	Child and Adult Care Food Program
CAPTE	Commission on Accreditation in Physical Therapy Education
CBO	Congressional Budget Office
CDC	Centers for Disease Control and Prevention
CFR	Code of Federal Regulations
CHAMPS	Communities and Hospitals Advancing Maternity Practices
CHAMPVA	Civilian Health and Medical Program of the Department of Veterans Affairs
CHIP	Children's Health Insurance Program
CHWs	Community health workers
CLC	Certified Lactation Counselor
CLE	Certified Lactation Educator
CMF	Commercial milk formula
CMS	Centers for Medicare and Medicaid Services
CNM	Certified Nurse Midwife
CoC	Chamber of Commerce
DFEH	Department of Fair Employment and Housing
DGA	Dietary Guidelines for Americans
DLSE	Division of Labor Standards Enforcement
DME	Durable medical equipment

DOD	Department of Defense
DoL	Department of Labor
DONA	Doulas of North America
EBF	Exclusive breastfeeding
EEOC	Equal Employment Opportunity Commission
EHR	Electronic health record
EITC	Earned Income Tax Credit
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FFDCA	Federal Food, Drug, and Cosmetic Act
FLSA	Fair Labor Standards Act
FMLA	Family and Medical Leave Act
FNS	Food and Nutrition Service
FPL	Federal Poverty Level
FSMB	Federation of State Medical Boards
FTC	Federal Trade Commission
FTE	Full-time equivalent
FY	Fiscal year
GDP	Gross domestic product
HBCUs	Historically Black Colleges and Universities
HEDIS	Healthcare Effectiveness Data and Information Set
HIC	High-income countries
HP2030	Healthy People 2030
HRSA	Health Resources and Services Administration
IBCLC	International Board-Certified Lactation Consultant
IBLCE	International Board of Lactation Consultant Examiners
IHI	Institute for Healthcare Improvement
IHS	Indian Health Service
ILO	International Labor Organization
IOM	Institute of Medicine
IUFD	Intrauterine fetal death
IYCF-E	Infant and Young Child Feeding in Emergencies
LCSW	Licensed clinical social worker
LMIC	Low- and middle-income countries
LOS	Late onset sepsis
LP2	Lactation pathway 2
LPN	Licensed Practical Nurse
mPINC	Maternity Practices in Infant Nutrition and Care

NABBLM	North American Board of Breastfeeding and Lactation Medicine
NACCHO	National Association of County and City Health Officials
NASEM	National Academies of Sciences, Engineering, and Medicine
NCQA	National Committee for Quality Assurance
NCSBN	National Council of State Boards of Nursing
NCSL	National Conference of State Legislatures
NEC	Necrotizing enterocolitis
NICHD	National Institute of Child Health and Human Development
NICU	Neonatal Intensive Care Unit
NIH	National Institutes of Health
NIS	National Immunization Survey
NIS-Child	National Immunization Survey-Child
NVSS	National Vital Statistics System
OASH	Office of the Assistant Secretary for Health
OECD	Organisation for Economic Co-operation and Development
PC-05	Perinatal Care Core Measure 05
PCP	Primary care provider or physician
PDA	Pregnancy Discrimination Act
PDHM	Pasteurized donor human milk
PFL	Paid family leave
PFML	Paid family and medical leave
PPACA	Patient Protection and Affordable Care Act
PPH	Postpartum hemorrhage
PRAMS	Pregnancy Risk Assessment Monitoring System
PRGLAC	Pregnant Women and Lactating Women
PSE	Public Health Policy, Systems, and Environmental Change
PUMP	Providing Urgent Maternal Protections
PWFA	Pregnant Workers Fairness Act
QI	Quality improvement
RCT	Randomized controlled trial
RD	Registered Dietitian
RDN	Registered Dietitian Nutritionist
RN	Registered Nurse
ROI	Return on investment
ROP	Retinopathy of prematurity
RWJF	Robert Wood Johnson Foundation
SGCTA	Surgeon General's Call to Action
SIDs	Sudden infant death syndrome
SLP	Speech-Language Pathologist
SMM	Severe maternal morbidity
SNAP	Supplemental Nutritional Assistance Program

TANF	Temporary Assistance for Needy Families
TDI	Temporary Disability Insurance
The Code	The International Code of Marketing of Breastmilk Substitutes
TJC	The Joint Commission
TRICARE	Treatment, Resources, and Insurance for Care for Active Duty and Retired Military Personnel
TSA	Transportation Security Administration
UNICEF	United Nations Children's Fund
USBC	United States Breastfeeding Committee
USDA	United States Department of Agriculture
USLCA	United States Lactation Consultant Association
USMLE	United States Medical Licensing Examination
VA	Veterans Affairs
VLBW	Very low birth weight
WHA	World Health Assembly
WHD	Wage and Hour Division
WHO	World Health Organization
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children
WPSI	Women's Preventive Services Initiative

Summary¹

In the 2023 Consolidated Appropriations Act, Congress allocated funding for the Department of Health and Human Service’s Office on Women’s Health to contract with the National Academies of Sciences, Engineering, and Medicine to conduct a consensus study on policies, programs, and investments to better understand the landscape of breastfeeding promotion, initiation, and support across the United States; to provide an evidence-based analysis of the macroeconomic, social, and health costs and benefits of the current U.S. breastfeeding rates and goals; and to explore what is known about inequalities in breastfeeding rates and reducing racial, geographic, and income-related breastfeeding variances.

The committee’s statement of task is shown below (Box S-1). To address the full scope of the study, the National Academies convened a committee with expertise spanning lactation and breastfeeding promotion and support, public health, public policy, nursing, nutrition, obstetrics and gynecology, pediatrics, economics, social marketing and public information campaigns related to nutrition, and WIC² and other public health programs.

BOX S-1 Statement of Task

The National Academies of Sciences, Engineering, and Medicine (NASEM) will convene an ad hoc committee of experts to leverage available data and literature to conduct a consensus study on policies, programs, and investments to better understand the landscape of breastfeeding promotion, initiation, and support across the United States. The study will provide an evidence-based analysis of the macroeconomic, social, and health costs and benefits of the United States’ current breastfeeding rates and goals. The study will build on what is known about variances in breastfeeding rates and reducing differences in initiation and continuation. The committee will identify existing gaps in knowledge, areas for needed research, and will discuss challenges in data collection to address said gaps.

Based on available evidence, the committee will address the following issues and offer conclusions and recommendations:

1. Best practices for clinicians, healthcare systems, insurers, and employers to encourage breastfeeding by new mothers and to support mothers who are currently breastfeeding, including mothers from populations and those experiencing poverty
2. Macroeconomic, health, and social costs of current U.S. breastfeeding rates
3. Funding mechanisms, state and federal policies, interventions, and systemic, cross-sector, or field innovations that can support exclusive breastfeeding through the first 6 months of life

¹ This summary does not include references. Citations for findings presented in the summary appear in the subsequent chapters of the report.

² WIC stands for the Special Supplemental Nutrition Program for Women, Infants, and Children.

4. How insurers implement comprehensive lactation services, set standards to determine reimbursement rates for breastfeeding supplies and services, and provide coverage to help women breastfeed
5. Contributing factors that impact breastfeeding rates and access to postpartum maternal care and supportive services (e.g., lactation consultant, doula support, registered dietitians)
6. Leverage of available evidence to meet the Healthy People Maternal, Infant, and Child Health (MICH) breastfeeding goals by 2030.

NOTE: The project statement of task was revised in April 2024 and June 2025 in response to congressional language and sponsor request.

Breastfeeding and human milk feeding are the physiological norm for humans and the reference standard for infant feeding and nutrition. The U.S. Surgeon General, as well as prominent organizations of health professionals, have concluded that the short- and long-term health and psychosocial benefits associated with breastfeeding make it a public health imperative in the United States. These organizations, along with scientific experts, have determined that for almost all infants, breastfeeding remains the best source of early nutrition and immunological protection, reduces the odds of infant deaths, and is associated with lifesaving protection for preterm infants at risk of developing necrotizing enterocolitis.³ For example, infants who are breastfed “more” versus “less” may have a reduced risk of developing noncommunicable diseases such as asthma, otitis media, obesity in childhood, and childhood leukemia. In addition, a protective association of breastfeeding has been found for infant mortality, including sudden infant death, rapid weight gain and growth, systolic blood pressure, severe respiratory and gastrointestinal infections in younger children, allergic rhinitis, malocclusion, inflammatory bowel disease, and type 1 diabetes. For mothers, health benefits associated with breastfeeding include a reduced risk of developing certain chronic diseases such as breast and ovarian cancer, type 2 diabetes, and hypertension, as well as important psychosocial benefits such as opportunities for emotional bonding.

Previous research has identified that the health benefits of breastfeeding for a mother and her infant or child (i.e., “the breastfeeding dyad”) can be sustained across the life course and conferred to society at large by avoiding the negative economic cost consequences of suboptimal⁴ breastfeeding rates. Published models currently estimate the total costs of suboptimal breastfeeding rates in the United States to range from \$17.2 billion to over \$100 billion annually.

CURRENT BREASTFEEDING RATES AND NATIONAL GOALS

In the United States, more than 3.5 million women give birth each year, and approximately 84% initiate breastfeeding. Most mothers want to breastfeed, as evidenced by

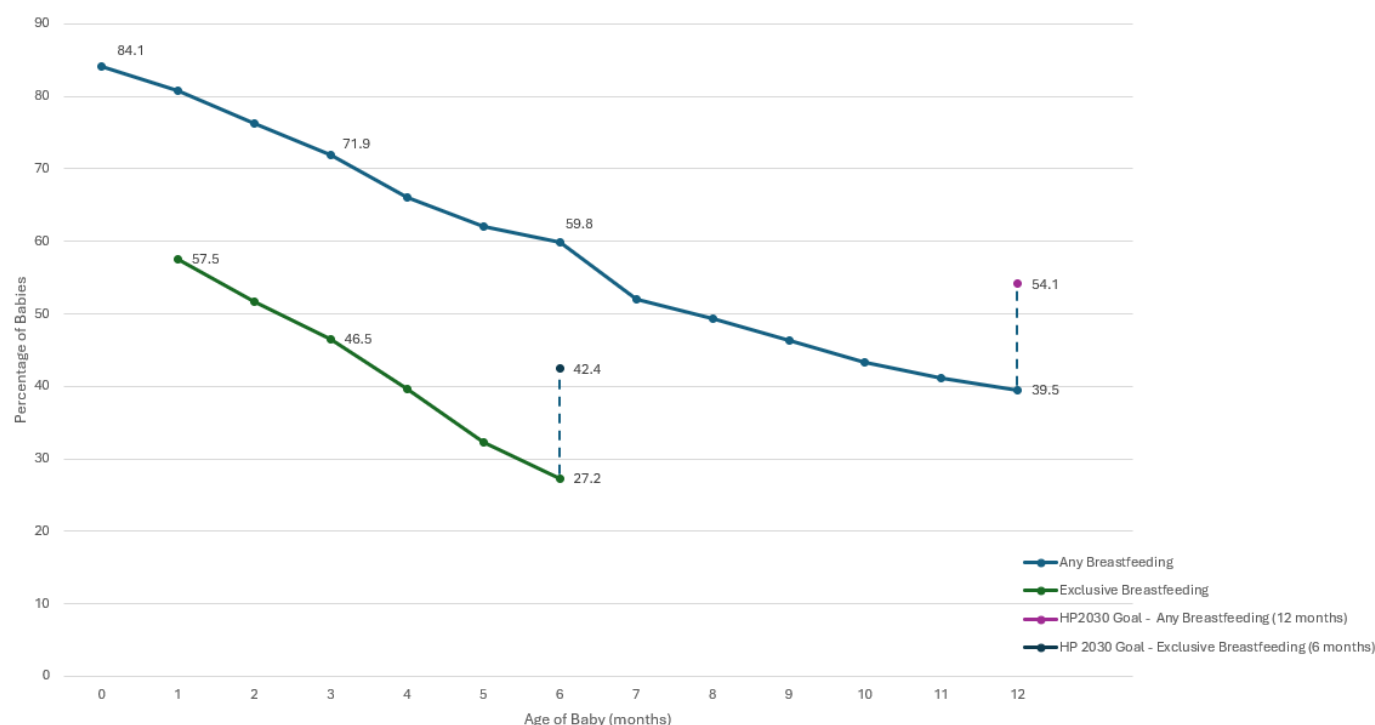
³ Necrotizing enterocolitis is the most common serious gastrointestinal disease affecting newborn infants; it typically occurs in the second or third week of life in premature, formula-fed infants. It is characterized by inflammation or death of the tissue of the intestinal lining.

⁴ To avoid stigmatizing infant feeding decisions or outcomes, this report uses the terms *optimal* and *suboptimal*, when possible, to describe breastfeeding rates and highlight that the locus of control extends beyond the breastfeeding dyad or family unit and is impacted by systems-level factors.

high initiation rates, and intention⁵ to breastfeed is a strong predictor of breastfeeding initiation at birth. However, over half of mothers stop breastfeeding earlier than they desire.

Despite high rates of intention and initiation, many mothers and families are unable to meet their own goals as well as national breastfeeding recommendations⁶ for exclusivity and duration. As shown in Figure S-1, breastfeeding rates decline rapidly between 3- and 12-months postpartum. For example, only 27% of babies receive the U.S. *Dietary Guidelines for Americans* (*DGA*) recommendation for exclusive breastfeeding for the first 6 months of life. The *DGA* further recommends introducing appropriate complementary foods at 6 months and continuing breastfeeding through at least 12 months of age. However, fewer than 40% of infants in the United States are still receiving human milk at 12 months.

In alignment with the *DGA* recommendations, professional and public health organizations recommend that, when possible, breastfeeding be continued with appropriate complementary food for up to 2 years or longer as mutually desired.



⁵ *Breastfeeding intention*, as measured in two dimensions by the Infant Feeding Intention scale, qualitatively measures a mother's intended method of feeding her infant over time (i.e., duration of breastfeeding), as well as the exclusivity of that feeding (e.g., "only breastmilk").

⁶ The committee acknowledges that individual breastfeeding goals may differ from national recommendations and that not all mothers choose to or are able to breastfeed exclusively or for extended durations. Many factors may influence infant feeding goals or decisions. National guidelines exist to improve health outcomes over time, not to impose a singular standard of behavior. The committee emphasizes the importance of supporting all families in meeting their own infant feeding goals with dignity and respect.

FIGURE S-1 Percentage of babies receiving any and exclusive breastmilk during the first 12 months, among children born in 2021.

NOTE: The committee chose to use the term *human milk* throughout the report; however, references to data reflect the terminology used in the original source material. HP2030 = Healthy People 2030.

SOURCE: Adapted from Centers for Disease Control and Prevention, 2022.

As noted in Figure S-1, these national rates fall short of the Healthy People 2030 goals, which aim for 42.4% of infants to be exclusively breastfed through 6 months and 54.1% to receive any breastfeeding through 12 months. The sharp decline in breastfeeding after birth highlights persistent challenges for families in meeting their breastfeeding goals, particularly around exclusivity and duration.

Breastfeeding rates are notably lower among certain groups, including Black women, American Indian/Alaska Native women, women with low socioeconomic status, unmarried women, those living in rural areas, and young mothers. Many of these communities of mothers face disproportionate barriers to breastfeeding, such as the need to return to work early, inflexible job conditions, limited access to breastfeeding support services, and broader cultural and historical challenges. These factors contribute to persistent differences in breastfeeding initiation, duration, and exclusivity.

BREASTFEEDING ACROSS THE LIFE COURSE

The committee developed its report using a life course framework in recognition that various exposures across different stages of life can influence future chronic disease risk and other health outcomes. This framework identifies multiple determinants (i.e., exposures) that may influence individual and community health, including biological and genetic, behavioral, economic, and social factors. In the case of lactation⁷ and breastfeeding, an infant and mother's health trajectories are influenced by exposure to both risk and protective factors, as well as their early life experiences, which can then influence breastfeeding and associated health outcomes at the population level. With this understanding in mind, the committee recognizes that the breastfeeding dyad progresses through a *lactation journey*, from preconception to birth to postpartum, return to school and work, and infancy, amid these intersecting influences. The committee identified critical inflection points across the life course that are specific to human lactation, breastfeeding, and the provision of human milk (Figure S-2).

⁷ *Lactation* is the physiologic production of human milk; *breastfeeding* is a dynamic interaction and behavior between a mother and infant.

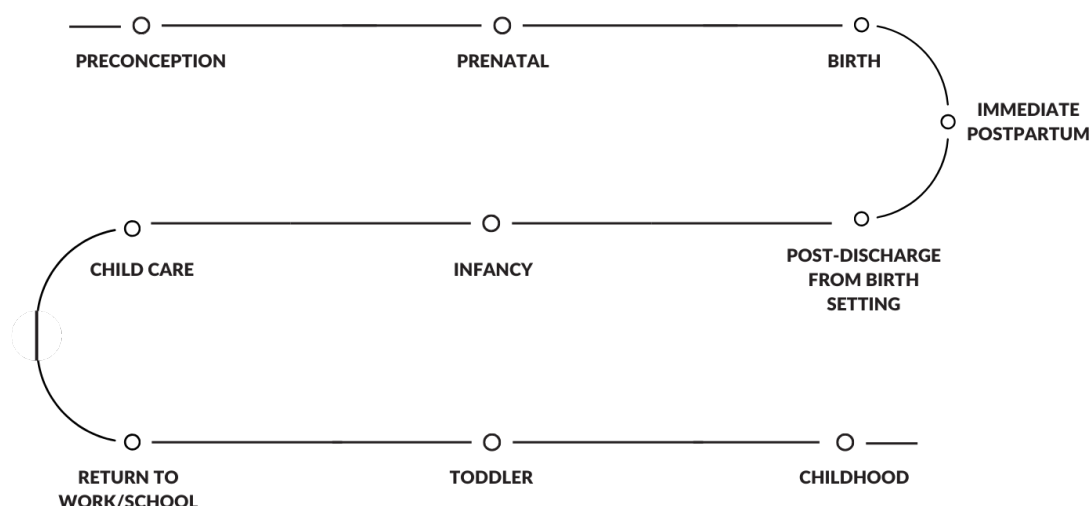


FIGURE S-2 The life course journey of the breastfeeding dyad.

Human lactation is a multifaceted physiological process that is influenced by a range of factors operating across the life course. The capacity to breastfeed and the outcomes associated with breastfeeding are determined by a combination of biological mechanisms and external factors, including clinical practices, health system structures, and broader social and environmental conditions experienced throughout an individual's life. The time points illustrated above each represent critical windows in which the foundations for optimal breastfeeding can be laid.

HISTORY OF BREASTFEEDING SUPPORTS IN THE UNITED STATES

Breastfeeding practices and trends in the United States have undergone significant shifts over time. These changes have been influenced by social, cultural, and economic shifts; the growing influence of medicine; and policy and program interventions (Figure S-3)—influences that led to extremely low rates of breastfeeding by the middle of the 20th century. Additional social, cultural, and economic shifts drove a rebounding of breastfeeding rates in later decades, though variances persist across sociodemographic groups.

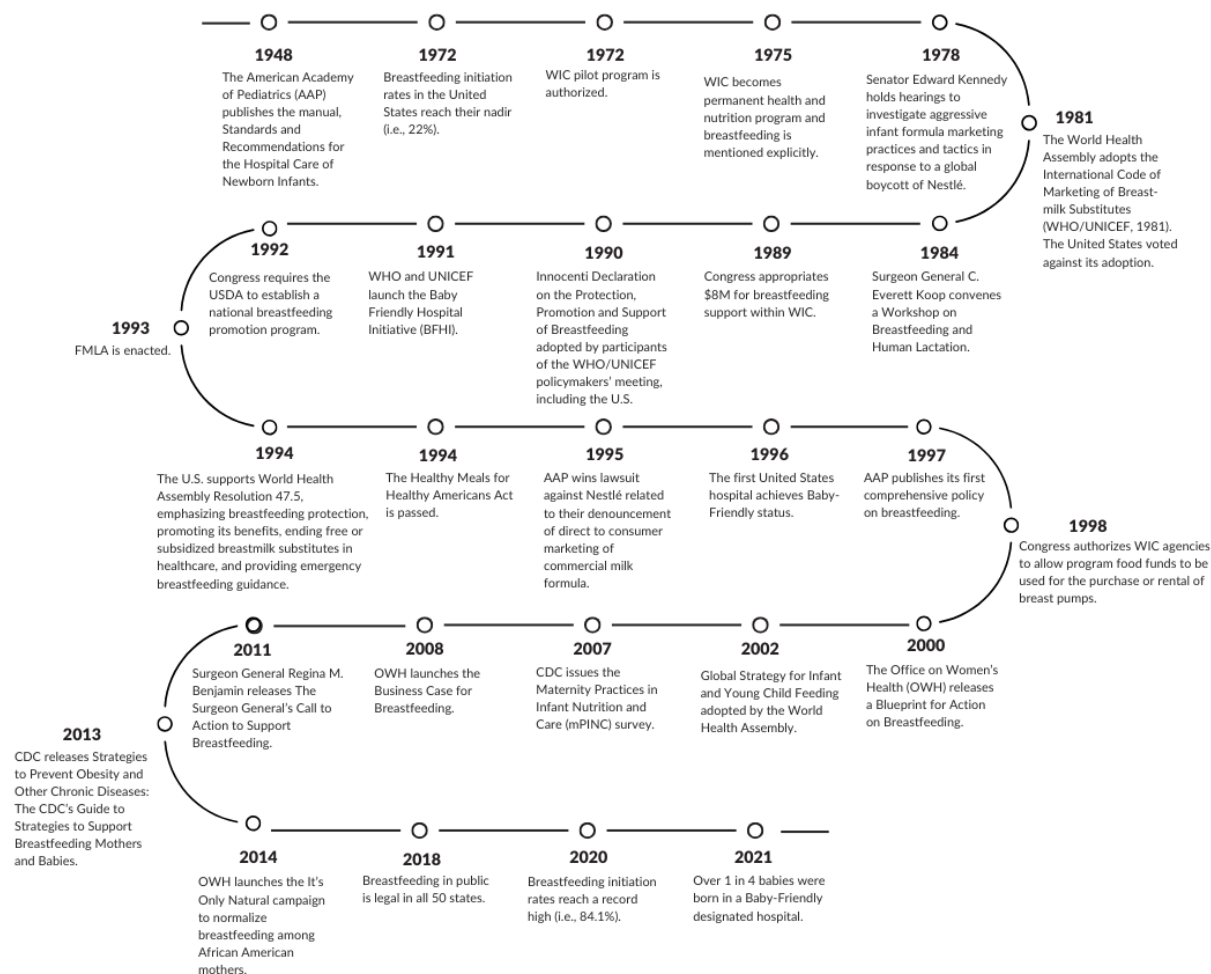


FIGURE S-3 Timeline of key actions and challenges on the road to reverse the decline of breastfeeding in the United States.

NOTES: CDC = U.S. Centers for Disease Control and Prevention; FMLA = Family and Medical Leave Act; USDA = U.S. Department of Agriculture; WHO = World Health Organization; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.

While overall breastfeeding rates in the United States have increased over time, notable differences remain across racial, ethnic, geographic, and socioeconomic groups. These patterns reflect both areas of progress and ongoing challenges influenced by a range of historical, cultural, and systemic factors. Addressing these differences calls for a comprehensive approach across settings.

The report's recommendations explore key actions across settings and topic areas, including community-based settings, public health settings, messaging and the media and marketing environment, health care settings, payment for supplies and services, and workplaces and schools.

THE COMMITTEE’S RECOMMENDATIONS

The means to improve breastfeeding outcomes in the United States, as reflected in the report recommendations below, are multiple and intertwined, and they involve many actors. The committee’s consensus is that central and continuous leadership is necessary to make consistent progress in this area.

In response to its charge and based on the current scientific evidence, the committee presents 16 recommendations to guide the development and implementation of a national breastfeeding strategy across various settings identified in this report. The proposed strategy is organized into five themes:

1. Strengthen national coordination efforts
2. Expand effective community and public health interventions
3. Ensure access to high-quality health care for all
4. Adopt and enact breastfeeding-friendly policies to support paid leave and return to work and school
5. Invest in research capacity and community-driven approaches

The committee’s recommendations are presented by theme here, numbered by their chapter locations, along with corresponding findings and conclusions.

Strengthen National Coordination Efforts

Multiple government agencies have initiatives and programs to support the breastfeeding dyad, but currently no single entity coordinates the patchwork of government programs into a cohesive road map of supports for the breastfeeding dyad to navigate easily. Coordination and funding across the public health system are limited and insufficient to ensure adequate and culturally competent support for all breastfeeding families.

At the time of this writing, HHS has the authority to lead a national breastfeeding strategy and the infrastructure to coordinate efforts among federal, state, tribal, and local partners, as well as the capacity to engage with a diverse range of stakeholders outside of government, including advocacy groups, community organizations, health care systems and providers, employers, and childcare providers. In addition, HHS can allocate federal funding to breastfeeding support programs and establish future breastfeeding-friendly policies and initiatives.

Recommendation 4-1: Congress should charge and fund the U.S. Department of Health and Human Services to lead a national breastfeeding strategy, coordinating with federal, state, tribal, and local partners, as well as community groups, health care systems, insurers, workplaces, and academic institutions to ensure that all mothers and families have access to effective and culturally centered breastfeeding support and resources to meet their breastfeeding goals.

Current public health surveillance of breastfeeding indicators provides complementary perspectives on breastfeeding practices, enabling policymakers to identify trends, variances, and areas for intervention. Collecting and analyzing these data over time is critical for identifying

trends, addressing variances, and improving and understanding the impact of breastfeeding resources and support. However, current efforts do not adequately capture the wide variety of public health supports for breastfeeding, disaggregated across different demographic groups, that could help identify facilitators and barriers to breastfeeding. Real-time monitoring of breastfeeding trends is also limited; additional attention to real-time changes in breastfeeding rates could help inform the allocation of public health resources and services to communities with the greatest need and further understanding of the effectiveness of existing interventions.

Recommendation 4-2: The U.S. Centers for Disease Control and Prevention should continue to coordinate the surveillance of breastfeeding outcomes and expand the current data collection systems to ensure continuity, coordination, and collaboration across federal, state, tribal, territory, and local programs.

Expand Effective Community and Public Health Interventions

The five recommendations in this section identify ways breastfeeding can be protected, promoted, and supported through expanding effective community and public health interventions. These include supporting community-led breastfeeding programs and coalitions; ensuring a full complement of breastfeeding support through the WIC program; incorporating infant and young child feeding in emergencies into emergency preparedness and response guidance and plans; implementing public communication strategies for breastfeeding; and regulating the marketing, including labeling and advertising, of commercial milk formula for infant and young child feeding.

Peer groups and social networks, family members, and friends can influence a mother's decision to breastfeed and her ability to access the support and care she needs to meet her breastfeeding goals. Many promising approaches to supporting breastfeeding are led by community coalitions and peer networks that provide culturally tailored and informed interventions, policy advocacy, and integrated models of care for families. There is strong evidence that peer support (i.e., breastfeeding peer counselors) improves breastfeeding outcomes. This support may be provided by community-led breastfeeding programs or organizations, through existing public health programs (e.g., WIC), or informally in culturally appropriate settings.

Community-led programs and coalitions play a critical role in breastfeeding support, particularly in historically underserved communities. These programs are often developed in response to cultural, social, and structural barriers that may prevent mothers from initiating or sustaining breastfeeding. Many mothers may feel more comfortable receiving breastfeeding guidance from community members who share their background, life experiences, or language. Moreover, community-led initiatives are often embedded within the places where families live, making support accessible and building trust among neighbors.

Recommendation 3-1: Given evidence from burgeoning literature on community-led breastfeeding efforts, Congress; federal, state, and tribal governments; health systems; insurance companies; and philanthropic organizations should fund and

establish cross-sector, coordinated investment strategies for supporting community-led breastfeeding programs and coalitions across all local jurisdictions, states, territories, and tribes.

WIC is widely recognized as a highly successful public health nutrition program. Substantial research demonstrates that WIC breastfeeding support, including peer counseling, can increase breastfeeding rates. However, these activities are not standardized across the United States, are not funded to the level needed, and need to be scaled up to adequately meet the needs of all breastfeeding dyads.

Recommendation 4-3: Congress should ensure that the U.S. Department of Agriculture has adequate funding for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), such that every eligible pregnant and postpartum mother in every state, territory, and tribal organization has access to the full complement of WIC breastfeeding support services. This includes (a) adequate base funding for WIC, (b) exploration of the most appropriate funding model (e.g., discretionary vs. mandatory), and (c) expanded funding of the WIC breastfeeding peer counselor program such that all eligible pregnant and postpartum women can receive peer support to meet their breastfeeding goals.

Several factors influence how infant feeding is addressed in public health emergency preparedness, response, and resilience planning. A key challenge is the neglect of infant and young child feeding in these strategies. Humanitarian emergencies, disasters, and other crises often intersect, compounding their impact. However, effective planning and coordination can safeguard infant and child health during emergencies.

Recommendation 4-4: The Federal Emergency Management Agency, state and local emergency management agencies, and nonprofit organizations such as the Red Cross should incorporate infant and young child feeding in emergencies into their emergency preparedness and response guidance and plans. They should share this guidance with states, tribes, territories, and local health jurisdictions and fund efforts that address infant and young child feeding needs during natural disasters and public health emergencies. These actors should collaborate with breastfeeding support organizations in this process, including state, tribal, and community coalitions, as well as offices providing access to the Special Supplemental Nutrition Program for Women, Infants, and Children.

In almost all of the criteria that predict the likelihood of their success, breastfeeding promotion campaigns in the United States face challenges: (1) failure to employ robust social and behavioral change communication frameworks; (2) limited funding and thus limited message exposure; (3) insufficient access to breastfeeding support in health systems and communities; (4) a policy environment that does not provide adequate financial, material, or structural supports for breastfeeding (family leave protections, universal basic income); and (5) a commercial milk formula⁸ industry that outspends breastfeeding promotion efforts. A national social and behavioral change communications strategy for promoting breastfeeding can help create an information environment to provide evidence-based information and access to support for breastfeeding.

Recommendation 5-1: The U.S. Department of Health and Human Services, in collaboration with organizations engaged in breastfeeding support at the local, state, and tribal levels, should invest in a multifaceted, coordinated national communication strategy on the importance of breastfeeding and the need for comprehensive support for breastfeeding families from all of society across the lactation journey.

- a. **The strategy should consider the full range of audiences: (1) women who may breastfeed; (2) their partners and family members; (3) community members and community organizations; (4) health care providers, health systems, pharmacies, health professional societies, and insurers; (5) business leaders and a wide range of employers, including childcare centers, schools, transportation agencies, the military, and the criminal justice system; (6) public health systems and authorities; and (7) policymakers at the federal, state, tribal, and local levels.**
- b. **The strategy should apply established social and behavior change communication frameworks and ensure that all stages of campaign development involve members of impacted communities, including historically underserved populations.**
- c. **The strategy should also include information about what resources are available and where and how to access them (e.g., in the health care setting, in**

⁸ The term *commercial milk formula* has been used primarily in the global research context as an umbrella term to describe infant formula, toddler milks, and related products. The term emphasizes that these are commercially produced and marketed products. In the United States, the terms *infant formula* and *toddler milk* are most often used to refer to commercially available products.

community and public health settings, payment requirements for services and supplies).

The committee reviewed previously published studies and reviews on the impact of commercial milk formula marketing on breastfeeding-related attitudes, norms, and behaviors. Studies consistently show that exposure to commercial milk formula marketing through diverse media channels, including digital and social media spaces, influences infant feeding perceptions, attitudes, and practices.

Recommendation 5-2: The U.S. Food and Drug Administration and U.S. Federal Trade Commission should coordinate to rigorously regulate the marketing, including labeling and advertising, of commercial milk formula for infant and young child feeding, informed by the principles outlined in *The International Code of Marketing of Breast-Milk Substitutes*, across media, retail, health care, and other settings.

Ensure Access to High-Quality Care for All

Throughout its deliberations, the committee found that the current system of breastfeeding and lactation support is fragmented and uncoordinated, and does not provide standard and optimal care for the breastfeeding dyad. For example, in the health care setting, there is no “medical home” (i.e., single health care setting) for the breastfeeding dyad, which consistently presents challenges in the continuity of maternal and pediatric care and in insurance payment for breastfeeding services and human milk supplies. In addition, the health care system struggles to provide timely delivery and coordination of lactation-related care and resources that are mandated by law, as is the case with insurance payment for lactation support services and medical supplies.

The following recommendations describe the importance of maternity care practices, investment in the lactation support workforce, development of health care performance measures, extension of postpartum Medicaid coverage for low-income women, and comprehensive coverage and payment for breastfeeding services and supplies.

The Baby-Friendly Hospital Initiative (BFHI) is a well-established, evidence-based program designed to improve breastfeeding outcomes. The program, launched by UNICEF and the World Health Organization, aligns maternity and newborn care practices with the Ten Steps to Successful Breastfeeding. Since its inception, the BFHI has demonstrated consistent and substantial benefits for breastfeeding initiation, exclusivity, and duration across a variety of health care settings. In the United States, implementation of the Ten Steps, whether through formal Baby-Friendly designation or through stepwise policy adoption, has been associated with improved outcomes and reductions in breastfeeding disparities, especially when community engagement and culturally responsive practices are centered.

Recommendation 6-1: The U.S. Centers for Medicare & Medicaid Services and The Joint Commission, in collaboration with other hospital accrediting bodies, hospital

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associations, and state health regulators, should ensure that every maternity care facility in the United States implements the UNICEF/World Health Organization’s Baby-Friendly Hospital Initiative’s Ten Steps to Successful Breastfeeding as the standard of care.

Accrediting or regulatory bodies for health professionals, including state licensing boards for nursing, could explore including a minimum set of competencies in human lactation and breastfeeding into their licensing, certification, and accreditation requirements. This could ensure that individuals providing breastfeeding support in health care settings would have a shared, minimum level of training and education.

In addition, a significant portion of the lactation support workforce is employed in community-based or public health settings, such as the WIC program. Thus, federal and state investment in education and training initiatives for registered dietitians, nutritionists or nutrition assistants, providers with the International Board Certified Lactation Consultant® designation (IBCLCs), and breastfeeding peer counselors is critical to ensure that community-level needs are met for primary breastfeeding care. In addition, investment in these initiatives could support data collection on workforce capacity and compensation to ensure that lactation support providers from historically underserved communities are compensated for their work appropriately.

The current lactation support workforce in the health care setting consists of a wide range of providers (e.g., nurses and nurse practitioners, midwives, physicians, advanced practice professionals, IBCLCs, registered dietitians, peer counselors, and doulas). Their education and training differ widely with respect to breastfeeding care and training.

Recommendation 6-2: Accrediting boards and regulatory bodies for health professionals, federal and state agencies, public health organizations, and philanthropic organizations should increase investment in the training and availability of lactation support providers.

- a. Accrediting and regulatory bodies for health professionals and state boards of nursing should include a minimum set of competencies in human lactation and breastfeeding into their licensing, certification, and accreditation requirements.**
- b. Federal agencies, such as the U.S. Health Resources and Services Administration and U.S. Department of Agriculture, in collaboration with state, tribal, and local governments, should work together to provide support for the training and certification of health professionals or lactation support providers to provide breastfeeding support services (e.g., through the**

breastfeeding peer counseling program offered by the Special Supplemental Nutrition Program for Women, Infants, and Children).

- c. Public health organizations and philanthropic organizations should work together to fund initiatives to increase the number of lactation support providers to ensure that their communities' lactation needs are met.**

A Healthcare Effectiveness Data Information Set (HEDIS) is a widely used tool for measuring health care performance used by over 90% of U.S. health plans, covering more than 190 million enrollees. The creation of a HEDIS performance measure for breastfeeding would require creating automated fields in electronic health records to better capture infant feeding practices across time (i.e., in the birth setting and during postpartum and pediatric care). Practices at baseline and after implementing improvement projects could be recorded to assess how well health plans and health care providers protect, support, and promote breastfeeding. In addition, measures that are aligned with the care and support of sick or vulnerable infants could be established to better track breastfeeding outcomes and future investment in inpatient settings.

Recommendation 6-3: The U.S. Centers for Medicare & Medicaid Services should develop and implement a Healthcare Effectiveness Data Information Set performance measure of breastfeeding.

Medicaid expansion has positively influenced breastfeeding rates by increasing access to prenatal education, postpartum lactation support, breast pumps, and maternal health care. The extension of postpartum Medicaid coverage from 60 days to 12 months is particularly promising, as it can help mothers with low incomes sustain breastfeeding beyond the initial few weeks postpartum. By reducing variances in access to critical services, Medicaid expansion and extension efforts not only improve maternal and infant health outcomes but also may promote higher breastfeeding initiation and duration rates among low-income populations.

Recommendation 7-1: The U.S. Centers for Medicare & Medicaid Services should continue to ensure that postpartum Medicaid extension is available to all eligible pregnant and postpartum women up to 12 months after birth, at a minimum; all states should implement this option.

Currently, coverage or payment for breastfeeding care in the United States is complex and often opaque to families needing support. Navigating this complex system can be difficult for a new family, and breastfeeding care is fragmented between parallel systems that provide separate appointments and services to a mother and her infant or child. Health insurance coverage for families is critical, as it ensures that mothers and their children have access to essential medical care, and this coverage before and during pregnancy and postpartum can help prevent birth complications, support breastfeeding, and provide essential newborn care, all of which set a strong foundation for lifelong health. Inconsistencies in insurance coverage can hinder mothers from receiving standard, high-quality, and timely health care, which can affect

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breastfeeding initiation and duration rates. Clear guidelines, uniform enforcement of coverage requirements, and communication between health care providers, insurers, and members of the public could all help to address these inconsistencies to ensure that all mothers have equal access to essential lactation support services and supplies.

Recommendation 7-2: The Centers for Medicare & Medicaid Services and the Federal Insurance Office, in collaboration with public and private payers, should create and ensure comprehensive coverage and payment of breastfeeding services and supplies to guarantee equal access to a standard package of services and durable medical equipment.

Adopt and Enact Breastfeeding-Friendly Policies to Support Leave and Return to Work and School

Returning to work or school poses a major challenge for breastfeeding mothers, as consistent infant and mother contact is important for sustaining breastfeeding. Working mothers encounter distinct challenges in sustaining breastfeeding, and these experiences vary from person to person. The recommendations that follow are focused on paid family and medical leave for working families and the enforcement of lactation protections in the workplace and schools.

There is consistent causal evidence that state mandates providing 12 weeks of paid family leave have positive effects on the duration of breastfeeding. Therefore, 12 weeks should be the minimum threshold for a federal paid family leave policy. Moreover, compelling evidence from Canada suggests that providing longer periods of paid family leave will generate even more increases in breastfeeding duration. Consistent with the scientific consensus on the health benefits of exclusive breastfeeding for the first 6 months postpartum, a number of studies find that paid family leave policies of up to 6 six months in other high-income countries confer health benefits to mothers and infants.

Recommendation 8-1: Congress should enact national paid family and medical leave for all postpartum mothers. In the absence of a national plan, states and employers should enact this coverage.

Several laws protect lactation accommodations for employees and students in the United States, but enforcement mechanisms vary across workplaces and educational institutions. While federal laws establish baseline protections, they could be further strengthened to support breastfeeding. Additionally, enforcement depends largely on complaints, legal action, and oversight by government agencies.

Recommendation 8-2: Federal, state, territorial, tribal, and local governments, in collaboration with the public and private sectors, should (a) strengthen and enforce existing laws and legislation that guarantee that lactation accommodations and spaces are available in all workplaces, schools, colleges, universities, and childcare centers and (b) ensure that they comply with federal and state legal requirements.

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Invest in Research Capacity and Community-Driven Approaches

The committee identified that conducting innovative breastfeeding research requires a range of investments to ensure high-quality, impactful studies. This may include cost-benefit analysis of interventions. These investments span financial resources, infrastructure, workforce development, policy support, and technology integration, as described in two recommendations.

Recommendation 9-1: The National Institutes of Health, along with other federal and nonfederal agencies, should expand funding and prioritize key breastfeeding research and implementation questions geared toward scaling up supports to achieve the Healthy People 2030 infant feeding goals.

Recommendation 9-2: The National Institutes of Health should develop an action plan for prioritizing community, clinical, and translational breastfeeding research across its institutes and centers; this plan should build on existing initiatives.

Conclusion

The recommendations presented in this report present proven overall strategies across multiple settings for supporting all families on their lactation journeys. They outline approaches that will foster the conditions and systems needed to achieve national goals to increase overall breastfeeding rates and address variances in these rates and health outcomes across populations.

1

Introduction

Breastfeeding and human milk feeding are the physiological norm for humans and the reference standard for infant feeding and nutrition (Centers for Disease Control and Prevention [CDC], 2022a; Meek et al., 2022; Pérez-Escamilla et al., 2023). Pérez-Escamilla et al. (2023) concluded that human infants and young children are most likely to survive and develop to their full potential when fed human milk from their mothers, in part “due to the dynamic and interactional nature of breastfeeding and the unique living properties of breastmilk” (p. 1). The U.S. Surgeon General, as well as prominent organizations of health professionals, concluded that the short- and long-term health and psychosocial benefits associated with breastfeeding make it a public health imperative in the United States (e.g., the American Academy of Pediatrics [AAP] [Meek et al., 2022]; American College of Nurse-Midwives, 2022; American College of Obstetricians and Gynecologists [ACOG], 2023; American Public Health Association, 1981, 2000, 2007, 2011, 2013, 2014; Association of Women’s Health, Obstetric and Neonatal Nurses, 2021; U.S. Department of Health and Human Services [HHS], 2011).

These organizations, along with scientific experts, have concluded that for almost all infants, breastfeeding remains the best source of early nutrition and immunological protection (CDC, 2022a; Pérez-Escamilla et al., 2023), reduces the odds of infant deaths (Li et al., 2022; Ware et al., 2023), and is associated with lifesaving protection for preterm infants at risk of developing necrotizing enterocolitis¹ (Lucas & Cole, 1990; Miller et al., 2018; Quigley et al., 2024; Sami et al., 2023). For example, infants who are breastfed “more” versus “less” may have a reduced risk of developing noncommunicable diseases such as asthma, otitis media, obesity in childhood, and childhood leukemia (Patnode et al., 2025). In addition, a protective association of breastfeeding has been found for infant mortality, including sudden infant death, rapid weight gain and growth, systolic blood pressure, severe respiratory and gastrointestinal infections in younger children, allergic rhinitis, malocclusion, inflammatory bowel disease, and type 1 diabetes (Patnode et al., 2025). There are also maternal health benefits associated with breastfeeding, including a reduced risk of developing certain chronic diseases such as breast and ovarian cancer, type 2 diabetes, and hypertension (Feltner et al., 2018), as well as important psychosocial benefits, such as opportunities for emotional bonding (HHS, 2011).

Previous research has identified that the health benefits of breastfeeding for mothers, infants, and children can be sustained across the life course and conferred to society at large by

¹ Necrotizing enterocolitis is the most common, serious gastrointestinal disease affecting newborn infants, and it typically occurs in the second or third week of life in premature, infant formula-fed infants. It is characterized by inflammation or death of the tissue of the intestinal lining.

avoiding the negative economic cost consequences of suboptimal² breastfeeding rates (Bartick et al., 2017; Jegier et al., 2024). Published models currently estimate the total costs of suboptimal breastfeeding rates in the United States to range from \$17.2 billion to over \$100 billion annually (Jegier et al., 2024) (see Chapter 2).

CURRENT BREASTFEEDING RATES AND NATIONAL GOALS

In the United States, more than 3.5 million women give birth each year, and approximately 84% initiate breastfeeding (CDC, 2024a; Martin et al., 2024). Most mothers want to breastfeed, as evidenced by high initiation rates, and intention³ to breastfeed is a strong predictor of breastfeeding initiation at birth (Borger et al., 2021; Odom et al., 2013). However, over half of mothers stop breastfeeding earlier than they desire (Diaz et al., 2023; Odom et al., 2013).

Despite high rates of intention and initiation, many mothers and families are unable to meet either their own goals or national breastfeeding recommendations⁴ for exclusivity and duration because of structural barriers. As shown in Figure 1-1, breastfeeding rates decline rapidly between 3- and 12-months postpartum. For example, only 27% of babies are exclusively breastfed for the first 6 months of life, a percentage far below the recommendation of the U.S. *Dietary Guidelines for Americans (DGA)* (CDC, 2022b). The *DGA* further recommends continuing breastfeeding and introducing appropriate complementary foods through at least 12 months of age (U.S. Department of Agriculture [USDA] & HHS, 2020). However, fewer than 40% of infants in the United States are still receiving human milk at 12 months (CDC, 2022b).

In alignment with the *DGA* recommendations, professional and public health organizations recommend that, when possible, breastfeeding be continued with appropriate complementary food for 2 years or as long as mutually desired (AAP [Meek et al., 2022]; ACOG, 2021, 2023; World Health Organization, 2023).

² To avoid stigmatizing infant feeding decisions or outcomes, we employ the terms *optimal* and *suboptimal*, when possible, to describe breastfeeding rates and highlight that the locus of control extends beyond the breastfeeding dyad or family unit and is impacted by systems-level factors.

³ *Breastfeeding intention*, as measured in two dimensions by the Infant Feeding Intention scale, qualitatively measures a mother's intended method of feeding her infant over time (i.e., duration of breastfeeding), as well as the exclusivity of that feeding (e.g., "only breastmilk") (Nommsen-Rivers & Dewey, 2009).

⁴ The committee acknowledges that individual breastfeeding goals may differ from national recommendations and that not all mothers choose to or are able to breastfeed exclusively or for extended durations. Many factors may influence infant feeding goals or decisions. National guidelines exist to improve health outcomes over time, not to impose a singular standard of behavior. The committee emphasizes the importance of supporting all families in meeting their own infant feeding goals with dignity and respect.

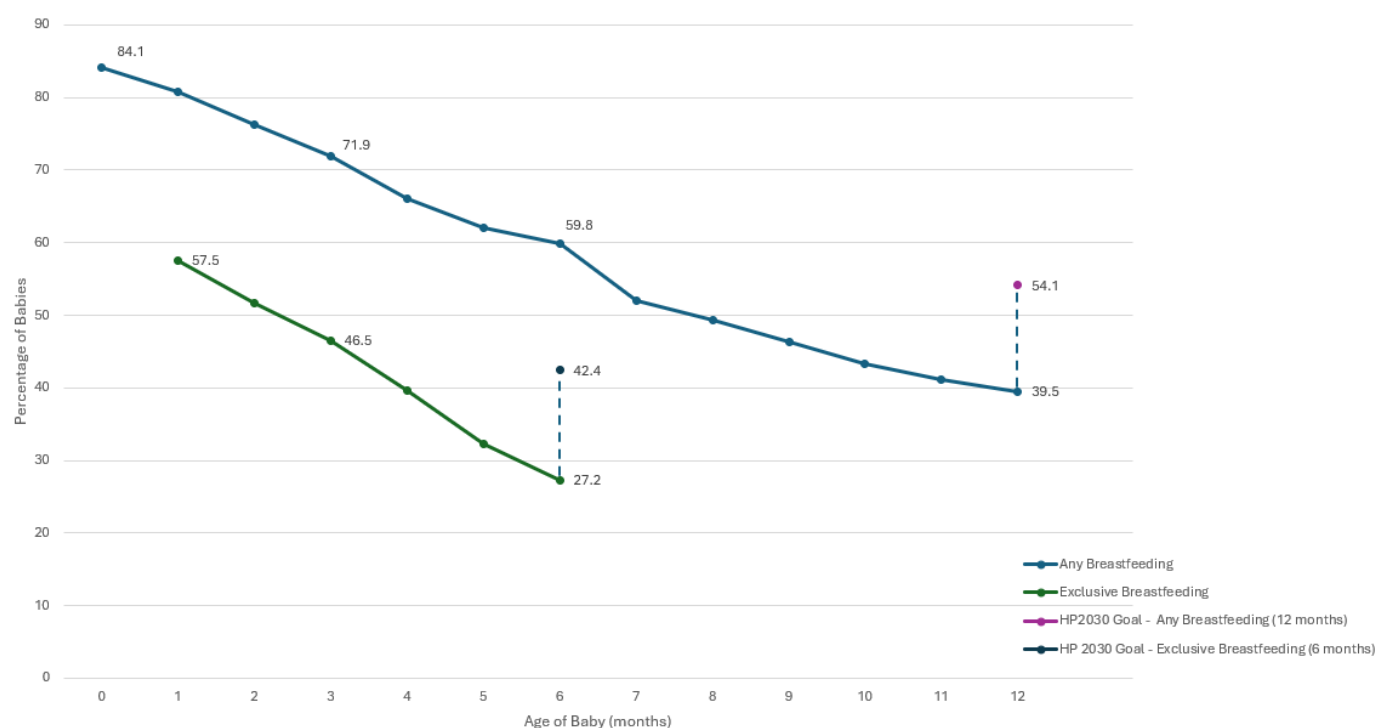


FIGURE 1-1 Percentage of babies receiving any and exclusive breastmilk during the first 12 months, among children born in 2021.

NOTE: The committee chose to use the term *human milk* throughout the report; however, references to data reflect the terminology used in the original source material.

SOURCE: Data from CDC, 2022b.

As noted in Figure 1-1, these national rates fall short of the Healthy People 2030 goals, which aim for 42.4% of infants to be exclusively breastfed through 6 months and 54.1% to receive any breastfeeding through 12 months (HHS, n.d.). The sharp decline in breastfeeding after birth reflects persistent challenges for families in meeting their breastfeeding goals, particularly around exclusivity and duration.

Breastfeeding rates are notably lower among certain groups, including Black women, American Indian/Alaska Native women, women with lower socioeconomic status, unmarried women, those living in rural areas, and younger mothers (Anstey et al., 2017; CDC, 2022b; Chiang et al., 2021). Many of these communities of mothers face disproportionate barriers to breastfeeding, such as the need to return to work early, inflexible job conditions, limited access to breastfeeding support services, and broader cultural and historical challenges (Asiodu et al., 2021; Griswold et al., 2018; Gyamfi et al., 2021; Kirksey et al., 2021; Lind et al., 2014; Louis-Jacques et al., 2017; Robinson et al., 2019; Segura-Pérez et al., 2021). These factors contribute to persistent variances in breastfeeding initiation, duration, and exclusivity.

In 2011, HHS released *The Surgeon General's Call to Action to Support Breastfeeding*. This document, building on the *Blueprint for Action on Breastfeeding* (HHS, 2000) and the *Surgeon General's Workshop on Breastfeeding and Human Lactation* (HHS, 1984), highlighted

key actions for mothers and their families, communities, health care systems, and employers that would better support breastfeeding and eliminate existing barriers to sustaining breastfeeding.

Despite these efforts, the United States has been unable to meet Healthy People 2030's modest breastfeeding targets. Raju (2023) notes that for infants born in 2019, 34 states continue to fall short of the Healthy People 2030 goals (see Chapter 3 for additional discussion). Gaps are greatest for subgroups facing structural barriers, including non-Hispanic Black families; participants in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); low-income households; unmarried parents; mothers under age 30; and those without any college education, according to an analysis of 2020 data (Noiman et al., 2024). Thus, the recommendations from *The Surgeon General's Call to Action* continue to be relevant and timely. Substantial work remains to protect, promote, and support breastfeeding in the United States. These recommendations are particularly relevant in the context of high maternal and infant mortality and morbidity rates in the United States (Gunja et al., 2024).

PURPOSE AND SCOPE OF THIS STUDY

The National Academies of Sciences, Engineering, and Medicine, through congressional mandate and sponsored by the HHS Office on Women's Health, was asked to conduct a consensus study on policies, programs, and investments to better understand the landscape of breastfeeding promotion, initiation, and support across the United States; to provide an evidence-based analysis of the macroeconomic, social, and health costs and benefits of the current U.S. breastfeeding rates and goals; and to explore what is known about inequalities in breastfeeding rates and reducing racial, geographic, and income-related breastfeeding variances. Congresswoman Lucille Roybal-Allard (D-CA) and Congresswoman Jaime Herrera Beutler (R-WA) led the development of the committee's charge in partnership with members of the Congressional Caucus on Maternity Care, who recognized the need for additional efforts to ensure that all families can access and receive comprehensive lactation support services in order to successfully initiate and maintain breastfeeding.

The committee's statement of task was outlined by the Consolidated Appropriations Act of 2023 (Public Law 117-328) and Senate Report 118-84 accompanying the Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Bill of 2024 to provide an "an evidence-based, non-partisan analysis of the macroeconomic, health, and social costs of U.S. breastfeeding rates and national breastfeeding goals" (p. 238) (see Box 1-1 for the committee's full statement of task).

BOX 1-1 Statement of Task

The National Academies of Sciences, Engineering, and Medicine (NASEM) will convene an ad hoc committee of experts to leverage available data and literature to conduct a consensus study on policies, programs, and investments to better understand the landscape of breastfeeding promotion, initiation, and support across the United States. The study will provide an evidence-based analysis of the macroeconomic, social, and health costs and benefits of the United States' current breastfeeding rates and goals. The study will build on what is known about variances in breastfeeding rates and reducing differences in initiation and continuation.

The committee will identify existing gaps in knowledge, areas for needed research, and will discuss challenges in data collection to address said gaps.

Based on available evidence, the committee will address the following issues and offer conclusions and recommendations:

1. Best practices for clinicians, healthcare systems, insurers, and employers to encourage breastfeeding by new mothers and to support mothers who are currently breastfeeding, including mothers from populations and those experiencing poverty
2. Macroeconomic, health, and social costs of current U.S. breastfeeding rates
3. Funding mechanisms, state and federal policies, interventions, and systemic, cross-sector, or field innovations that can support exclusive breastfeeding through the first 6 months of life
4. How insurers implement comprehensive lactation services, set standards to determine reimbursement rates for breastfeeding supplies and services, and provide coverage to help women breastfeed
5. Contributing factors that impact breastfeeding rates and access to postpartum maternal care and supportive services (e.g., lactation consultant, doula support, registered dietitians)
6. Leverage of available evidence to meet the Healthy People Maternal, Infant, and Child Health (MICH) breastfeeding goals by 2030.

This report presents a road map for policy and practice changes necessary to ensure that all women have equal access to the knowledge, resources, and support to set and achieve their breastfeeding goals, with the aim of improving long-term health outcomes for the nation. The chapters that follow review proposed breastfeeding national strategies, setting by setting, and highlight promising policy and practice opportunities and future research priorities related to achieving this vision. In addition, the text highlights opportunities to address barriers and opportunities to scale up promising approaches. A variety of systems-level leaders and actors are identified throughout the report and in the recommendations. The committee’s overarching goal in this report is to provide accessible strategies for actionable change.

Report Terminology

The statement of task uses the term *breastfeeding*, which is most often used in scientific and practice-based literature. In this report, it refers to the dynamic physiological process and interactions that occur between a mother and infant, including (1) feeding at the breast as well as (2) expressed human milk feeding (e.g., mother’s own milk, donor human milk, shared human milk, and purchased human milk) (Rasmussen et al., 2017). Feeding at the breast and expressed human milk feeding may be exclusive or be in combination with alternatives such as commercial milk formula (e.g., infant formula).

The committee grappled with defining the terminology to be used throughout the report given the need for precision in response to the changing landscape of infant feeding. Box 1-2 defines this report’s key terms.

BOX 1-2 Report Definitions and Terminology

During its deliberations, the committee dedicated attention to the evolution of terms used to describe infant feeding. For clarity, these terms are defined and described below.

Breastfeeding is the process of feeding an infant or young child human milk directly from the breast or expressed or pumped milk from a bottle or other feeding device.

Colostrum is excreted from mammary glands in the breast during pregnancy and after childbirth until production of voluminous human milk begins, typically within 3 days after birth.

Direct breastfeeding is feeding human milk directly from the breast, typically from a mother to her child, which has demonstrated species and individual properties, such as microbiota and immunological development, that augment optimal health outcomes. These immunological benefits have not been established for direct breastfeeding via a “wet nurse,” or a lactating individual who is not the mother.

Exclusive breastfeeding is when an infant receives only breastmilk. Also called *exclusive human milk feeding*, it refers to when an infant consumes only human milk, not in combination with commercial milk formula or other foods or beverages (including water), except for medications or vitamin and mineral supplementation (Dewey et al., 2020).

Human milk is produced by the human mammary glands to feed infants and young children. It contains immune factors (e.g., IgA, lactoferrin, oligosaccharides), hormones, and other essential nutrients, and is sometimes referred to as *breastmilk* (Palmquist et al., 2019). This may be mother’s own or donor human milk.

Human milk expression or pumping is the practice, using hand or pump, to express human milk from the breast or chest (Labiner-Wolfe et al., 2008).

Breast pumps are a technology used to extract milk from the breast by creating a seal around the nipple and areolar complex and alternately applying and releasing suction, which expresses milk. One cycle is one round of combined suction and release. Types of pumps include manual, battery-powered, and electric pumps (Food and Drug Administration [FDA], 2018).

Human milk sharing is an exchange of expressed human milk between individuals in which a donor provides expressed human milk directly to a recipient family for the purpose of infant feeding (Palmquist & Doehler, 2016).

Human milk exchange includes human milk banking, human milk sharing, and markets in which human milk may be purchased or sold by individuals or commercial entities (Palmquist et al., 2019).

Pasteurized donor human milk is human milk that has been donated to a milk bank that is screened, tested, pooled, and pasteurized, and then dispensed to infants in need (Human Milk Banking Association of North America [HMBANA], 2024).

Combination feeding, otherwise known as mixed feeding, is feeding both human milk and commercial milk formula, but not other foods or beverages (i.e., complementary foods), such as cow’s milk or fruit juice (USDA & HHS, 2020).

The term **commercial milk formula** has been used primarily in the global research context as an umbrella term to describe infant formula, toddler milks, and related products (Pérez-Escamilla et al., 2023). The term emphasizes that these are commercially produced and marketed products. In the United States, the terms *infant formula* and *toddler milk* are most often used to refer to commercially available products.

Infant formula is defined by the Federal Food, Drug, and Cosmetic Act (201[z]) as “a food which purports to be or is represented for special dietary use solely as a food for infants by reason of its simulation of human milk or its suitability as a complete or partial substitute for human milk” (FDA, 2023).

Follow-up formula and milk are commercial products marketed to replace human milk and are labeled as a food intended for use in infants from 6 months onward as part of a weaning diet (Lutter et al., 2022).

Toddler milk is a nutrient-fortified beverage that often contains added sugars. These products are often marketed towards children aged 9–36 months as a transition milk or formula or weaning formula (Lott et al., 2019).

Prelacteal feeds are foods other than breastmilk offered during the first 3 days after delivery, encompassing a range of substances including water; milk; and milk-based substances, which may include commercial milk formula products (Pérez-Escamilla et al., 2023).

Complementary feedings are foods or beverages that are recommended to be introduced to infants at approximately age 6 months that are not human milk or infant formula (e.g., vegetables, fruits, cereals, meats) but may “complement” human milk or formula provided to the baby (CDC, 2024b). They may also be referred to as *solid foods*.

SOURCES: Dewey et al., 2020; FDA, 2018, 2023; HMBANA, 2024; Labiner-Wolfe et al., 2008; Lott et al., 2019; Lutter et al., 2022; Palmquist et al., 2019; Palmquist and Doehler, 2016; Pérez-Escamilla et al., 2023; USDA & HHS, 2020.

The committee also discussed how to clearly define the various types of lactation support providers, including the role and scope of community members and peer counselors who support lactation. Definitions and descriptions of these various terms are explored in Chapter 3, and education, training, and certification for providers in the health care setting are addressed in Chapter 6.

Study Scope

In accordance with the committee’s charge, this report provides an overview and description of previous research that identifies and quantifies the macroeconomic, social, and health costs and benefits of breastfeeding rates and goals. It reviews the evidence related to best practices for communities, clinicians or *lactation support providers*,⁵ health care systems, insurers, and employers, as well as policies, funding mechanisms, and innovations in the field that support breastfeeding. Moreover, as directed by the charge, it pays particular attention to variances in breastfeeding rates, as well as other contributing factors that influence breastfeeding rates among different populations. The report also notes limitations in the available evidence base resulting from the exclusion of different communities and population groups from scientific research.

Because enabling breastfeeding is a key strategy for improving public and population health in the United States, this report identifies opportunities for federal, tribal, state, and local agencies, as well as health care systems, public health departments, health insurers, employers, schools, community-based organizations, and regulators, to enable policies and services that support breastfeeding dyads⁶ and the communities in which they live, noting where such supports may be particularly effective for historically underserved populations.

The committee was not asked to conduct a novel review of the health effects of breastfeeding. Any new or additional analyses were not feasible within the time and resource constraints of the study. However, the committee reviewed the available literature and referred to pertinent reviews throughout the report. Recent systematic reviews assess this literature (e.g., Feltner et al., 2018; Patnode et al., 2025; Pérez-Escamilla et al., 2023). In addition, the committee was not charged with conducting cost calculations for implementation of new or

⁵ The term *lactation support provider* includes both clinicians and nonclinical members of the current workforce.

⁶ The term *breastfeeding dyad* describes the biological and psychosocial relationship between the mother and infant or child.

expanded programs to support breastfeeding. The committee did review the existing cost calculations of suboptimal breastfeeding (i.e., the macroeconomic, health, and social costs of current U.S. breastfeeding rates) (see Chapter 2).

The committee also notes that the infant formula crisis of 2022 prompted important discussions about breastfeeding in the United States. In late 2021 and early 2022, a recall of specific infant formula products, followed by a pause in production, resulted in a widespread, national shortage of infant formula. The commercial milk formula industry is discussed throughout this report as an actor in the broader public health and marketing setting that influences the breastfeeding dyad. A previous National Academies report, *Challenges in Supply, Market Competition, and Regulation of Infant Formula in the United States* (2024), discusses the commercial milk formula industry in depth and recommends actions for reducing the risk and lessening the effect of any future disruption to the commercial milk formula supply chain. Importantly, that report makes clear that scaling up support for breastfeeding is key to protecting infant health during such supply disruptions (NASEM, 2024).

STUDY METHODS

The committee assembled to conduct this study consisted of 15 expert scholars and practitioners who represented a broad range of disciplines, including lactation and breastfeeding promotion and support, public health, public policy, nursing, nutrition, obstetrics and gynecology, pediatrics, economics, social marketing and public information campaigns related to nutrition, and WIC and other public health programs; committee members included parents and women with breastfeeding lived experience. The committee held four in-person meetings and one virtual committee meeting and conducted additional discussions by videoconference and digital platforms. The first, second, and third committee meetings included public information-gathering sessions, during which the committee heard from invited participants, including the study sponsors and former congressional representatives, as well as individuals and researchers from academia, advocacy organizations, and public policy research institutions. In addition, the committee held six virtual public information-gathering sessions throughout the study. The fourth and fifth committee meetings were closed to the public to allow the committee to further deliberate and finalize its report.

Public Information-Gathering Sessions

The public information-gathering sessions served to augment the committee members' expertise, solicit opinions from community representatives and key actors, and facilitate exchanges among parties that might not have the opportunity to disseminate information and ideas otherwise. They were open to the public and live streamed. Invited guests were asked to share their lived experiences and expertise as it related to the foci of the information-gathering session. Public attendees were able to provide questions during and after the sessions, when appropriate.

Serious consideration was given to including practice-based and community-engaged evidence during the information-gathering sessions to ensure that the lived experience of those closest to the study topic would be reflected in the report (Farrell et al., 2021). To this end, six listening sessions were held virtually for further discussion on breastfeeding and (1) the role of community coalitions, (2) the experiences of fathers and partners, (3) individual experiences in

hospitals or other birth settings, (4) considerations for families, (5) perspectives from lactation support providers, and (6) return to work postpartum. While the committee attempted to ensure that a wide range of perspectives were shared during the public information-gathering sessions, they were not representative samples. Therefore, while they highlight topics and areas as points requiring further inquiry and deliberation, they do not serve as the basis for the committee's recommendations. Rather, the public sessions revealed embedded values in the provided testimony and shared literature (see Box 1-3 for a summary of common themes across perspectives). These values helped provide additional depth and nuance to the committee's deliberations and, where appropriate, are reflected throughout the narrative of the report.

BOX 1-3

Common Themes Across Listening Session Perspectives

Gaps in Lactation Support. There is a shortage of accessible breastfeeding support services that meet the full range of family needs. Community coalitions help fill these gaps by offering care that reflects local values and practices.

Role of Community Coalitions. Coalitions use local expertise, train trusted individuals, and offer practical, personalized support. However, many operate with limited and inflexible funding sources, making sustainability a challenge.

Need for Improved Data. Grouping distinct populations into broad categories can result in data that fail to reflect actual experiences. Participants stressed the value of having a standardized yet flexible tool to collect more accurate breastfeeding data.

Lactation Support Provider Workforce. Becoming a lactation support provider often requires navigating high costs and limited training access. Supportive training environments and financial assistance help people enter and stay in the field. Daily work includes consultations, education, and coordination with care teams.

Support in Health Care Settings. Participants described challenges receiving breastfeeding support in medical settings. Improving provider training in lactation care and communication could help families have more consistent and helpful experiences.

Involvement of Fathers and Partners. Fathers and partners play an important role in supporting breastfeeding. Involving them early, offering educational resources, and adjusting

care models to include them can improve outcomes for the whole family.

Workplace and Policy Considerations. Gaps in workplace accommodations and paid leave create barriers to continuing breastfeeding after returning to work. Participants recommended clear policies, paid breaks, and flexibility to help parents manage both work and infant care.

Strength of Evidence

The committee weighed the strength of the evidence throughout the report, as well as the assumptions embedded within various theoretical models. Most of the available evidence on the importance of breastfeeding is observational in design. The limited availability of randomized controlled trials in breastfeeding research is due to the ethical restrictions of randomly assigning a control to not breastfeed or provide human milk, as well as considerations related to informed consent (e.g., providing adequate and accurate information about the benefits of breastfeeding, protecting the right of the parent to breastfeed or of an infant to be breastfed), beneficence, and appropriate outcome measures (Binns et al., 2017). Other ethical issues identified in a review of lactation interventions by Subramani et al. (2023) include the normative assumptions of motherhood and autonomy, disclosure of relevant information, the role of stigma and the social context, and ethical considerations related to health communication campaigns and financial incentives.

The committee acknowledges that observational studies assessing the associations between breastfeeding and morbidity are influenced by potential sources of biases, including measurement, selection, confounding, and reverse causality. Observational study designs are unable to determine causality, and there are limits to existing study measurements, definitions of the “exposed population,” and incidence ratios. Although carefully designed natural experiments aimed at identifying causal effects have the potential to get around many of these problems, they are not a panacea, as clean treatment and control groups may be difficult to find and some confounders may still be present. Moreover, their generalizability may be limited. As such, the committee assessed various types of available evidence and described key considerations related to study design and results when describing reported outcomes.

The current evidence base continues to grow. Epidemiological models can provide risk ratios for a variety of maternal, infant, and child health and development outcomes associated with infant feeding exposure. To complement this work, cost models and calculators provide a range of economic estimates to policymakers and the public (see Chapter 2).

Given these research and methodological considerations, multiple research designs and methods may be used to inform considerations for implementation, policy, and practice. To this end, the committee offers a comprehensive presentation of available evidence, including experimental and observational studies using quantitative and/or qualitative data, across a range of outcomes. It presents the evidence with intentional language on evidence generation, application, and outcomes of interest. And recommendations for future research are identified in Chapter 9.

Finally, the committee acknowledges that the scope of federal recommendations and the roles of identified actors may shift significantly in response to federal reorganization efforts,

potentially altering agency responsibilities, streamlining decision-making processes, and redistributing authority among existing or newly created entities.

REPORT ORGANIZATION

Following this introduction, Chapter 2 details the importance of breastfeeding, including health benefits for infants and mothers, as well as the physiology of lactation. It then presents a life course perspective to demonstrate how these benefits may be conferred over time and includes a discussion of the costs of current suboptimal breastfeeding rates. Chapter 3 describes breastfeeding in the community context and explores the social ecology of breastfeeding, the history of breastfeeding in the United States, cultural perceptions, interpersonal influences, and promising approaches for communities.

The following chapters of the report use the leverage points and opportunities for action identified in the social ecological framework to review the institutions, organizations, and settings that influence breastfeeding. Chapter 4 describes federal and state public health policies, programs, and investments that support and promote breastfeeding. It also provides an overview of the current public health surveillance system, the role of the WIC program in breastfeeding support, and public health approaches that support breastfeeding in emergencies and disasters. Chapter 5 identifies the media, marketing, and messaging environment for breastfeeding, human milk supplies, and commercial milk formula. Chapter 6 articulates the role that health care systems and settings play in breastfeeding and lactation support and describes the current lactation provider workforce in the medical setting. Chapter 7 delves into the financing, payment, and insurance coverage of lactation services and supplies. Chapter 8 explores family leave, as well as the role of employers, school systems, and childcare providers in supporting breastfeeding during the return to work or school postpartum. Finally, Chapter 9 describes future research needs and implementation considerations.

A guiding assumption driving the committee's recommendations is that families and communities will make the best possible decisions for themselves given present constraints and available resources. Therefore, it is important to implement structures, policies, and practices to support and enable families to initiate and sustain breastfeeding; these need to be accompanied by clear, evidence-based guidance for families and communities about the options and supports available. Taken together, the recommendations presented in Chapters 3–8 provide a comprehensive set of strategies for supporting all families in their breastfeeding journeys. These strategies aim to foster the conditions and systems needed to achieve national goals to increase breastfeeding rates. These opportunities for investment can improve health and well-being across future generations and prevent excess costs related to suboptimal breastfeeding rates.

This report's recommendations present proven overall strategies across multiple settings for supporting all families on their lactation journeys. They outline approaches that will foster the conditions and systems needed to achieve national goals to increase overall breastfeeding rates and address variances in these rates and health outcomes across populations.

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2

The Importance of Breastfeeding Across the Life Course

This chapter highlights the importance of breastfeeding, with a particular focus on its associated health benefits for both mothers and infants. In alignment with its statement of task, which did not call for a novel evidence review, the committee offers a summary of existing research, drawing primarily from meta-analyses and systematic reviews of key health outcomes. The chapter then examines the physiology of breastfeeding and human lactation, explaining the biological processes that enable lactation and the mechanisms through which health benefits may be conferred. Taking a life course perspective, the chapter next identifies critical inflection points, such as prenatal care, birth experiences, and early postpartum support, that can influence breastfeeding initiation and duration, and ultimately, health outcomes. An overview of current breastfeeding rates in the United States follows, identifying trends and differences across populations. Finally, the chapter reviews existing modeling efforts aimed at estimating the economic costs associated with current, suboptimal breastfeeding rates.

THE HEALTH BENEFITS OF BREASTFEEDING

Decades of research show that breastfeeding is associated with short- and long-term benefits for children and mothers. To date, the most comprehensive and widely cited systematic review on the relationship between breastfeeding and infant and maternal health outcomes is a report by Ip et al. (2007). Feltner et al. (2018) partially updated that report but focused only on the maternal health benefits of breastfeeding. Several recent reviews, including those from the Pregnancy and Birth to 24 Months Project (Güngör et al., 2019a, 2019b, 2019c, 2019d; Obbagy et al., 2019; Stoody et al., 2019) and others (Brown et al., 2019; Dewey et al., 2021; Horta et al., 2015, 2023; Lockyer et al., 2021; Meek et al., 2022; Pathirana et al., 2022; Rollins et al., 2016; Su et al., 2021; Victora et al., 2016) have examined specific infant and child outcomes.

Recently, a systematic review by Patnode et al. (2025) comprehensively updated the evidence from Ip et al. (2007) on the link between breastfeeding and infant and child outcomes. This review advances understanding of the potentially nuanced benefits of breastfeeding for infant- and child-specific health outcomes; the magnitude of those benefits; and how they vary with the intensity, duration, mode of feeding, and source of human milk. However, this review did not include preterm infants or infants requiring intensive care. In the sections that follow, the committee briefly describes the evidence on potential health impacts of breastfeeding for mothers and children, including sick or vulnerable infants and children.

Maternal Health Benefits

In mammalian physiology, discussed later in this chapter, lactation and the practice of breastfeeding¹ follow pregnancy. Breastfeeding is also associated with significant health benefits for women over the course of their lives and is a normal part of reproductive physiology and recovery from pregnancy.

In the immediate postpartum period, women who breastfeed experience more rapid uterine involution, decreased postpartum bleeding, and increased child spacing (Louis-Jacques & Stuebe, 2020; Victora et al., 2016). These immediate postpartum benefits are important, as hemorrhage is a leading cause of maternal morbidity postpartum (American College of Obstetricians and Gynecologists [ACOG], 2017; Del Ciampo & Del Ciampo, 2018; Victora et al., 2016). Findings from Feltner et al. (2018) suggest that ever breastfeeding or breastfeeding for longer durations “may be associated with lower rates of breast cancer, ovarian cancer, hypertension, and type 2 diabetes” (p. ix). The authors went on to conclude there were inconsistent findings related to postpartum depression, weight change after birth, and cardiovascular disease (Feltner et al., 2018). Two systematic reviews and a large prospective cohort study published since 2018 have provided additional evidence on the association of breastfeeding duration with reduced maternal risk of cardiovascular disease outcomes (Tschiderer et al., 2022), including among women with diabetes complicating pregnancy (Birukov et al., 2024; Field et al., 2025). Chehayeb et al. (2025) also reported that breastfeeding is associated with a lower risk of triple negative breast cancer.

Researchers have also examined whether there is a relationship between breastfeeding and psychosocial outcomes for the breastfeeding dyad, such as attachment, bonding, and maternal mental health. Peñacoba and Catala (2019) conducted a systematic review of the literature related to associations between breastfeeding and mother–infant dyad relationships. The review included 13 studies; most of which were conducted in Europe (46.15%) and were nonexperimental in design (92.3%). The authors found that the relationship indicators most frequently associated with breastfeeding are maternal sensitivity and secure attachment, though the association is complex, and the breastfeeding relationship or method of feeding appears to influence outcomes. Furthermore, a review by Tucker and O’Malley (2022) noted that breastfeeding can have a positive impact on maternal mental health, specifically as it relates to postpartum depression, self-efficacy, and dyad bonding. The authors went on to state that breastfeeding difficulties or early cessation can be a risk factor and potentially exacerbate perinatal mood and anxiety disorders if proper social support and lactation care are not provided or accessible (Tucker & O’Malley, 2022).

These findings point to the importance of breastfeeding for mothers across the life course. Yet, additional research is needed to further understand the relationship between breastfeeding and maternal physical and mental health.

Health Benefits for Infants and Children

As noted in Chapter 1, human milk provides all the nutrients necessary to support optimal growth and development for nearly all infants for the first 6 months of life and provides

¹ As noted in Chapter 1, *breastfeeding* refers to the dynamic physiological process and interactions that occur between a mother and infant, including feeding at the breast and/or feeding expressed or pumped human milk.

continued essential nutrition and developmental benefits for the duration² of breastfeeding. As briefly described in Chapter 1, infants who are breastfed “more” versus “less” may have a reduced risk of developing noncommunicable diseases such as asthma, otitis media, obesity in childhood, and childhood leukemia (Patnode et al., 2025). In addition, a protective association of breastfeeding has been found for infant mortality, including sudden infant death, rapid weight gain and growth, systolic blood pressure, severe respiratory and gastrointestinal infections in younger children, allergic rhinitis, malocclusion, inflammatory bowel disease, and type 1 diabetes (Patnode et al., 2025). Breastfeeding can also be lifesaving in humanitarian emergencies, including natural disasters and supply chain disruptions (e.g., Bartick et al., 2024; Cerceo et al., 2024; see Chapters 4 and 5).

Patnode et al. (2025) identified several key findings related to the health effects of breastfeeding for infants, as presented in Table 2-1.

² Professional and public health organizations recommend that, when possible, breastfeeding be continued with appropriate complementary food for 2 years or as long as mutually desired (American Academy of Pediatrics [AAP], 2022; American College of Obstetricians and Gynecologists [ACOG], 2021, 2023; World Health Organization [WHO], 2023).

TABLE 2-1 Overall Findings by Patnode et al. (2025) on Strength of Evidence (SOE) and Direction of Association

SOE and direction of association	Outcome	Number of ESRs (k in newest ESR) (Credibility) ^a	Number of Primary Studies, by Design (ROB) ^b	Key Findings
Moderate SOE for reduced risk	Otitis media	1 ESR ²² (k=24) (1 High)	10 cohort ²³⁻³² (3 Some concerns, 6 High, 1 Very high)	Reduced risk of otitis media associated with breastfeeding, particularly at younger ages (≤ 24 months). Pooled analyses showed an approximately 33% reduced risk of otitis media when comparing ever versus never breastfeeding and for longer versus shorter durations of any breastfeeding, and a 43% reduced risk when comparing longer versus shorter durations of exclusive breastfeeding.
	Asthma	3 ESRs ^{8,33,43} (k=42) (1 High, 1 Mod, 1 Low)	11 cohort ^{32,44-53} (5 Some concerns, 6 High)	Reduced risk of asthma in childhood (2-12 years) associated with breastfeeding. The magnitude of the relative risk in pooled analyses ranged from approximately a 7 to 31 percent reduced risk of asthma with longer versus shorter durations of any breastfeeding and a 6 to 30 percent reduced risk when comparing longer versus shorter durations of exclusive breastfeeding.
	Obesity	3 ESRs ³⁴⁻³⁶ (k=159) (2 Moderate, 1 Low)	25 cohort ^{32,45,46,54-75} (9 Some concerns, 12 High risk, 4 Very high risk)	Lower risk of overweight and obesity in children 2 to 12 years old associated with breastfeeding. The magnitude of the association suggests a 15 to 34 percent reduced odds of having obesity with more versus less breastfeeding and a 4 percent reduction in the risk of early childhood obesity for every additional month of breastfeeding.
	Cancer	2 ESRs ^{37,38} (k=46) (1 High, 1 Moderate)	2 cohort, ^{32,76} 3 case-control ⁷⁷⁻⁷⁹ (2 Some concerns, 2 High, 1 Very high)	Reduced risk of childhood leukemia associated with breastfeeding, with pooled analyses suggesting a 10 to 23 percent reduced risk of childhood leukemia with ever versus never breastfeeding. No clear association for other cancer types.
Low SOE for reduced risk	Respiratory infections	2 ESRs ^{80,81} (k=16) (2 Low)	35 cohort ^{23,24,28,29,31,32,44,46,82-108} (2 Low, 14 Some concerns, 17 High, 2 Very high)	Potential reduced risk of respiratory infections of greater severity associated with breastfeeding, particularly among infants and children ages 24 months or less. No evidence on COVID-19.
	Diarrhea and GI infections	1 ESR ⁸¹ (k=8) (1 Low)	15 cohort ^{23,24,29,32,85,89,90,94,98-102,105,109} (1 Low, 7 Some concerns, 5 High, 2 Very high)	Potential reduced risk of moderate-to-severe GI infections and breastfeeding at younger ages, particularly in infants 6 months or less. No clear association between breastfeeding and GI infections in infants and children of older ages.
	Allergic rhinitis	3 ESRs ^{8,43,110} (k=23) (2 High, 1 Low)	4 cohort ^{44,45,52,53} (2 Some concerns, 2 High)	Potential reduced risk of allergic rhinitis associated with breastfeeding.
	Malocclusion	2 ESRs ^{111,112} (k=14) (2 Moderate)	No studies	Potential reduced risk of the development of malocclusion associated with any or exclusive breastfeeding, with inconsistent evidence on breastfeeding duration.

SOE and direction of association	Outcome	Number of ESRs (k in newest ESR) (Credibility) ^a	Number of Primary Studies, by Design (ROB) ^b	Key Findings
	Inflammatory bowel disease	2 ESRs ^{6,113} (k=42) (1 Moderate, 1 Low)	1 case-control, ¹¹⁴ 2 cohorts, ^{115,116} 1 pooled cohort ¹¹⁷ (1 Low, 1 Some concerns, 1 High, 1 Very high)	Potential reduced risk of inflammatory bowel disease associated with longer vs. shorter duration of breastfeeding.
	Type 1 diabetes	2 ESRs ^{9,118} (k=22) (2 Low)	1 case-control, ¹¹⁹ 2 cohort ^{120,121} (1 Some concerns, 1 High, 1 Very high)	Potential reduced risk of type 1 diabetes in children 18 years and younger associated with breastfeeding.
	Rapid weight gain and growth	3 ESRs ¹²²⁻¹²⁴ (k=20) (2 Moderate, 1 Low)	14 cohort ^{45,54,58,63,74,125-137} (6 Some concerns, 4 High, 4 Very High)	Potential lower risk of accelerated growth and rapid weight gain in infancy and early childhood associated with breastfeeding.
	Cardiovascular outcomes	2 ESRs ^{138,139} (k=35) (2 Low)	14 cohort ^{55,64,73,140-150} (4 Some concerns, 10 High)	Potential reductions in SBP associated with breastfeeding, no clear association for DBP. No clear association between breastfeeding and blood lipid levels or arterial stiffness. Insufficient evidence for CVD endpoint outcomes.
	Infant mortality, including SUID	2 ESRs ^{151,152} (k=18) (2 Moderate)	2 case-control, ^{153,154} 4 cohort ¹⁵⁵⁻¹⁵⁸ (5 High, 1 Very high)	Potential reduced risk of infant mortality associated with breastfeeding initiation, including risk of late-neonatal mortality and SUID.
Moderate SOE for no association	Cognitive development	1 ESR ¹⁵⁹ (k=84) (1 Low)	26 cohort ^{67,160-184} (14 Some concerns, 10 High, 2 Very high)	No association between breastfeeding and cognitive ability at any age.
Low SOE for no association	Atopic dermatitis	3 ESRs ^{8,43,185} (k=27) (2 High, 1 Low)	9 cohort ^{45-47,49,52,53,137,186,187} (4 Some concerns, 4 High, 1 Very high)	No clear association between breastfeeding and the risk of atopic dermatitis at any age.
	Celiac disease	2 ESRs ^{6,188} (k=30) (1 Moderate, 1 Low)	1 cohort ¹⁸⁹ (1 High)	No clear association between breastfeeding and risk of celiac disease.
Moderate SOE for increased risk	Dental caries	1 ESR ³⁹ (k=31) (1 High)	2 cohort ^{190,191} (1 Low risk, 1 Some concerns)	Increased risk of dental caries associated with breastfeeding 12 months or longer. Pooled analyses showed an approximately 54% increased risk of caries when breastfeeding for 12 months or longer versus less than 12 months.

SOE and direction of association	Outcome	Number of ESRs (k in newest ESR) (Credibility) ^a	Number of Primary Studies, by Design (ROB) ^b	Key Findings
Insufficient SOE	Food allergy	2 ESRs ^{8,43} (k=7) (1 High, 1 Low)	10 cohort ^{46,52,137,186,187,192-196} (4 Some concerns, 5 High, 1 Very high)	Insufficient evidence to draw a conclusion on the association between breastfeeding and the risk of food allergies.
	Type 2 diabetes	2 ESRs ^{9,139} (k=2) (2 Low)	4 cohort ^{55,146,197,198} (2 Some concerns, 2 High)	Insufficient evidence to draw a conclusion on the association between breastfeeding and risk of type 2 diabetes and intermediate diabetes outcomes at any age.

^a Credibility of ESRs was assessed using an adapted version of the AMSTAR 2 (A MeaSurement Tool to Assess systematic Reviews) tool^{13,14} (Full Report Appendix D, Table D-1). Overall credibility was rated as: high (zero or one non-critical weakness), moderate (more than one non-critical weakness), low (one critical flaw with or without non-critical weaknesses or more than one non-critical weakness), or critically low (more than one critical flaw with or without non-critical weaknesses).

^b Risk of bias was assessed using adapted versions of the ROBINS-E (Risk Of Bias In Non-randomized Studies of Exposures) tool^{17,18} or the Newcastle Ottawa Scale for Case Control Studies¹⁷ (Full Report Appendix D, Tables D-2 and D-3). Overall risk of bias was rated as low, some concerns, high, or very high risk of bias.

Abbreviations: CVD = cardiovascular disease; DBP = diastolic blood pressure; ESR = existing systematic review; GI = gastrointestinal; ROB = risk of bias; SBP = systolic blood pressure; SOE = strength of evidence; SUID = sudden unexpected infant death; vs = versus

SOURCE: Patnode et al., 2025.

While the Patnode et al. (2025) review did not find associations between breastfeeding and cognitive benefits for infants, other studies have found such relationships (e.g., Belfort et al., 2013; Fitzsimons & Vera-Hernández, 2022; Goldshtein et al., 2025; Horta et al., 2015; Yang et al., 2018). For example, using variation in timing of births at hospitals and likelihood of breastfeeding, Fitzsimons and Vera-Hernández (2022) estimated the effect of breastfeeding on children's development in the first 7 years of life, for a sample of births by low-educated mothers. They found large effects of breastfeeding on children's cognitive development (Fitzsimons & Vera-Hernández, 2022). Furthermore, a retrospective cohort study from Israel that included more than half a million children reported that longer exclusive and any breastfeeding durations was associated with reduced odds of developmental delays, as well as language or social neurodevelopmental conditions (Goldshtein et al., 2025), which the authors suggest may mediate the relationship between breastfeeding and cognitive development. The study specifically found that children who were breastfed for at least 6 months versus children breastfed for less than 6 months had fewer delays in attaining language and social or motor developmental milestones. The corresponding adjusted odd ratios (AORs) were 0.73 (95% CI: 0.7–10.76) for exclusive breastfeeding and 0.86 (95% CI: 0.83–0.88) for nonexclusive breastfeeding). Importantly, among the 37,704 sibling pairs, children who were breastfed for at least 6 months were less likely, compared with their sibling with less than 6 months of breastfeeding or no breastfeeding, to demonstrate developmental delays or be diagnosed with neurodevelopmental conditions. The corresponding AORs were 0.91 (95% CI: 0.86–0.97) and 0.73 (95% CI: 0.66–0.82) (Goldshtein et al., 2025). Therefore, the current evidence base suggests that some cognitive outcomes may be associated with breastfeeding, but additional research is needed to further elucidate this relationship, including the potential causal pathways and contextual factors that may moderate this relationship. Differences in study design, populations studied, and methods for accounting confounding factors may influence findings.

Health Benefits for Sick or Vulnerable Infants and Children

In the United States, approximately 300,000 infants are admitted to the neonatal intensive care unit (NICU), each year (Pineda et al., 2023). NICU admissions for critically ill infants increased 13% between 2016 and 2023 (Martin & Osterman, 2025). Sick or vulnerable infants, especially those who are born early (before 37 weeks gestation), at low birth weight (less than 5.5 pounds) and very low birth weight (less than 3.3 pounds), have an increased risk of short- or long-term health problems (Boundy et al., 2022). For critically ill infants, human milk has been identified as a lifesaving intervention (Parker et al., 2021; Schanler, 2011; Spatz, 2004; Sullivan et al., 2010; Underwood, 2013; Updegrave, 2004).

Miller et al. (2018) conducted a systematic review and meta-analysis that synthesized literature, starting after the 1990s, examining the effect of human milk on morbidity, specifically necrotizing enterocolitis, late-onset sepsis, retinopathy of prematurity, bronchopulmonary dysplasia, and neurodevelopment in infants born at or before 28 weeks' gestation; they also reviewed publications with reported infant mean birth weight of 1,500 grams or more. Experimental and observational studies were pooled separately in the meta-analyses. Risk of bias was assessed for each individual study, and the GRADE³ system was used to judge the certainty of the findings. Forty-nine studies (with 56 reports) were included, of which 44 could be included in meta-analyses. Miller et al. (2018) found that human milk was associated with a protective effect against necrotizing enterocolitis, with an approximate 4% reduction in absolute risk.

Parker et al. (2021) also reported that human milk was associated with a reduction in late-onset sepsis, severe retinopathy of prematurity, and severe necrotizing enterocolitis. Particularly for necrotizing enterocolitis, any volume of human milk was found to be better than exclusive preterm formula, and the higher the dose the greater the protection. Altobelli et al. (2020) found that the risk of developing necrotizing enterocolitis is significantly lower when combining mother's own and pasteurized donor human milk. Improving the intake of mother's own and/or donor human milk results in small improvements in morbidity in this population (Miller et al., 2018). Parker et al. (2021) described in detail the dose-response relationship when providing mother's own milk for hospitalized very low birth weight infants; exposures of human milk were variable across the studies, but results point to a strong association between higher doses of mother's own milk with improved health benefits.

See Chapter 9 for future research needs and priorities, including the need to test the efficacy and effectiveness of strategies for supporting the provision of donor human milk for sick and vulnerable infants, including those who are critically ill.

HOW BREASTFEEDING WORKS

Breastfeeding is a part of the evolutionary adaptations that play a role in ensuring human survival and ongoing health (Pérez-Escamilla et al., 2023; Quinn et al., 2023). Human infants are born in a highly immature state and experience a long period of postnatal maturation that corresponds with longer brain development compared with other primate species (Pérez-

³ GRADE is short for Grading of Recommendations Assessment, Development and Evaluation; it is a systematic approach to rating the certainty of evidence in systematic reviews and other evidence syntheses (Cochrane Collaboration, 2025).

Escamilla et al., 2023). They are particularly vulnerable and cannot survive on their own (Rosenberg, 2021; Rosenberg & Trevathan, 2016). In addition, unlike other primates, human infants are unable to cling to their mothers and must be carried. They are highly dependent on physiological coregulation. Close proximity and frequent breastfeeding help to meet human infants' nutritional and hydration needs and regulate their temperature, breathing, and heart rate (Tomori et al., 2022). The positive health outcomes associated with breastfeeding noted above have long-standing effects that outlast the time frame of breastfeeding and change the life course of the individual (Meek et al., 2020). In addition to the positive associations with health, breastfeeding may provide psychosocial benefits to the breastfeeding dyad, including opportunities for emotional bonding and the potential to regulate stress and mood (e.g., Alimi et al., 2022; Feltner et al., 2018).

Human milk production is the result of a neuroendocrinological regulated supply–demand process driven by the suckling frequency, duration, and strength of the infant (Geddes et al., 2021). When the infant suckles from the breast, nipple stimulation triggers neural impulses that signal the mother's hypothalamus to release prolactin-releasing hormone, which then stimulates prolactin release from the anterior pituitary gland and other hormones that are needed for milk synthesis in the mammary gland. The maternal hypothalamus serves a critical regulatory role for prolactin release because it also synthesizes dopamine, which when released to the anterior pituitary gland will inhibit prolactin release. In contrast when dopamine levels are lowered, as with certain medications or tumors, increased prolactin secretion results and may lead to overproduction or galactorrhea.

Nipple stimulation also signals the maternal posterior pituitary gland to release oxytocin, which is made in the maternal hypothalamus and stored in the posterior pituitary gland to be released into the maternal bloodstream. Once oxytocin reaches the mammary gland, the gland “squeezes” the myoepithelial cells surrounding the alveoli grape-like structures that contain the epithelial lactocytes where breastmilk is synthesized (Geddes et al., 2021). The squeezing of the myoepithelial cells is what allows the breastmilk to be ejected from the lactocytes into the milk ducts that converge in the nipple to feed the baby (Geddes et al., 2021). When the breasts are not drained, the maternal organism accumulates a substance, sometimes known as feedback inhibitor of lactation, that slows down milk production in the mammary gland; this is called the autocrine control of milk production. Thus, any interference with breastfeeding on cue, whether through caregiver-imposed nursing schedules or introduction of foods/fluids other than breastmilk, can interfere with milk establishment and maintenance (Geddes et al., 2021; Pérez-Escamilla et al., 2019, 2023). It is therefore crucial for mothers to breastfeed effectively by having their infants remove the milk from their breasts, or to express milk via another means such as a breast pump, to maintain milk production (Geddes et al., 2021).

Moreover, interactions between the breastfeeding dyad, in the context of their environment, provide the feedback mechanism that shapes the varying composition of milk over the course of the day and over the development of the child (Pérez-Escamilla et al., 2023). These interactions also play a crucial role in psychosocial development and maternal well-being. For example, oxytocin, a neuropeptide, may be inhibited by stress responses, such as release of corticosteroids or conditions of chronic stress, while at the same time, oxytocin has been found to modulate stress responses and may be in part the mechanism for decreased anxiety, improvement of maternal mental health, and increased ability to socially bond during breastfeeding (Hantsoo et al., 2023; Olff et al., 2013). Thus, while human milk is itself a

complex system, it needs to be examined in the context of the broader breastfeeding relationship (Pérez-Escamilla et al., 2023; Quinn et al., 2023).

BREASTFEEDING ACROSS THE LIFE COURSE

Part of the committee's task was to explore contributing factors that impact breastfeeding rates and access to breastfeeding services and supplies. To address this, the committee developed its report using a life course framework in recognition that various exposures across different stages of life can influence future chronic disease risk and other health outcomes (Lynch & Smith, 2005). This framework identifies multiple determinants (i.e., exposures) that may influence individual and community health, including biological and genetic, behavioral, economic, and social factors (Halfon & Hochstein, 2002) (see also Chapter 3 for the influence of social ecological factors on breastfeeding differences). In the case of lactation and breastfeeding, an infant and mother's health trajectories are influenced by exposure to both risk and protective factors, as well as their early life experiences, which can then influence breastfeeding and associated health outcomes at the population level. With this understanding in mind, the committee recognizes that the breastfeeding dyad progresses through a lactation journey, from preconception to birth to postpartum, return to school and work, and infancy, amid these intersecting influences. The committee identified critical inflection points across the life course that are specific to human lactation, breastfeeding, and the provision of human milk (Figure 2-1). Each of these inflection points presents both challenges and opportunities. Interventions at these points can create an enabling environment for breastfeeding that provides the best opportunities for women and families to achieve their personal breastfeeding goals. Such interventions can also improve national breastfeeding rates.

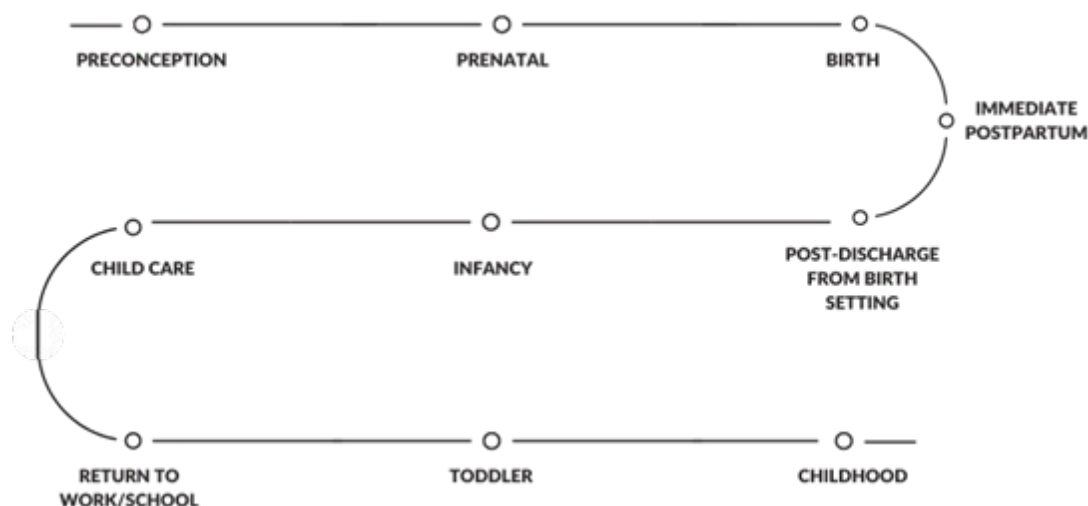


FIGURE 2-1 The life course journey of the breastfeeding dyad.

This journey map begins with the mother at preconception, then follows her and her infant prenatally, at birth, immediately postpartum, and post-discharge from a birth setting. It continues for both the mother and infant, and identifies critical time points that impact both, including securing childcare and returning to work or school; it includes ongoing child

development milestones from toddler to childhood. Protective and risk factors are described by inflection or time point, and additional considerations are presented for the sick or vulnerable breastfeeding dyad.

Preconception

Research demonstrates the importance of fetal health and parents' preconception health on a child's health (NASEM, 2019, 2024; Schrott et al., 2022). Recognizing the genetic, epigenetic, and environmental factors that affect health risks for the next generation (Cheng et al., 2016; Hanson & Gluckman, 2014), a growing body of literature documents the intergenerational transmission of health and disease and transgenerational effects of social and environmental exposures and epigenetics on health (Benincasa et al., 2024; Breton et al., 2021; Kioumourtzoglou et al., 2018; Scorza et al., 2019; Tan et al., 2024). As such the life course perspective prompts consideration of the health of the breastfeeding dyad today, the adults the current infants will become, and the new families they will create.

Opportunities to discuss breastfeeding begin before pregnancy. Education about the importance of breastfeeding for infants and mothers, its value for communities and society, and the developmental stages of breast development can be started in schools or at adolescent health care visits during pubertal changes (Jack et al., 2024). However, education curriculum and studies on their implementation are limited.

Well-women visits during childbearing years, which contain a breast evaluation, present an opportunity to discuss future reproductive plans and the importance of lactation and breastfeeding for a woman's health and the health of the baby, as well as opportunities for breastfeeding support, supplies, and counseling covered by the Affordable Care Act, if this is needed in the future (Health Resources and Services Administration, 2025).

Prenatal

For the mother, the process of human lactation includes distinct phases and begins during pregnancy (i.e. "lactogenesis stage I") (Geddes et al., 2021). In the first lactation phase, during pregnancy, the mammary glands are stimulated in preparation for breastfeeding the infant at birth. During this time, the placenta produces hormones responsible for the continued growth and differentiation of the tissue of the mammary gland, and the ductal system within the breast expands and branches in response to estrogen (Alex et al., 2020; Lawrence & Lawrence, 2021; Sriraman, 2017). During the prenatal period, progesterone is highly elevated and suppresses, to a large extent, the capacity of the mammary glands to secrete milk.

The prenatal period is a critical time for women to be provided health promotion strategies, including primary and secondary prevention through screening and management of risk factors (see Chapter 6) and related health conditions to promote and sustain a healthy pregnancy, birth, and breastfeeding journey (Howell, 2018). Known maternal or fetal conditions that may impact breastfeeding can also be identified during the prenatal period and appropriate counseling can be provided (Spatz et al., 2024; Stuebe, 2020). Some factors that may put a mother at risk for not meeting her personal breastfeeding goals include anatomic variations of the breast (Cruz & Korchin, 2007, 2010; Neifert et al., 1985; Stuebe et al., 2014), substance use disorders (Harris et al., 2023), mental health conditions (Buck et al., 2018; Dugat et al., 2019; Eagen-Torkko et al., 2017; Kitsantas et al., 2019; Martin-de-Las Heras et al., 2019; Miller-Graff et al., 2018; Wallenborn et al., 2018), diabetes (Mitanez et al., 2015), and both high and low

maternal body mass index (Chapman & Pérez-Escamilla, 1999; Chen et al., 2020; Garcia et al., 2016; Nommsen-Rivers et al., 2022).

Chronic disease prevalence among childbearing women is rising in the United States. From 2005 to 2014, the proportion of women who gave birth with at least one chronic condition increased from 6.7% to 9.2%, with Admon et al. (2017) reporting the highest rates among women living in rural or low-income zip codes and women insured by Medicaid. Some women with chronic health conditions, such as hypertension, endocrine and metabolic diseases, and obesity, for example, may face specific risk factors that make breastfeeding more challenging without additional or specialized clinical lactation support (Arenas et al., 2025; Stuebe, 2022). The management of these conditions may need to be tailored to accommodate the physical and metabolic demands of lactation. These conditions can influence lactation, and in turn, may also be affected by the act of breastfeeding itself (Stuebe, 2022).

Existing evidence-based and supportive policies, as well as best practices in the field, can mitigate these risk factors and support mothers as they prepare to breastfeed their infants (Jack et al., 2024). For example, systematic reviews demonstrate that women who receive breastfeeding prenatal education in health care offices have higher rates of initiation and duration, and are more likely to exclusively breastfeed; this is shown to be particularly effective when education is paired with postpartum support (Kehinde et al., 2023; Olufunlayo et al., 2019; Patnode et al., 2016; Pérez-Escamilla et al., 2023; Rollins et al., 2016; Tomori et al., 2022).

Jack et al. (2024) concluded that prenatal education is most effective and has the greatest impact on breastfeeding outcomes when guidance is focused on the benefits of breastfeeding on infant and maternal health, as well as practices and problem-solving to support early initiation of breastfeeding. In addition, domestic and international evidence demonstrates that educational programs are most effective when they promote breastfeeding self-efficacy in a structured format (Admasu et al., 2022; Araban et al., 2018; Behera & Kumar, 2015; Cangöl & Şahin, 2017; Fauzia et al., 2020; Galipeau et al., 2018; Mizrak et al., 2017; Modi et al., 2019; Öztürk et al., 2022; Sabancı Baransel et al., 2023; You et al., 2020; Zhao et al., 2021).

In addition, evidence demonstrates that midwives, lactation consultants, other lactation support providers, and doulas can positively affect breastfeeding initiation and duration, particularly in low-income, racially minoritized communities (see Chapters 3 and 6) (Bonuck et al., 2014; Hartman et al., 2012; Kehinde et al., 2023; Louis-Jacques et al., 2020; Reno, 2018). Research also shows that support from peer counselors and community health workers during the prenatal period is effective in improving breastfeeding outcomes in community-based settings (Khatib et al., 2023; Louis-Jacques et al., 2020; Reno, 2018; Sobczak et al., 2023) (see also Chapter 3).

Birth

Following birth and delivery of the placenta, the sharp decline in progesterone triggers secretory activation of the mammary glands (Geddes et al., 2021; Pérez-Escamilla & Chapman, 2001). This stage of lactation, still considered to be part of lactogenesis stage I, involves the secretion of strongly immune-active colostrum, or first milk, in small amounts (Geddes et al., 2021; Pérez-Escamilla & Chapman, 2001). The conditions and supports available during childbirth can set the stage for early breastfeeding. Andrew et al. (2022) reported that breastfeeding outcomes are better for women who have uncomplicated, term, vaginal births of vigorous, healthy babies.

Protective and Risk Factors

The Academy of Breastfeeding Medicine (ABM) has identified several characteristics of the birth experience and process that can be either protective or risk factors for breastfeeding (Holmes et al., 2013). For example, during labor and delivery, the continuous presence of a close companion, such as a spouse, partner, or other family member, is beneficial for the mother (Holmes et al., 2013). In addition, Kozhimannil et al. (2013) reported that the presence of a doula is associated with increased initiation and duration of breastfeeding and may mitigate risk factors associated with early cessation of breastfeeding, including surgical and pain-reducing interventions (see also Hodnett et al., 2013; Mottl-Santiago et al., 2008; Nommsen-Rivers et al., 2009). Risk factors for not initiating breastfeeding include birth complications and associated interventions, such as intrapartum analgesia, exogenous oxytocin, and ergometrine (Holmes et al., 2013; see also Beilin et al., 2005; Gizzo et al., 2012; Jordan et al., 2009; Montgomery et al., 2012).

Regarding birth attendants and settings, Vedam et al. (2018) found breastfeeding rates to be higher in states with laws and regulations that support midwifery integration in care. A National Academies committee examining maternal and newborn care in the United States found consistent correlations between birth setting and breastfeeding rates, with low-risk home and birth center deliveries associated with higher rates of breastfeeding initiation and exclusive breastfeeding 6–8 weeks after birth (NASEM, 2020). Less than 1% of women give birth at home and 0.52% in free-standing birth centers (MacDorman & Declercq, 2019). While the report acknowledges that variation in breastfeeding outcomes by birth setting is at least partially attributable to selection bias, as individuals choosing home or birth center births are often highly committed to breastfeeding, the report also suggests that the “wellness-oriented, individualized, relationship-centered approach of midwifery care across home, birth center, and hospital settings” is a contributing factor for differential outcomes (NASEM, 2020, p. 207). Interestingly, Gregory et al. (2021), analyzed data from the National Vital Statistics System and reported an increase in home births during the COVID-19 pandemic. They report that in 2020, the rate of home births increased by 19% (Gregory et al., 2021) and interest in home birth searches spiked significantly after declaration of the COVID-19 pandemic occurred (Cheng et al., 2022).

Complicated Deliveries

In the United States, 31.8% of women underwent induction of labor in 2020 (Simpson, 2022), and 32.3% birthed by C-section in 2023 (National Center for Health Statistics, 2025).

A population-based study in Australia of infants born at or before 37 weeks found that interventions in labor, such as C-section, epidural anesthesia, and infusion of oxytocin, were associated with higher rates of formula supplementation in the hospital and lower rates of breastfeeding at 3 and 6 months postpartum (Andrew et al., 2022). Of note, this study did not include information on maternal health conditions, such as diabetes and hypertension, that can both require induction of labor and affect breastfeeding outcomes.

More difficult labors are associated with early breastfeeding difficulties. In a study among low-risk mothers in northern California (Dewey et al., 2003), longer labor and longer intervals without sleep were associated with later onset of lactogenesis II, the transition from colostrum to milk production. In adjusted models, stage II of labor longer than 1 hour was associated with delayed onset of milk production and suboptimal infant breastfeeding behavior. As noted above, support from companions and doulas may help mitigate against some of these risk factors (Holmes, 2023; Kozhimannil et al., 2013).

Cesarean birth is associated with lower rates of early initiation of breastfeeding; exclusive breastfeeding at hospital discharge; and exclusive breastfeeding at 1, 3, and 6 months postpartum (Ulfa et al., 2023). Promising practices for improving maternal experience and breastfeeding outcomes following cesarean birth include additional support (Beake et al., 2017) and skin-to-skin care in the operating room following C-section (Frederick et al., 2020).

As previously mentioned, postpartum hemorrhage is a leading cause of maternal morbidity, and higher blood loss at delivery is associated with lower rates of fully breastfeeding in the first postpartum week and at both 2 and 4 months postpartum (ACOG, 2017; Del Ciampo & Del Ciampo, 2018; Thompson et al., 2010; Victora et al., 2016). U.S. birth certificate data from 2016 to 2023 shows an association between maternal transfusion and lower rates of breastfeeding at discharge (69.9% vs. 74.8% [CDC Wonder, 2023]). An analysis of the ARRIVE⁴ trial conducted by Roberts et al. (2025) found that postpartum hemorrhage with transfusion was associated with lower odds of exclusive or any breastfeeding at 4–8 weeks postpartum. For example, a cohort study of women with postpartum hemorrhage, defined as more than 1500 mL of blood loss, found that higher blood loss and longer delays in initiation predicted lower full breastfeeding rates at 1 week postpartum (Thompson et al., 2010). Additional lactation support in the intrapartum period and beyond have been recommended to address breastfeeding challenges among those experiencing postpartum hemorrhage (Roig et al., 2024; Thompson et al., 2010).

In summary, more difficult labor, C-section, and heavy bleeding after birth predict more breastfeeding difficulties and earlier weaning. Judicious use of interventions in labor, as well as opportunities for early skin-to-skin contact and breastfeeding initiation, and more support for breastfeeding dyads with difficult births, can help more women achieve their infant feeding goals. Chapter 6 describes best practices for clinicians and health care systems to support the breastfeeding dyad in the ambulatory or hospital setting.

Immediate Postpartum

Lactogenesis stage II, or the secretory stage, begins around 48–72 hours after birth, with the onset of lactation or coming to volume. In this stage, more copious amounts of milk secretion begin, although there is wide variability among women (Geddes et al., 2021; Pérez-Escamilla & Chapman, 2001).

Risk and Protective Factors

Postpartum care provides an opportunity to identify and potentially mitigate additional birth- and neonatal-related risk factors for inadequate milk production, delay in the secretory stage, and early breastfeeding cessation. These risk factors include:

- low birth weight,
- lower gestational age,
- stressful or prolonged labor and birth,
- unscheduled C-section,
- postpartum hemorrhage,
- delayed first breastfeeding episode,
- breastfeeding or pumping fewer than eight times in 24 hours,
- formula supplementation within the first 48 hours, and
- separation of the dyad at birth.

(See Brown & Jordan, 2013; Chapman & Pérez-Escamilla, 1999, 2012; Dewey et al., 2003; Furman et al., 2002; Grajeda & Pérez-Escamilla, 2002; Hobbs et al., 2016; Huang et al., 2020; McCoy & Heggie, 2020; Meier et al., 2017; Parker et al., 2021; Salariya et al., 1978; Scheeren et al., 2022; Thompson et al., 2010).

A significant number of women experience a delayed onset of lactation (>72 hours after birth), which is a risk factor for shorter exclusive and any breastfeeding durations (Feldman-Winter et al., 2020; Pérez-Escamilla et al., 2019). This is especially the case for mothers of preterm or critically ill infants requiring specialized care in neonatal intensive care units (Hoban et al., 2018; Juntereal, 2024; Mago-Shah et al., 2023; Parker et al., 2021). However, many factors associated with delayed lactation can be prevented or mitigated.

Rooming In During the hospital stay, mother–infant rooming-in on a 24-hour basis is associated with optimal breastfeeding initiation (Holmes et al., 2013). Health care providers may need to assist mothers with positioning and attaching their babies at the breast, and those who delivered by C-section may need additional help to attain comfortable positioning. Holmes et al. (2013) recommend that at least once every 8–12 hours after delivery a trained lactation support provider assess and document breastfeeding effectiveness until the breastfeeding dyad is discharged. This clinical protocol notes that “peripartum care of the dyad should address and document infant positioning, latch, milk transfer, baby’s weight, clinical jaundice, and any problems raised by the mother, such as nipple pain or the perception of an inadequate breastmilk supply” (Holmes et al., 2013, p. 270; see also Feldman-Winter et al., 2020).

Today, rooming in is the predominate norm in hospital settings (Centers for Disease Control and Prevention [CDC], 2024; see Chapter 6). However, the CDC (2024) reports that early separation remains a practice in 10% of hospitals, and 16% of hospitals have not implemented rooming in. Flacking et al. (2012) noted that infants who are preterm or require additional care may face more significant separation while they are cared for by a pediatric team; the mother may be recovering in the postpartum unit or discharged while the infant is still hospitalized. For neonatal intensive care, family-centered, single-family room design is an opportunity to ensure that mothers and infants are kept together, facilitating more connected models of care, better breastfeeding outcomes, and better outcomes for parents (e.g., European Standards of Care for Newborn Health, 2019; van Veenendaal et al., 2019, 2020). While promising, and although efforts to maintain proximity in the neonatal intensive care unit have increased, the committee notes that the United States has not yet adopted models of family-centered, single-family room design on a large scale.

Skin-to-Skin Care The ABM advises that healthy newborns

should be given directly to the mother for skin-to-skin contact until after the first feeding. The infant may be dried and assigned Apgar scores, and the initial physical assessment may be performed as the infant is placed with the mother. ... Delaying procedures such as weighing, measuring, administering eye prophylaxis as well as vitamin K, up to 6 hours after birth, and the initial bath enhances early parent–infant interaction. Infants are to be put close to the breast, as soon after birth as is feasible for both mother and infant, to allow for a latch and feeding, ideally within an hour of birth. (Holmes et al., 2013, p. 470)

There is substantial evidence that early skin-to-skin contact facilitates early breastfeeding initiation and is associated with increased duration of any and exclusive breastfeeding (see

Bramson et al. 2010; Bystrova et al., 2007; DiGirolamo et al., 2008; Hung & Berg, 2011; Mahmood et al., 2011; Mikiel-Kostyra et al., 2002; Moore et al., 2016; Murray et al., 2007; Thukral et al., 2012).

Uninterrupted skin-to-skin care immediately following birth improves breastfeeding outcomes. A meta-analysis of randomized controlled trials by Moore et al. (2016) found that placing infants with the mother skin to skin for the first 60–90 minutes following birth increased breastfeeding duration by 64 days. In addition, skin-to-skin care and early initiation of breastfeeding are a core tenet of the Ten Steps to Successful Breastfeeding (WHO & UNICEF, 2018). The AAP has delineated key aspects of safe implementation of skin-to-skin care in the delivery setting, including continual observational monitoring by trained staff so that sudden changes to maternal or newborn status can be addressed immediately (Feldman-Winter et al., 2016). In addition, CDC monitors hospital implementation of skin-to-skin care as part of the Maternity Practices in Infant Nutrition and Care (mPINC) Survey (see Chapter 4 for additional surveillance measures).

In 2007, 40.4% of hospitals reported that most patients experienced mother–infant skin-to-skin contact for at least 30 minutes within 1 hour of an uncomplicated vaginal birth (see Figure 2-2). The prevalence of this practice increased to 83% in 2015 (Boundy et al., 2022). After 2017, mPINC revised the survey to assess skin-to-skin contact for at least 1 hour after vaginal birth; on the most recent survey, 70% of hospitals reported that this was their standard of care (Boundy et al., 2022).

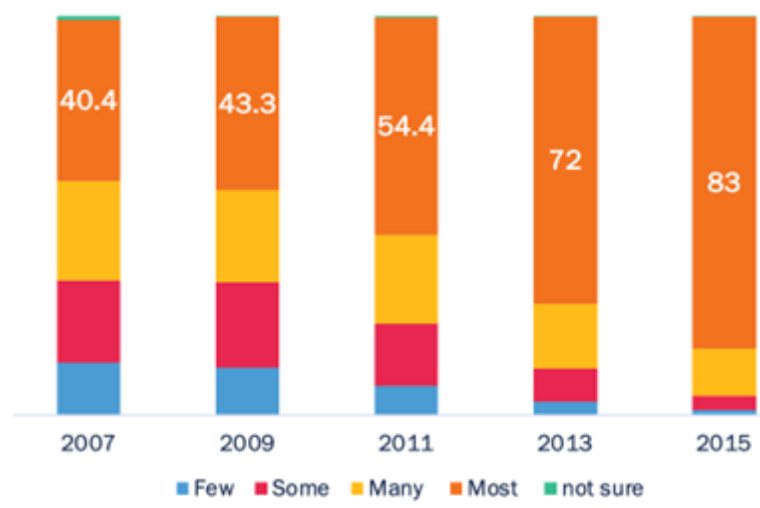


FIGURE 2-2 Hospitals reporting mother–infant skin-to-skin contact for at least 30 minutes within 1 hour of uncomplicated vaginal birth.

SOURCE: Adapted from Boundy et al., 2018.

Severe Maternal Morbidity

Mothers experiencing severe maternal morbidity require interdisciplinary care to address acute, life-threatening conditions (Bingham et al., 2011). Severe maternal morbidity and mortality is a composite measure of 20 unexpected outcomes of labor and delivery, quantified using maternal diagnosis codes from the birth hospitalization. Rates of severe maternal morbidity and mortality in the United States have continued to rise. According to Reid (2024), rates

increased 40% overall from 2016 to 2021 and by 20% when excluding delivery stays with COVID-19.

Often, a mother with severe maternal morbidity is transferred from maternity care to an intensive care unit (ICU), where she is separated from her infant and may be intubated or sedated. This separation can present challenges for breastfeeding (Bartick et al., 2021). ICU staff may not be familiar with lactation physiology and may require assistance to express milk to prevent engorgement and/or mastitis. By regularly expressing milk until the mother is awake and alert, the critical care team can protect her right to decide whether to breastfeed her infant. Facilitating breastfeeding can be an important part of easing the psychological trauma of a maternal ICU admission (Hinton et al., 2015; Intensive Care Society, 2018).

ABM guidelines on supporting breastfeeding for hospitalized mothers include allowing the infant to room in with the mother, providing equipment for milk expression, and ensuring that the care team has access to evidence-based information on medications in lactation (Bartick et al., 2021).

Infant Loss

When a mother is pregnant, her body is typically biologically prepared to lactate. Secretory differentiation begins in the second trimester with lactogenesis stage I. Thus, even if a mother experiences a second trimester pregnancy loss, an intrauterine fetal death, or the death of a child immediately post birth, the physiologic process of lactation will occur normally (Carroll et al., 2020). With the delivery of the placenta and the associated hormonal impact, the body will likely begin converting to lactogenesis stage II. This process of secretory activation will occur even without an infant suckling at the breast.

Hospitals or birth settings may not adequately prepare mothers for this experience and how to navigate these physical symptoms and suppress lactation (see Britz & Henry, 2013; Carroll et al., 2014; Redshaw et al., 2014). Carroll et al. (2020) described examples of advice and techniques for milk suppression, including nonpharmacological means to relieve symptoms, as well as pharmacological pain relief options. In addition, they present a framework based on supporting evidence for online health information, including acknowledging lactation after infant loss, describing breast changes associated with the production of human milk, advice on alleviating symptoms, suppression options, and sustained milk expression options (Carroll et al., 2020).

Not all families may wish to suppress lactation following a pregnancy loss or death of a child. For example, some mothers may wish to initiate milk expression after a second trimester loss, an intrauterine fetal demise, or immediate death of a child, as part of the grieving process (Paraszczyk et al., 2022). Cole et al. (2018) found that parents are not generally given information about milk donation and navigating this journey. Families may need to determine how to get a breast pump, as insurance may not provide one if there is not a living child. Because of the challenges that bereaved parents may go through to continue their lactation journeys, additional research in this population would be helpful to better support families' differing experiences.

Inducing Lactation

Some parents may desire to induce lactation even in the absence of a pregnancy. Inducing lactation, though possible for some nonbirth parents, requires significant time, effort, and financial investment, in addition to the desire and commitment to make it possible. Parents must

plan far in advance and seek out support from qualified medical professionals. Those who are inducing lactation need medication and technology to support their lactation journey. A scoping review found limited evidence regarding how best to induce lactation (Cazorla-Ortiz et al., 2020). The ABM provides recommendations for nonbirth parents who wish to induce lactation, as well as an overview of the use of galactagogues in initiating or augmenting maternal milk production (Brodribb & ABM, 2018; Ferri et al., 2020).

Additional Considerations for the Sick or Vulnerable Infant

About 7.5% of infants are hospitalized in the first year of life (Weiss et al., 2022), most commonly for acute respiratory conditions. Although hospitalization can disrupt breastfeeding, interventions to promote ongoing lactation and ensure evidence-based staff support can reduce unwanted weaning (Ben Gueriba et al., 2021). Moreover, pediatric critical care units can develop breastfeeding and breastmilk storage policies to support the breastfeeding dyad (Bartick et al., 2021).

Breastfeeding medically complex children presents multiple challenges. In a narrative synthesis, Hookway et al. (2021) reported when an infant is hospitalized, mothers must navigate the logistics of expressing, storing, and delivering milk, as well as the psychological stress of separation and anxiety. The infant's acute condition can affect their ability to feed, as can the underlying chronic condition. Lack of specialized breastfeeding support, inadequate knowledge of health team members, and uneven access to specialized equipment were additional barriers identified by the authors (Hookway et al., 2021). There are multiple levels of neonatal care, and the availability of breastfeeding support and donor human milk⁴ varies by level (Anstey et al., 2024).

Donor Human Milk

In the United States, donor human milk is primarily regulated through nonprofit milk banks that follow strict safety guidelines. Human Milk Banking Association of North America (HMBANA) is a not-for-profit milk bank that provides standards for donor human milk banking. For example, potential donors may undergo health screenings, and donated milk is pasteurized and tested for contaminants. Most donor human milk is provided to preterm and critically ill infants who are in the hospital NICU. Currently, demand for donor human milk exceeds the available supply in the United States (see Bai & Kuscin, 2021; Hamilton & Middlestadt, 2024). In 2024, HMBANA-affiliated milk banks dispensed 11 million ounces of pasteurized donor human milk, a 10% increase from 2023 (HMBANA, 2025). State Medicaid programs and other insurers may pay for donor human milk when medically necessary.

⁴ *Donor human milk* is pasteurized human milk provided by lactating parents who donate their surplus milk to milk banks. It is primarily used for medically fragile infants, especially preterm babies in neonatal ICUs, when a mother's own milk is unavailable or insufficient. As described earlier in the chapter, donor human milk confers protection from necrotizing enterocolitis, a life-threatening condition, to preterm infants. At the time of this report, the Food and Drug Administration (FDA, 2018) advises against informal milk sharing; however, the practice continues in the United States (Bressler et al., 2020; Martino & Spatz, 2014; McNally & Spatz, 2020; Spatz, 2016). Health care providers can help parents make informed decisions, informed by position statements and guidance from the ABM and the American Academy of Nursing and Academy of Breastfeeding Medicine (Sriraman et al., 2018).

It is important to note that donor milk is not a replacement for a mother's own milk but can serve as a bridge to allow milk supply to be established, if the parent is able to lactate. Encouraging direct breastfeeding before discharge from the neonatal ICU may help prolong breastfeeding duration. As discharge approaches, health care providers must decide on the most suitable post-discharge feeding plan to ensure continued nutrition and support for the infant (Noble et al., 2018).

Post-Discharge from Birth Setting

The management of lactation during the first few weeks postpartum is essential for establishing a milk supply (Institute of Medicine, 1991). Through a biologically complex process, women increase their human milk production to about 750 milliliters daily on average by 3 months after birth (Geddes et al., 2021). Most women with multiple births have the capacity to produce enough milk for all their offspring (Flidel-Rimo & Shinwell, 2006), highlighting the enormous plasticity of the human lactation process.

The ABM recommends that breastfed infants see a health care provider within 24–72 hours following discharge from the hospital or at 3–5 days old to assess the infant's well-being and whether breastfeeding has been established successfully (Holmes et al., 2013; see also AAP, 2010; Hoyt-Austin et al., 2022; Labarere et al., 2005; Section on Breastfeeding, 2012).

However, reflecting the current fragmentation of care and the need for coordination, most mothers in the United States receive postpartum care from an obstetrician, family physician, midwife, or nurse practitioner, while their infant is cared for by a pediatrician who works in a different office, which may use a different electronic health record system. This can create challenges for the breastfeeding dyad. Lactation is a complex, two-person biosocial system, ultimately involving maternal milk production and infant milk extraction and ingestion usually through close bodily interaction (see Chapter 6).

Lactation problems post-discharge from the birth hospital are common and often reflect the challenges and structural barriers to lactation encountered within the health care system (see Chapter 6). This may result in problem-oriented visits to a doctor or a lactation support professional who may inappropriately recommend supplementation or weaning—outcomes that can often be prevented with effective care. Effective management by a mother's physician, advanced practice professional, or lactation support provider is necessary to protect breastfeeding, especially exclusive breastfeeding. Currently, no universal structure supports payment of lactation care for problem-oriented visits if they are not provided by a physician or advanced practice professional. Some, but not all, insurance companies reimburse a certain number of visits to lactation consultants; only certain states offer Medicaid payment for lactation consultants (see Chapter 7).

During the first 2 weeks after birth, breastfeeding 8–12 times during a 24-hour period is associated with establishment of adequate milk production (Geddes et al., 2021; Hill et al., 2005; Kent et al., 2011). However, infants usually feed more frequently than this; close contact with frequent opportunities to breastfeed also helps establish successful breastfeeding (Zimmerman et al., 2023). Additionally, peer support has been found to promote breastfeeding success (Holmes et al., 2013; Renfrew et al., 2012; Sudfeld et al., 2012) (see Chapter 3).

ACOG examined factors that can interfere with women achieving their breastfeeding goals (Breastfeeding Challenges, 2021). One factor that can lead to early and undesired weaning includes nipple injury or persistent pain during breastfeeding. There are many possible contributors to pain during breastfeeding, and obstetrician-gynecologists or other obstetric care

professionals that women see for post-birth care can play an important role in diagnosing and treating the causes of pain to foster continued breastfeeding (Breastfeeding Challenges, 2021). As pain during breastfeeding can be associated with postpartum depression, screening for postpartum depression is an important component of assessment for these patients (Breastfeeding Challenges, 2021; see also Amir, 1996; Committee Opinion No. 658, 2016; Watkins et al., 2011).

Self-reported insufficient milk supply is another risk factor for early weaning (Segura-Pérez et al., 2022). For mothers concerned about having adequate milk supply, providers and clinicians need to evaluate whether underlying physiologic or psychosocial issues are contributing to the perception of inadequate supply. Mothers can be reassured that indicators of adequate milk supply include feeding frequency of 8–12 times per day on average, steady weight gain after the infant is 4–5 days old, and an average of 6–8 wet diapers per day (Breastfeeding Challenges, 2021). Infants typically gain back normal post-birth weight loss by 10–14 days after birth; care providers need to alleviate mothers' concerns that the infant being below their birth weight is an indicator of inadequate milk supply if the infant is not yet 2 weeks old. Clinicians can use standardized tools, such as the Newborn Weight Tool (NEWT), to assess growth trajectories and take into consideration birth factors such as fluids administered to the mother before and during birth, and cesarean delivery, that may yield greater weight-loss patterns in infants (Flaherman et al., 2015). Also, feedings more frequent than 8–12 times per day are not necessarily an indicator of insufficient milk supply, as human milk is easily digested (Breastfeeding Challenges, 2021). When low milk supply occurs, supporting mothers in more frequent direct breastfeeding or milk expression (e.g., pumping) can often help to increase supply (Breastfeeding Challenges, 2021).

Infancy

A critical element of successful breastfeeding relates to the mother's ability to interpret infant behavior and to respond to their child's needs, which creates feedback loops of coordination between the dyad (Pérez-Escamilla et al., 2023). For instance, responding to babies' need to be close and to be fed frequently simultaneously provides reassurance, soothing, and security, and is a major determinant of early breastfeeding success, which also plays a role in exclusive breastfeeding and breastfeeding duration (see Box 2-1). Infants must be permitted to feed on cue, as limiting the time that an infant is at the breast can be detrimental to establishing adequate milk supply. Infants usually release the breast spontaneously or fall asleep when they are satiated (Holmes et al., 2013). Proper postnatal care can be protective for breastfeeding. As noted in Box 1-3, parental expectations of prolonged infant sleep periods may be unrealistic and can be a risk factor for breastfeeding success, particularly if such beliefs lead parents to engage in sleep training for infants younger than 6 months of age (Zimmerman et al., 2023).

BOX 2-1

Physiological Infant Care

Young infants require frequent contact and feedings day and night. This box provides a protocol for managing normal physiology for the breastfeeding dyad.

Normal Infant Feeding Patterns

Newborn infants breastfeed approximately 8–12 times per 24 hours; this does not always occur at regular intervals. Responsive feeding is advised, as feeding according to infant cues can ensure that they receive their needed daily nutrition. Infants can self-regulate their nutritional intake by nonnutritive and nutritive suckling. Continuous proximity and skin-to-skin contact with mothers or parents help with infant temperature, breathing, and heart rate regulation.

Normal Infant Sleep Patterns

Newborn infants are born without a functional circadian clock; melatonin passed through human milk can help establish an infant's circadian rhythm, as can exposure to daytime activities and differentiating them from nighttime (e.g., avoiding artificially darkening rooms for daytime sleep). Expectations of prolonged infant sleep periods are unrealistic, and sleep training infants younger than 6 months of age can cause significant infant stress and parental distress, and it can impact breastfeeding because of the physical separation of a mother and her infant during the night. The Academy of Breastfeeding Medicine's protocol is focused on infant sleep patterns as they relate to breastfeeding, which may differ from existing American Academy of Pediatrics recommendations on sleep training.

Supporting Physiological Infant Care

At times, cultural expectations of typical infant behavior and normal physiology are misaligned. Strategies for reducing such misalignment may include addressing expectations that infants sleep through the night, or that solitary sleep without breastfeeding for infants is typical or desirable. In reality, infant sleep is fragmented and breastfeeding infants tend to sleep as well as or better than their formula-fed counterparts. Strategies that support this care and help mothers maximize their recovery, rest, and sleep, include support from fathers, partners, and family members, paid family and medical leave, and accessible and affordable child care.

SOURCE: Zimmerman et al., 2023.

As noted in the box above, community support plays a critical role in shaping breastfeeding success by influencing the environments in which families live, work, and seek care. While clinical and workplace supports are essential, community-based efforts help ensure

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that breastfeeding is normalized, socially supported, and practically feasible across diverse settings (e.g., Rhodes et al., 2024) (see Chapter 4 for additional discussion).

Childcare

For many families, attempting to secure childcare before returning to work or school can produce increased feelings of stress and anxiety, as well as increases in reported depressive symptoms (Armstrong et al., 2022; Ceballos et al., 2017; Goelman, 2014; Heck, 2021; Laughlin, 2013). Previous research by Armstrong et al. (2022) and Beck (2001) has shown that access to childcare may help mitigate negative effects of sleep deprivation and childcare stress, and support maternal mental health. In a series developed for the Center for American Progress, Malik et al. (2018) reported that approximately 50% of Americans live in childcare deserts. The authors defined *childcare desert* as an area or community with an inadequate number of licensed childcare providers and facilities (Malik et al., 2018). Given the dearth of accessible and affordable childcare options, newly postpartum mothers and families may spend a large amount of time and resources trying to identify a childcare provider who best fits their infants and families' needs.

Reliable and affordable childcare is critical for supporting breastfeeding outcomes, particularly as families navigate the postpartum period. Childcare plays a dual role: it supports children's early development and enables parents to remain engaged in the workforce (Schneider & Gibbs, 2023). However, the high cost of care and financial instability of providers pose significant challenges (U.S. Department of Labor, 2024). Childcare settings can either support or hinder breastfeeding, depending on their practices. Breastfeeding-friendly environments that store and handle breastmilk safely, feed infants responsively, delay solid food until 6 months, communicate supportively, and provide lactation spaces for parents help protect breastfeeding continuity. Conversely, when these elements are absent, families are at greater risk of not achieving their breastfeeding goals. Chapter 8 further examines the intersection of childcare and the return to work or school, a critical transition period for lactating parents.

Return to Work or School

Given the need for consistent contact between mothers and children to support and sustain breastfeeding journeys, the transition for women back to the workforce or school presents a significant challenge. In the United States, the absence of a national paid family leave policy means that many mothers return to work within weeks of giving birth (see Chapter 8).

Maternal employment has been identified as a structural determinant of infant feeding decisions across the globe (Baker et al., 2023; Perez-Escamilla et al., 2023). Low-wage workers experience more pronounced differences related to workplace accommodations and policies (California WIC Association, 2025).

The process of returning to work or school after pregnancy varies widely depending on individual circumstances, employer policies, and institutional support systems. For many, this transition requires flexibility and support to ensure a smooth adjustment to new routines. Working mothers encounter distinct challenges in breastfeeding, resulting in lower rates of initiation and shorter durations than those for nonworking mothers (Chatterji & Frick, 2005; Duthei et al., 2021). These challenges persist despite evidence highlighting the health advantages of breastfeeding for both mother and child (see Chapter 1), as well as the diverse strategies available for supporting breastfeeding women in the workplace (e.g., Litwan et al., 2021).

Return to work or school can be a difficult experience for women, as they must learn to blend breastfeeding and/or pumping into the work or school environment (e.g., Gabriel et al., 2020; Little & Masterson, 2021). Many workplaces lack adequate facilities for expressing milk or policies that accommodate breastfeeding needs (Lowenfels et al., 2024; Kozhimannil et al., 2016). Health insurance and paid leave can significantly impact how a new parent manages their physical and mental health and financial well-being during pregnancy and postpartum. Additionally, understanding whether paid leave is available—and for how long—can make a significant difference in planning for the postpartum period and balancing work or educational obligations with caregiving responsibilities.

Given these challenges associated with reentering the workforce (or school), this period for working mothers has been described as an “emotional whirlwind” (Spiteri & Xuereb, 2012, p. 206) and dubbed *the fifth trimester* (Brody, 2018), during which “the working mother is born” (Chawla et al., 2024, p. 2); she must navigate how her professional and caregiving (i.e., childcare, family) roles work together (i.e., enrich) or conflict (Gabriel et al., 2020). Working mothers may also be grappling with mental health challenges associated with motherhood, such as postpartum depression (Chawla et al., 2024; Gabriel et al., 2023), which can be compounded by difficulties transitioning back to school or work. Indeed, during this time, mothers who are employed may feel as though they are violating both “ideal worker norms” and “ideal mother norms,” not being fully available to either their work role or their motherhood role (Ladge et al., 2015; Little & Masterson et al., 2023).

Toddler

The AAP and WHO (2023) recommend continuing breastfeeding after introducing solid foods as long as mutually desired for up to 2 years or beyond (Meek et al., 2022). Protective factors for continuing breastfeeding into toddlerhood include flexibility to accommodate the toddler’s variable desire for breastfeeding, such as seeking more frequent feeding during times of stress or transition (e.g., La Leche League, 2020). Risk factors for earlier-than-desired weaning may include poor or inadequate support during birth and in the postnatal period, the demands of returning to work, as well as the influence of commercial milk formula and toddler milk marketing (Pérez-Escamilla et al., 2023). It may also result from disrupted lactation, which may be attributed to untreated risk factors (e.g., see Stuebe et al., 2014) or other structural influences.

Weaning can also be a personal decision, and it differs by mother and family (CDC, 2024). Children and parents may be ready to wean from breastfeeding at different times; some children gradually lose interest as they eat more solids, while others stop suddenly; parents’ readiness can vary as well. Weaning may be a gradual process, conducted with or before the introduction of complementary foods. Consultation with a health care provider is essential to ensure that a child’s nutritional needs are adequately met.

Childhood

Physical development related to lactation begins during childhood. One of the earliest signs is breast development, known as thelarche, which typically starts around ages 9–10 years but can begin as early as 8 years (Geddes et al., 2021). This process includes increased pigmentation of the areola and the formation of a small mound of tissue under the nipple called the breast bud. Breast development usually unfolds over a span of 3–3.5 years and begins

approximately 1–2 years before the onset of menstruation (Geddes et al., 2021). During puberty, the mammary ducts begin to grow into the mammary fat pads. Once menstruation begins and ovulation occurs, the hormone progesterone stimulates some development of the lobuloalveolar structures (i.e., the milk-producing components of the breast). These alveolar clusters enlarge during the luteal phase of the menstrual cycle and regress at the start of menses (Geddes et al., 2021). This cyclical development lays the groundwork for the breast’s ability to produce milk in response to pregnancy and childbirth later in life.

Attitudes toward breastfeeding begin to form early in life, often during childhood. The 2003 WHO/UNICEF Global Strategy for Infant and Young Child Feeding highlighted the importance of engaging school aged children and adolescents to positively improve perceptions and raise awareness about breastfeeding (WHO/UNICEF, 2023). Children’s perceptions of infant feeding are shaped by what they observe in their homes, communities, and especially in media, where bottle feeding is often more visible than breastfeeding (see Chapter 4). These early exposures help establish what children view as “normal” or socially acceptable. As such, integrating breastfeeding into school-based education on human development, such as health or life sciences, can help promote more informed and positive attitudes toward breastfeeding (Angell et al., 2011). Educational efforts that include realistic portrayals of breastfeeding can also challenge stigma and reinforce the role of breastfeeding as a natural and beneficial practice. Broader sociocultural factors, including family norms, cultural beliefs, and public attitudes, further shape how individuals view and experience breastfeeding. For an in-depth discussion of these influences, see Brown (2018) and Tomori et al. (2018).

Adulthood

In adulthood, community-level and interpersonal influences affect an individual’s views about breastfeeding. As discussed in greater detail in Chapter 3, cultural influences, community attitudes, family norms, and traditions can influence the extent to which individuals hold a positive attitude toward breastfeeding (see also Brown, 2018; Quinn et al., 2023; Tomori et al., 2018). As described above, breastfeeding is associated with a reduced risk of mothers developing certain chronic diseases as well as improvements in postpartum recovery.

Conclusion 2-1: Human lactation is a multifaceted physiological process that is influenced by a range of factors operating across the life course. The capacity to breastfeed, and the outcomes associated with breastfeeding, are determined by a combination of biocultural mechanisms and external factors, including clinical practices; health system structures; and social, structural, and environmental conditions experienced throughout an individual’s and family’s life. Preconception health, prenatal care, birth experience, postpartum recovery, and the return to work or school each represent critical windows in which the foundations for optimal breastfeeding can be laid.

There are numerous challenges to breastfeeding across the life course, but each inflection point identified above also presents opportunities to create an enabling environment for breastfeeding. The scientific literature reveals opportunities for timely and effective intervention or support. For example, prenatal breastfeeding education, continuity of lactation support providers, family-centered care at birth, paid leave, and supportive return-to-work or school policies have all been shown to increase breastfeeding initiation and duration (see Chapters 3, 6, 7, and 8). Special considerations are warranted for vulnerable breastfeeding dyads, including

those affected by infant and maternal morbidity and mortality, as well as those pursuing induced lactation.

CURRENT STATUS OF BREASTFEEDING IN THE UNITED STATES

As noted in Chapter 1, the United States has been unable to meet the modest breastfeeding targets set by Healthy People 2030. This section presents data on breastfeeding initiation in the United States and trends in breastfeeding duration and exclusivity between 2014 and 2021. It then explores differences in breastfeeding by population group and discusses protective and risk factors across the life course. Chapter 3 focuses on structural determinants that influence these community-level differences, as well as historical shifts in the cultural perception of breastfeeding.

Breastfeeding Initiation

Breastfeeding initiation, or the percentage of live infants “receiving any breast milk or colostrum between delivery and discharge from the birth facility or birth certificate completion for home births,” varies by county and state, and ranges from 22% to 90% (CDC, 2024a, para. 3). The national average of breastfeeding initiation, using birth certificate data from the National Vital Statistic System (NVSS), is estimated to be 83.2% (CDC, 2022) (see Figure 2-3).

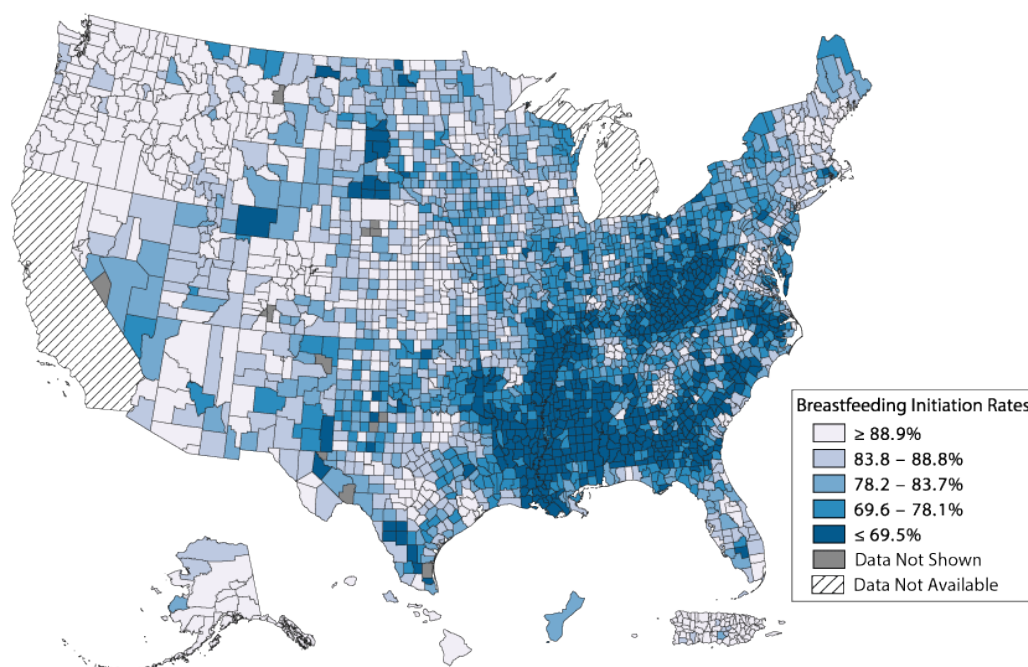


FIGURE 2-3 U.S. birth certificate breastfeeding initiation data by county, 2018–2019.

NOTE: Birth certificate breastfeeding initiation data were not available for California, Michigan, American Samoa, or the U.S. Virgin Islands. In addition, to prevent identification of individuals, data are not shown for counties or county equivalents if the total number of infants or the number of infants initiating breastfeeding is fewer than 10; the exact breastfeeding rate is not displayed if it is greater than or equal to 90.0% and the total number of infants is fewer than 50.

SOURCE: CDC, 2025a.

Breastfeeding Exclusivity and Duration

In addition to the NVSS data on initiation, the National Immunization Survey-Child gathers information on breastfeeding initiation, exclusivity, and duration (CDC, 2024b). According to CDC, 84.1% of infants born in 2021 were ever breastfed or initiated breastfeeding. However, by 6 months, only 59.8% of infants were still breastfeeding or receiving human milk, and at 12 months, this number dropped to 39.5% (CDC, 2022) (Figure 2-4). Sixty percent of mothers who begin breastfeeding report that they stop sooner than they planned (Diaz et al., 2023; Odom et al., 2013). These figures demonstrate that while most mothers initiate breastfeeding, many face barriers that prevent them from meeting national breastfeeding recommendations or their own breastfeeding intentions.

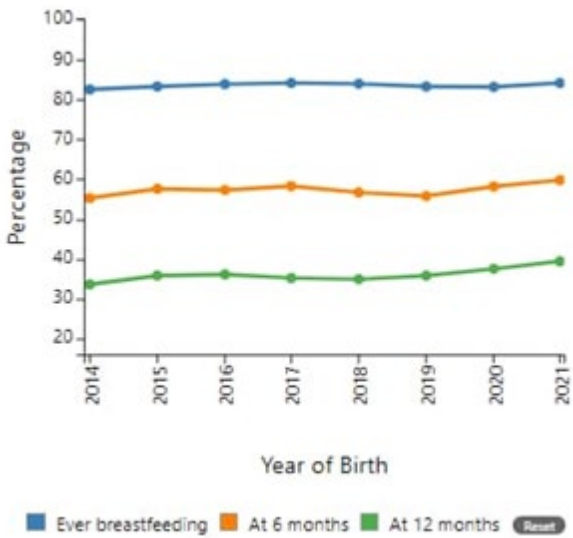


FIGURE 2-4 Percentage of U.S. children who were breastfed, by birth year, 2014–2021.
SOURCE: CDC, 2025b.

Exclusive breastfeeding falls sharply each month postpartum; in 2021, 46.5% of mothers reported exclusive breastfeeding at 3 months, and 27.2% at 6 months (see Figure 2-5; CDC, 2024). Over the last 7 years, these rates have remained relatively stagnant.

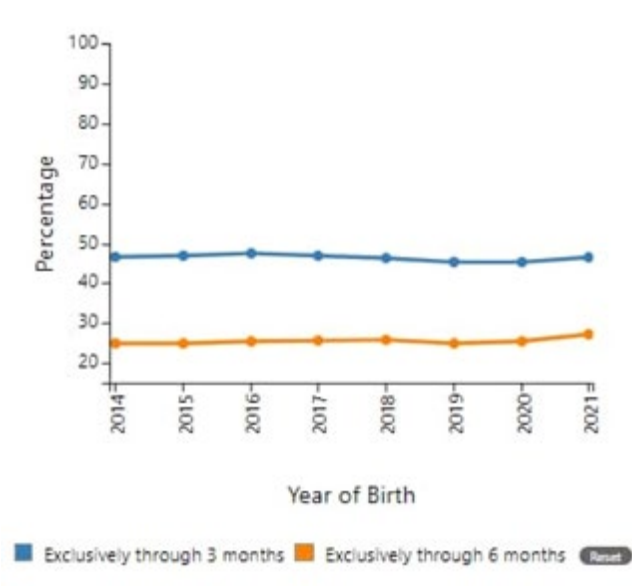


FIGURE 2-5 Exclusive breastfeeding percentage by birth year, 2014–2021.
SOURCE: CDC, 2025b.

Variances in Breastfeeding Rates

Breastfeeding rates in the United States have shown improvement over the last 50 years, but significant variances persist across racial, ethnic, geographic, and socioeconomic lines (CDC, 2022; Chiang et al., 2021; Diaz et al., 2023).

Race and Ethnicity

Data from CDC (n.d.) reveal that racial/ethnic variances in breastfeeding rates are particularly pronounced. While the overall prevalence of breastfeeding initiation is 84% (Marks et al., 2023), fewer non-Hispanic Black infants (75.4%) are ever breastfed compared with Asian (92.7%), non-Hispanic White (86.2%), and Hispanic infants (83.4%). However, due to greater investments and community-led interventions, increases in breastfeeding initiation and duration of Black infants have been observed over the last 10 or more years (Asiodu et al., 2021).

Two other racial subgroups also had prevalence estimates of less than 80% initiation: American Indian or Alaskan Native (77.7%) and Other Pacific Islanders (79.4%) (Marks et al., 2023). These variances persist and often widen at 6 and 12 months postpartum (CDC, n.d.).

Marks et al. (2023) disaggregated breastfeeding initiation data by subgroups, revealing significant variations within broader racial/ethnic categories. For instance, among Asian mothers, Japanese women had the highest breastfeeding initiation rate at 94%, while Filipino women had a rate of 91.3%. Among Hispanic mothers, Cuban women had the highest initiation rate (90.0%), while Puerto Rican mothers had the lowest (82.2%) (Marks et al., 2023). This granular analysis highlights the importance of considering cultural and ethnic subgroups when addressing breastfeeding variances.

Geography

Geographic inequalities in breastfeeding rates are also evident in the data, with significant variations across states and between urban and rural areas. The CDC (2022) *Breastfeeding Report Card* shows that the percentage of infants breastfed at 6 months ranges from 31.7% in West Virginia to 73.2% in Vermont. Figure 2-6 illustrates regional differences, with Southeastern states generally having lower breastfeeding rates than Western and Northeastern states (CDC, 2024). Rural areas tend to have lower breastfeeding rates than urban areas, which may be attributed to factors such as limited access to lactation support services and cultural norms (Aschbrenner & Cornish, 2017; Chiang et al., 2021). Chaing et al. (2021) and Raju et al. (2023) noted that because outcomes vary by state, it may be necessary to implement targeted efforts to address the unique needs of each state. The authors suggested that policies and practices in maternity care that promote breastfeeding, along with programs aimed at high-risk populations, could enhance initiation rates, lessen variances, and improve nutrition for infants (Chaing et al., 2021).

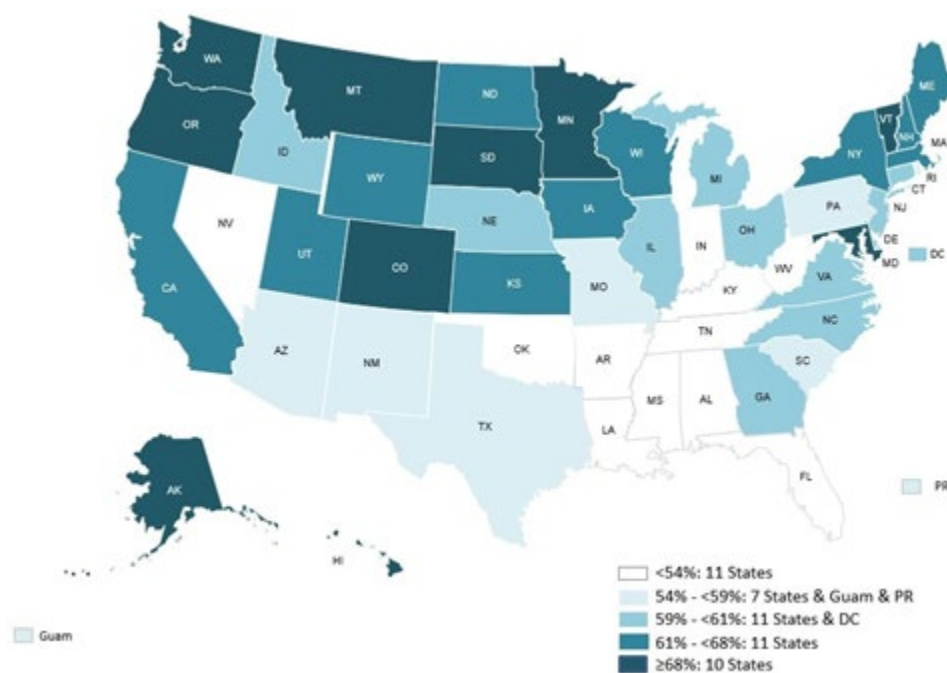


FIGURE 2-6 Percent of infants breastfed at 6 months.

SOURCE: CDC, 2025b.

Socioeconomic Status

Breastfeeding outcomes also vary by socioeconomic status. Mothers with lower education levels and lower household incomes are less likely to initiate and continue breastfeeding than their more affluent counterparts (Seoane Estruel & Andreyeva, 2025). Notably, the relationship between participation in WIC and breastfeeding rates is complex. While WIC provides breastfeeding support and education, studies have shown that WIC participants have lower breastfeeding rates compared with eligible nonparticipants (Ryan & Zhou, 2006; Zhang et al., 2021). Additionally, a study analyzing data from the 2016–2018

National Survey of Children’s Health found that WIC participants had lower breastfeeding rates than the general U.S. population (Parasuraman et al., 2020).

However, recent research suggests that WIC participation may be associated with improvements in breastfeeding rates among certain populations (U.S. Department of Agriculture [USDA], 2024). A study analyzing data from 2009 to 2017 found that breastfeeding initiation increased for low-income women in all racial/ethnic groups, with gaps narrowing between WIC participants and eligible nonparticipants within some racial/ethnic groups (Shetler et al., 2023). This trend indicates that WIC’s efforts to promote breastfeeding may be having a positive impact, particularly among populations with historically lower breastfeeding rates (Metallinos-Katsaras et al., 2015; Segura-Pérez et al., 2021).

Factors contributing to breastfeeding variances are multifaceted and include lack of paid family leave, unsupportive workplace policies, limited access to quality health care and lactation support, cultural norms, and aggressive marketing of commercial milk formula (Office of the Surgeon General, 2011; Petit et al., 2021). Additionally, scholars have found associations between historical and system-level factors, such as racism and discrimination and lower breastfeeding rates among certain racial/ethnic groups (Griswold et al., 2019; Johnson et al., 2016; Robinson et al., 2019).

The COVID-19 pandemic and subsequent infant formula shortage in 2022 highlighted the vulnerability of formula-dependent families and led to an increase in breastfeeding initiation rates (Asiodu, 2022; Tomori & Palmquist, 2022). This increase was particularly pronounced among populations with historically lower breastfeeding rates, including mothers with lower education levels, WIC participants, and Black mothers (Marino et al., 2023; Seoane Estruel & Andreyeva, 2025). This unexpected event demonstrated the potential for addressing breastfeeding variances through targeted interventions and support.

THE COST OF INACTION

As part of their charge, the committee was tasked with exploring the “macroeconomic, health, and social costs of current U.S. breastfeeding rates” (see Box 1-1 in Chapter 1). Existing economic literature measures the overall costs of current, suboptimal U.S. breastfeeding rates, as well as the value of benefits that could be gained by raising breastfeeding rates to optimal levels. See Box 2-2 for a detailed discussion of the methodological approaches used to measure the costs of current breastfeeding rates. Although current cost estimation models are impacted by uncertainty, existing evidence consistently shows large annual costs of suboptimal breastfeeding rates in the United States. Increasing U.S. breastfeeding rates would avoid these short- and long-term costs, resulting in economic benefits.

BOX 2-2

Measuring the Costs of Current Suboptimal Breastfeeding Rates

Approaches to measuring the macroeconomic, or overall costs, of current breastfeeding rates are framed by comparing current, lower rates with rates such as those recommended by the World Health Organization (2021) and UNICEF, which call for nearly universal (in practice, usually set at 90%) early initiation of breastfeeding, exclusive breastfeeding at 6 months, and introduction of nutritionally adequate and safe complementary (solid) foods at 6 months,

together with continued breastfeeding through 2 years of age and beyond as mutually desired. These rates are referred to as optimal, with current, lower rates labeled suboptimal.

The studies then measure the costs associated with suboptimal breastfeeding. For example, if 27.2% of infants are exclusively breastfed to 6 months, as was the rate in the United States in 2021, and the optimal rate is 90%, then the difference of 62.8% indicates the percentage of infants and parents who may experience the impacts of suboptimal breastfeeding and the costs that could be avoided (benefits that could be attained) if current rates rose to meet the optimal level. While most studies compare current breastfeeding rates to an optimal rate, some studies compare current rates to lower target rates, such as the U.S. Healthy People 2030 goal of 42.4% (a difference of 15.2%).

Studies identify major categories of impacts of lower rates and quantify the range and size of those impacts. They then estimate the economic value of the impacts and aggregate those values into an overall estimate of the costs of current breastfeeding rates, again compared with optimal or other target rates. Several studies of the overall burden of current breastfeeding rates have been presented in the format of cost calculators that allow users to estimate costs for different geographical areas or populations. These costs (benefits that could be achieved) can then be compared with the cost of investments that could result in higher breastfeeding rates.

Approaches to measuring the macroeconomic, or overall, costs of current breastfeeding rates identify, based on evidence in the medical literature, the health impacts on full-term infants, sick or vulnerable (including preterm) infants, and mothers that result from lower-than-recommended breastfeeding levels. The cost studies make judgments, based on the literature, about which of these impacts on health and development to include in their analyses. They also consider the economic costs of the outcomes per case for individuals, families, and society, and the sizes of the populations affected. Studies may also include related costs, such as the costs of parental time needed to care for infants or children with higher incidence of negative outcomes due to lower breastfeeding rates. The studies then aggregate costs over time to calculate annual costs.

SOURCE: Committee generated; WHO, 2021.

A scoping study by Jegier et al. (2024) offers a comprehensive review of studies of the economic cost consequences of suboptimal breastfeeding reaching back to the 1990s. The authors identified four approaches used by researchers to estimate costs: microcosting (“bottom-up” approach), static modeling (“top-down” approach), dynamic modeling (“top-down” simulation approach), and macroeconomic (“replacement cost; foregone value” approach) (see Table 2-2). The earlier microcosting approach, which focused on using cost-accounting data to measure the direct impacts of low breastfeeding rates, has been supplanted by static and dynamic modeling approaches that allow a broader range of impacts and longer time frames to be included in the analyses (Jegier et al., 2024).

TABLE 2-2 Definition and Description of Costing Approaches

Approach	Common methods of measurement	Limitations to method	Examples of this type of study
Micro-costing ('bottom up' approach)	Direct measurement of actual financial costs using cost-accounting data.	Relies on risk ratios which may not accurately define infant feeding exposure. Does not have prescriptive, universally accepted methodological approach to defining or measuring costs. May use insurance payment or provider charge data, but neither may represent actual costs. Rarely encompasses costs of mother's time.	Ball and Wright, 1999; Jegier <i>et al.</i> , 2010
Static modelling ('top down' approach)	Costs are extrapolated over a fixed period of time covering finite episodes of illness using epidemiologic risk ratios for illness or disease by type of infant feeding exposure.	Relies on risk ratios which may not accurately define infant feeding exposure. Not tracking cost impacts probabilistically over time so less accurate. Costing of episodes rather than total disease costs over a period. Limited by multiple assumptions on disease incidence in the case of chronic diseases, and wide variability in cost assumptions. Only accounts for health costs, not for mother's time.	Drane, 1997; Bartick and Reinhold, 2010; Colchero <i>et al.</i> , 2015; Rollins <i>et al.</i> , 2016; Walters <i>et al.</i> , 2019
Dynamic modelling ('top down' simulation approach)	Builds on the static modelling, but using a dynamic probabilistic (e.g. Markov chain) computer simulation (e.g. Monte Carlo) model. Usually measures cost impacts of multiple diseases in a large hypothetical population of women and/or their offspring over long periods of time, such as from birth to age 70.	As above for static computation. Relies on probabilistic assumptions about risk ratios by age. Discounting rate choices more influential on cost outcomes.	Bartick <i>et al.</i> , 2013; Bartick <i>et al.</i> , 2017; Unar-Munguia <i>et al.</i> , 2017
Macroeconomic ('Replacement cost; foregone value')	Cost to a country of replacing maternal human milk at contemporary breastfeeding rates with breastmilk substitutes or donor human milk. Suboptimal breastfeeding cost may be calculated by subtracting this cost from the cost at an ideal or target breastfeeding rate, which would be the value of 'lost' milk due to low breastfeeding rates.	Relies accurately defining infant feeding exposure. Willingness to pay as a measure of value may not capture utility or social value. Prices and valuation based on willingness to pay may understate the economic value of breastmilk due to imperfect scientific knowledge of the health impacts of formula feeding. The cost of women's time to breastfeed or express donor milk is not accounted for so it measures gross not net value-added.	Aguayo and Ross, 2002; Smith and Forrester, 2013, Lee, 2013, Lee, 2015,

SOURCE: Jegier *et al.*, 2024, licensed under CC BY-ND 4.0.

Stuebe *et al.* (2017) used a dynamic model to simulate population-level changes in disease burdens and costs for several pediatric and maternal health outcomes based on different marginal increases in breastfeeding rates. They found that a 5% increase in U.S. breastfeeding rates was associated with statistically significant reductions in child infectious morbidity for two outcomes (otitis media and gastrointestinal infection) in the first year of life, with a total medical cost reduction of \$44 million (Stuebe *et al.*, 2017). Bartick *et al.* (2017) used dynamic modeling to measure the outcomes of suboptimal breastfeeding in the United States for nine pediatric and five maternal diseases, with estimated excess deaths of 721 children and 2,619 women due to suboptimal breastfeeding. They estimate the medical costs of pediatric and maternal diseases at \$3 billion annually and the costs of premature deaths at \$14.2 billion, for a total of \$17.2 billion (Bartick *et al.*, 2017).

Rollins *et al.* (2016) use static modeling to estimate the economic costs of lower cognitive development of children and of increased child morbidity related to suboptimal breastfeeding rates. Based on estimates of cognitive development impacts from a systematic analysis by Horta *et al.* (2015), Rollins *et al.* (2016) reported annual losses due to lower cognitive development of \$302 billion worldwide, with high-income country losses of \$231.4 billion and

those of the United States at \$84 billion. They estimated that the costs of child morbidity would be reduced by \$2.45 billion annually in the United States at optimal breastfeeding rates (Rollins et al., 2016).

Walters et al. (2019) used static modeling to analyze a broader range of impacts in their tool to estimate the global cost of not breastfeeding, including health care system costs for two pediatric illnesses and one maternal illness, potential lower earnings due to lost IQ points for children, and potential earnings losses due to premature mortality for children and mothers. Overall, Walters et al. (2019) estimated that the annual costs of not breastfeeding globally are \$341 billion. The estimated cost for North America is \$115 billion annually, made up almost entirely of costs due to cognitive losses, as limited data were available for the other costs. Walters et al. (2019) note,

The estimates are likely to be conservative since the economic costs of increased household caregiving time, which are mainly borne by women, transportation costs, and several child and maternal diseases that can be prevented in part by breastfeeding are not included in the model due to the data availability. (p. 409)

The committee recognizes that there is uncertainty in the estimates of the costs of suboptimal breastfeeding. For example, costs may be overestimated if the extent of health and cognitive impacts from low breastfeeding rates are overestimated. Costs may be underestimated if a range of impacts and cost categories are excluded or incompletely included in estimates, reflecting evidence that may be incomplete or missing on the impacts, size of impacts, or disagreement on what to count.

The estimated total costs of suboptimal breastfeeding depend, as noted above, on the impacts that are included in the studies and the costing methodology. For example, Bartick et al. (2017) focused on a wide range of pediatric and maternal diseases, estimating related medical costs and costs of premature death to be \$17.2 billion annually for the United States. In their scoping article, Jegier et al. (2024) noted that “the optimal infant feeding practice of breastfeeding requires maternal time. Yet almost all studies, even those from a ‘societal’ perspective neglect the time costs to mothers” (p. 916). In the cost analyses reviewed here, this neglect is a result of not including the indirect costs to households of caring for sick children associated with not breastfeeding (Jeiger et al., 2024, p. 941). They noted that, “Costs varied depending on methodology and perspective. Medical costs were dwarfed by cognitive losses and the economic costs of premature death” (Jegier et al., 2024, p. 940). That said, Jegier et al. (2024) concluded that the body of studies available consistently estimate the total costs of suboptimal breastfeeding to exceed \$100 billion annually for the United States.

Conclusion 2-2: Suboptimal breastfeeding rates in the United States result in preventable costs. While cost estimates vary depending on methodology, the existing evidence points to annual national losses between \$17 billion and over \$100 billion. These figures may underestimate the full burden, because preventable costs from the full range of negative health outcomes from suboptimal breastfeeding, as well as indirect costs, such as caregiver time and transportation, are not captured because of data limitations. There is also potential to overestimate the burden, if the extent of health and cognitive impacts upon which cost estimates are built are overestimated.

Chapter 3 of this report explores breastfeeding in the community context, including the influence of intersecting systems and social ecological factors across settings (e.g., public health

policies and programs; media, marketing, and messaging; health care and payment for services and supplies; employers and schools). The following chapters will explore leverage points across these settings and describe best practices, investments, and promising approaches to increasing overall breastfeeding initiation, exclusivity, and duration in the United States and to reducing differences in breastfeeding rates between mothers from different populations and for those experiencing poverty.

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3

Breastfeeding in the Community Context

Infant feeding trajectories are complex and shaped by a range of structural, social, and cultural factors. From maternity care practices and workplace protections to social norms and historical narratives and shifts, a layered ecosystem of influences shapes how, when, and whether breastfeeding occurs. As such, the current landscape of breastfeeding in the United States reflects both progress and persistent challenges shaped by a variety of influences.

This chapter first situates breastfeeding within a broader social ecological framework to illuminate the many systems and forces that affect infant feeding decisions and practices. Next, it turns to a brief history of breastfeeding in the United States, tracing how shifting cultural perceptions and institutional policies have impacted breastfeeding outcomes over time. Then, the committee explores how interpersonal relationships within communities of support, especially those provided by fathers or partners, family members, peers, and lactation support providers, play a critical role in shaping breastfeeding experiences and outcomes.

Understanding these influences is key to designing policy and programmatic interventions that address the cultural, structural, and relational factors that shape breastfeeding. This chapter lays the groundwork for identifying levers of change and building systems that center the needs and realities of families. Subsequent chapters will take a setting-by-setting approach to highlight best practices, evidence-based interventions, and future research needs to improve current suboptimal breastfeeding rates.

The Social Ecology of Breastfeeding

The committee took a social ecological approach in developing this report, recognizing intersecting influences across levels to identify levers for change and opportunities for action (Figure 3-1). This approach centers the breastfeeding dyad in the current landscape of intersecting structural and political influences on breastfeeding and identifies key actors who can work together to enable more families to sustain breastfeeding and reduce or eliminate variances in breastfeeding indicators and rates. Within the context of the life course (see Chapter 2), the social ecological framework illustrates the complex sociocultural environment that influences breastfeeding and the opportunities for interventions that protect, promote, and support breastfeeding mothers and families and thus address overall rates of breastfeeding and differences in breastfeeding outcomes among populations. The committee's goal in using this framework was to highlight the complex intersection of broad social and structural factors in shaping breastfeeding outcomes.

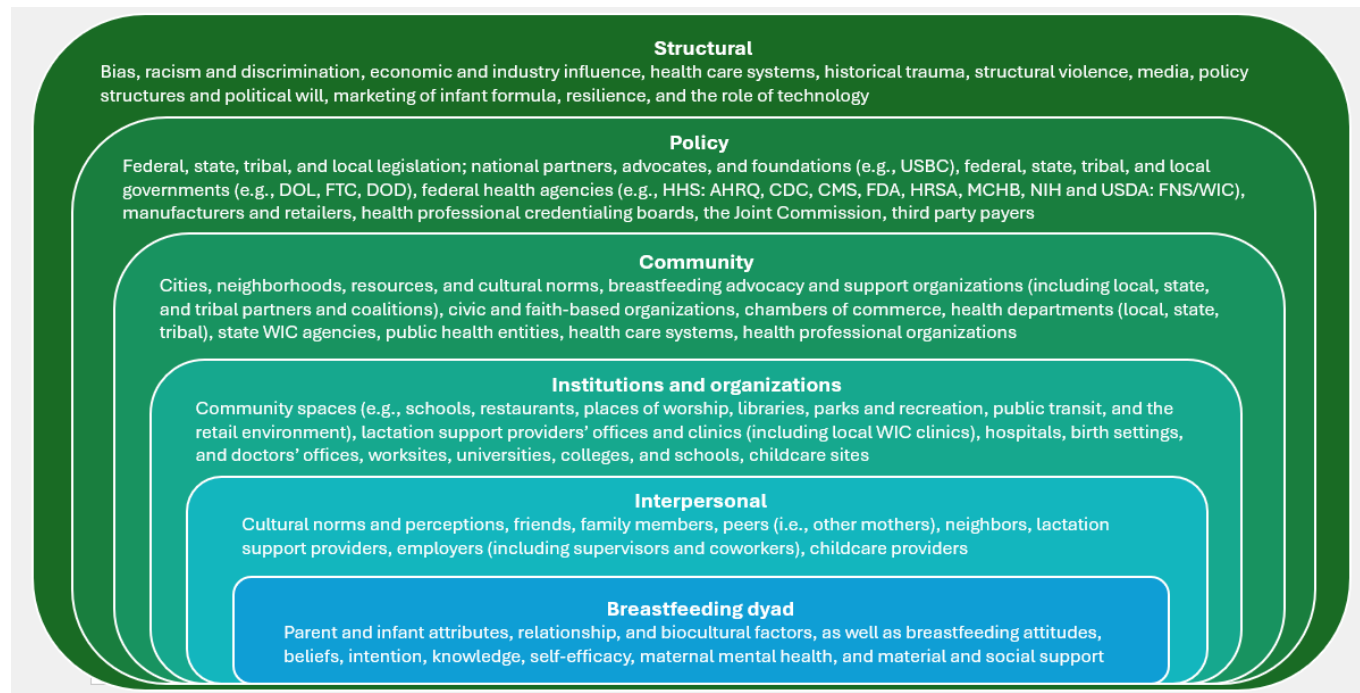


FIGURE 3-1 The social ecology of breastfeeding in the United States.

NOTES: In the case of multiples, the dyad might be referred to as a “triad” or other terminology may be used. AHRQ = Agency for Healthcare Research and Quality; CDC = U.S. Centers for Disease Control and Prevention; CMS = Centers for Medicare & Medicaid Services; DOD = U.S. Department of Defense; DOL = U.S. Department of Labor; FDA = Food and Drug Administration; FTC = Federal Trade Commission; FNS = Food and Nutrition Service; HHS = U.S. Department of Health and Human Services; HRSA = Health Resources and Services Administration; MCHB = Maternal and Child Health Bureau; NIH = National Institutes of Health; USBC = U.S. Breastfeeding Committee; USDA = U.S. Department of Agriculture; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.

SOURCE: Committee generated, adapted from NASEM, 2017b.

Structural

Structural influences operate at the outer level of the model and influence all parts of the lactation journey (Pérez-Escamilla et al., 2023). Structural influences and resulting variances are deeply embedded in policies, laws, governance, and media and culture; they organize the distribution of power and resources differentially across individual and group characteristics (race, ethnicity, sex, gender identity, class, sexual orientation, gender expression, and others). These influences range from broader structural conditions, including socioeconomic variances and exposure to protective and risk factors, that shape foundational aspects of life, from housing to access to food, employment, childcare, and other resources, as well as daily experiences. These conditions may also contribute to or exacerbate maternal mental health and the overall well-being of families and communities (NASEM, 2024). For instance, a mother may face challenges responding to infant feeding cues when she is attempting to address housing challenges or facing food insecurity for her family (Dinour et al., 2020; Gross et al., 2012, 2019; Orozco et al., 2020; Reno et al., 2022). These conditions influence the trajectory of pregnancy

and birth outcomes. Additionally, Krieger et al. (2020), Braveman et al. (2021), and Crear-Perry et al. (2021) identified structural racism as a key underlying driver of preterm births and other poor birth outcomes.

Policy

The next level of the model represents the policies that influence the subsequent levels of the model in descending order. The overarching policy environment includes the role of advocacy groups and coalitions; the impact of legislation at federal, state, tribal, and local levels; and the influence of financing, monitoring, and regulation. These policies, their impacts, and levers for change are discussed throughout the report in the context of various settings, institutions, and organizations.

Communities, Institutions, and Organizations

The model's community level shows the relationships that exist between the institutions and organizations level and the factors that can contribute to the breastfeeding dyad's health and well-being. A *community* is a place where individuals and families can live, work, thrive, and engage in play (NASEM, 2017a). As such, communities are shaped by larger structural and political forces and can bidirectionally build power and capacity to create change (Robert Wood Johnson Foundation, 2025). In this report, institutions and organizations include agencies, businesses, childcare settings, community spaces, health care systems, public health systems and settings (e.g., WIC clinics), universities, colleges, schools, tribal networks, and the workplace. These settings are complex and interdependent, as detailed in Chapters 4–8.

Although additional drivers may influence the breastfeeding dyad, the identified systems, settings, and policies in this model are those most relevant to the committee's charge. For instance, the dynamics of the dyad are shaped not only by experiences with the public health and health care system throughout pregnancy, birth, and during the postpartum period, but also by education, employment, and labor conditions (Pérez-Escamilla et al., 2023). Women may experience necessary and unnecessary mother–infant separation (e.g., health care facility does not practice “rooming in”), delayed breastfeeding initiation, early supplementation with commercial milk formula, or lack of lactation support providers. They may also experience mistreatment and discrimination at prenatal care and birth facilities, which disrupts the coordination between the dyad and therefore makes breastfeeding more difficult (Liu et al., 2024; Pérez-Escamilla et al., 2023; Vedam et al., 2019). Alternatively, they may receive support from peer counselors or early and frequent prenatal education, which may improve their breastfeeding experience and duration. Work conditions may also influence the experience of the postpartum period (Tomori et al., 2022; Vilar-Compte et al., 2021). Extended periods of separation soon after birth and unsupportive workplace policies further disrupt the coordination between the dyad that is needed to establish and maintain lactation (Pérez-Escamilla et al., 2023).

Interpersonal and Individual-Level Influences

The next two levels represent factors that most directly and proximally shape the dyad's daily experiences and routine patterns: interpersonal relationships (e.g., peer support, family influences) and individual-level influences (e.g., attitudes, beliefs, and norms about breastfeeding). Breastfeeding initiation, exclusivity, and duration are heavily influenced by access to social support, culturally informed resources, community advocacy, and attitudes and

beliefs (Asiodu et al., 2021; Houghtaling et al., 2018; Monteith et al., 2024; Pérez-Escamilla et al., 2023; Tomori et al., 2022). The model emphasizes that these interrelated factors and influences can determine the ability of the breastfeeding dyad to achieve the mother's breastfeeding goals.

Social Media Influences

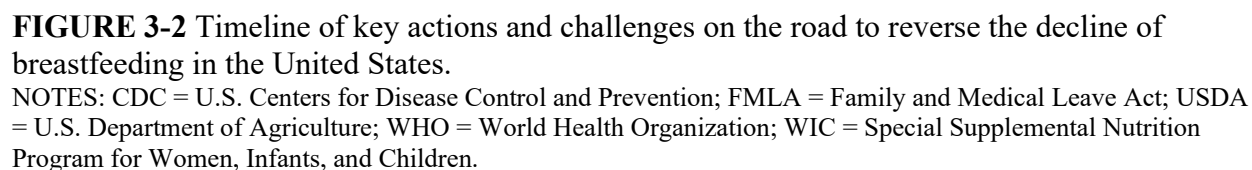
Social media use intersects across the community and interpersonal levels. While direct interactions and communication between individuals and peers are facilitated at the interpersonal level, social media platforms also enable the creation and continuation of larger breastfeeding support groups and infant feeding communities (Morse & Brown, 2022). Concerns and challenges regarding misinformation, unrealistic expectations, and judgment experienced across social media platforms have been raised (Morse & Brown, 2022; Regan & Brown, 2019). However, social media support has been shown to positively influence breastfeeding attitudes, self-efficacy, and perceived social support (Sanchez et al., 2023; Wolynn, 2012). This support is especially critical for mothers and families with limited access to lactation support providers, culturally responsive social support, or previous experience with breastfeeding (Asiodu et al., 2015; Haley et al., 2023). The role and impact of traditional and digital media is further discussed in Chapter 5.

HISTORY OF BREASTFEEDING IN THE UNITED STATES

Breastfeeding practices in the United States have undergone significant shifts over time. This section explores the history of breastfeeding in the United States, highlighting the interplay of sociohistorical dynamics, changing sociocultural norms, medical practices, and policy interventions that have influenced breastfeeding practices over time. This historical perspective sheds light on how social and policy choices influence breastfeeding rates in the United States.

As described in Chapter 2, breastfeeding is a biocultural process—connecting biological processes and sociocultural practices simultaneously. Lactation's physiological roots reflect evolutionary strategies critical to human survival. The intensive care that human infants require to survive indicates that cultural adaptations maintaining close contact and frequent feeding have been important for support of breastfeeding around the world. Breastfeeding practices are also shaped by societal values, norms, and structures (Quinn et al., 2023; Tomori et al., 2022).

Across centuries, breastfeeding practices and trends in the United States have changed, influenced by social, cultural, and economic shifts, the growing influence of medicine, and policy interventions (Figure 3-2). These influences led to extremely low rates of breastfeeding by the middle of the 20th century, but additional social, cultural, and economic shifts drove a rebounding of breastfeeding rates in later decades, though variances persist across sociodemographic groups.



Historically, the people and cultures of the United States have had strong traditions of breastfeeding (Theobald, 2019). However, these traditions were disrupted by large-scale historical and social changes that date back to the founding of the nation with different impacts for various communities. For example, Native American communities experienced forced displacement, dispossession, forced removal of children, and systematic undermining of breastfeeding and other traditional childbearing practices (Theobald, 2019).

Historical scholars have also documented how enslaved Africans were brought to the United States forcibly via the transatlantic slave trade and subjected to violence and forced reproduction under enslavement (Morgan, 2004; Roberts, 1998). Moreover, enslaved women were often required to serve as wet nurses for enslavers' children and forced to prioritize feeding the enslavers' infants over their own (Bugg et al., 2024; Schwartz, 2006; West & Knight, 2017). Even after slavery ended, exploitive wet nursing practices persisted, continuing well into the 20th century (West & Knight, 2017; Wolf, 1999). West and Knight (2017) reported that this practice contributed to higher infant mortality rates and disrupted breastfeeding traditions within communities. In a history of midwifery in the South, Fraser (1998) documented how breastfeeding in Black communities was undermined by systematic efforts that destabilized midwifery in these communities in the early 20th century, leading to a loss of cultural knowledge with far-reaching impacts for health and well-being. Collectively, these studies show the influence of system-level factors, including violence and exploitation, that have left a profound mark on these communities and reverberate in contemporary maternal–infant health variances seen today (Asiodu et al., 2021; DeVane-Johnson et al., 2018; Green et al., 2021; Monteith et al., 2024; Tomori et al., 2022; Warne & Wescott, 2019).

Leavitt's (2016) history of childbearing in the United States documents that the medicalization of birth, initially led by wealthy, White women in the late 19th century, had unequal impacts on breastfeeding (Leavitt, 2016). A growing number of interventions, particularly the introduction of anesthesia, led to the movement of births into the hospital. With the consolidation of physician professionalization, midwifery was undermined, particularly in racial/ethnic minority communities (Fraser, 1998). Fraser (1998) recounted how midwifery was depicted as unsafe and midwives as backwards and ignorant, and births were moved under the supervision of White physicians and nurses. By the mid-20th century most births took place at the hospital (Leavitt, 2016). This disrupted birth and breastfeeding traditions, and hospital practices in birth and postpartum undermined breastfeeding (Apple, 1987; Millard, 1990). In particular, heavy sedation, mother–infant separation, and scheduled feedings with formula led to only about a quarter of infants being put to breast by 1970 (Apple, 1987; Millard, 1990; Wolf, 2006).

Apple's (1987) history of infant feeding in the United States describes how the introduction of commercial milk formula in the late 19th century and its industrial production further accelerated this shift. Initially marketed to wealthier families, formula was advertised as a “scientific” alternative to breastfeeding, appealing to mothers seeking convenience or social status (Apple, 1987). Formula promotion was heavily intertwined with the professionalization of pediatrics, with pediatricians often pioneering their own formulas prior to the manufacturing of formulas on a large scale (Apple, 1987). Physicians often undermined breastfeeding in practice with advice that contradicted the physiology of breastfeeding, including limiting the frequency of feedings, early introduction of formula and other foods, and limiting skin-to-skin contact (Tomori, 2025). Of note, the earliest infant feeding recommendation issued by the American Academy of Pediatrics was in 1948: *Standards and Recommendations for the Hospital Care of Newborn Infants*. This manual included a recommendation to make every effort to have every mother nurse her full-term infant; however, few mothers at the time were provided with the support to do so.

Wolf (2001), in a history of breastfeeding and the public health system, described how other societal changes in the 19th century also began to change traditional breastfeeding practices. Industrialization, urbanization, and large-scale migration restructured family life,

pulling families into urban settings and leading many women to work in settings, such as factories, that did not accommodate young children (Wolf, 2001). This often led to decreases in the duration of breastfeeding and earlier introduction of other foods, contributing to high rates of infectious disease and infant mortality (Wolf, 2001). Early public health attempts to address these problems often focused on “clean milk campaigns” that distributed clean (i.e., unadulterated and pasteurized) cow’s milk while failing to adequately promote, protect, and support breastfeeding; often, they inadvertently further undermined breastfeeding (Wolf, 1991).

As industrial production of commercial infant formula scaled up, physicians and nurses promoted its products both at the hospital and in other settings (Apple, 1987; Wolf, 2006). The infant formula industry undermined breastfeeding by increasingly promoting solid foods to infants as early as a few weeks old (Bentley, 2014).

The combination of these influences led to the dramatic decline of breastfeeding rates in the United States by the mid-20th century, especially among middle- and upper-class families. By this time, most births took place at the hospital (Apple, 1987; Leavitt, 2016). Within the hospital, separating mothers from their newborns immediately after birth, routinely feeding infants commercial milk formula, administering medication to dry up a mothers’ milk supply, and feeding infants on a schedule greatly diminished breastfeeding initiation (Apple, 1987; Millard, 1990). Among the increasingly fewer mothers who initiated breastfeeding, new cultural narratives further undermined breastfeeding duration. These narratives, driven by the rising importance of science and technology, associated formula with modernity and portrayed breastfeeding as outdated and unnecessary (Apple, 1987).

1970s–1980s

Breastfeeding started to receive more public, biomedical, and public health support in the latter part of the 20th century, bolstered by a number of social movements and the growing body of global scientific literature (Weiner, 1994; Wolf, 2001, 2006). White middle-class women led some of these movements, particularly the rise of the La Leche League, which arose from the Catholic Family Movement in 1956 (Ward, 2000; Weiner, 1994). The same social group of women who led the movement away from breastfeeding were now leading its return (Ward, 2000; Weiner, 1994).

Significant gains were made, particularly in breastfeeding initiation, from the 1970s onward (see Figure 3-3), but these gains have not been distributed equally. Racial/ethnic variances have remained a prominent feature of breastfeeding in the United States. Unequal conditions in the labor market played a significant role in these variances, with Black mothers disproportionately working in jobs with lower wages, fewer opportunities for paid leave, and limited protections for breastfeeding (Whitley et al., 2021).

In 1972, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) was authorized as a 2-year pilot program under the Child Nutrition Act of 1966. Its goal was to improve the health of pregnant mothers, infants, and children by providing nutritious foods to low-income families. The program demonstrated its effectiveness, and in 1975, it became a permanent legislative program (National WIC Association, n.d.). While nutritional support for breastfeeding women was part of WIC from the program’s inception, breastfeeding support and nutrition education were not part of this initial legislation. The history of the WIC program and the importance of the additions of breastfeeding support and nutrition education in the current program are explored in Chapter 5.

In 1974, a global boycott of Nestlé began in response to the company's marketing practices promoting commercial milk formula in developing nations, which included marketing tactics such as using health care personnel and salespeople dressed as nurses to promote formula; distributing free formula samples to mothers in hospitals, clinics, and homes; and suggesting that formula was superior or equivalent to breastfeeding (Post, 1985; Sasson, 2016). Consequently, infants faced significant health risks from the dilution of infant formula to mitigate costs, as well as lack of safe water and the lack of immunological protection provided by breastfeeding (Boyd, 2012; Post, 1985; Sasson, 2016). A number of scholars have documented how substantial increases in malnutrition, illness, and infant mortality resulted from these marketing strategies (Anttila-Hughes et al., 2023; Sasson, 2016; Pérez-Escamilla et al., 2023).

These concerns culminated in the 1978 Kennedy hearings, led by Senator Edward Kennedy, which investigated the marketing practices of Nestlé and other formula manufacturers (Post, 1985). The hearings laid the groundwork for *The International Code of Marketing of Breast-Milk Substitutes* (the Code) in 1981. The Code aimed to regulate the promotion of commercial milk formula and related products to protect breastfeeding practices and ensure that caregivers could make informed feeding decisions for their infants and young children. It included provisions to prohibit direct marketing to mothers, restrict free formula samples, and ban promotional activities within health care settings (World Health Organization [WHO], 1981). In addition, it required accurate formula labeling to inform consumers about the benefits of breastfeeding and the potential risks of formula use (WHO, 1981; see Chapters 4 and 6).

The Code received widespread international support, which led to its adoption by the World Health Assembly and many subsequent resolutions. The United States was the only country to vote against its adoption in 1981. Boyd (2012) documented how the U.S. vote was driven by concerns for the potential impact on free trade and by the interests of the commercial milk formula industry (Boyd, 2012).

In the 1980s, the gap between in-hospital exclusive breastfeeding and any breastfeeding rates began to widen significantly in the United States (see Figure 3-3). This shift coincided with the increased marketing of commercial infant formula within hospitals, as documented by the Ross Mother's Survey, initiated in 1965 (Institute of Medicine [IOM], 1991).

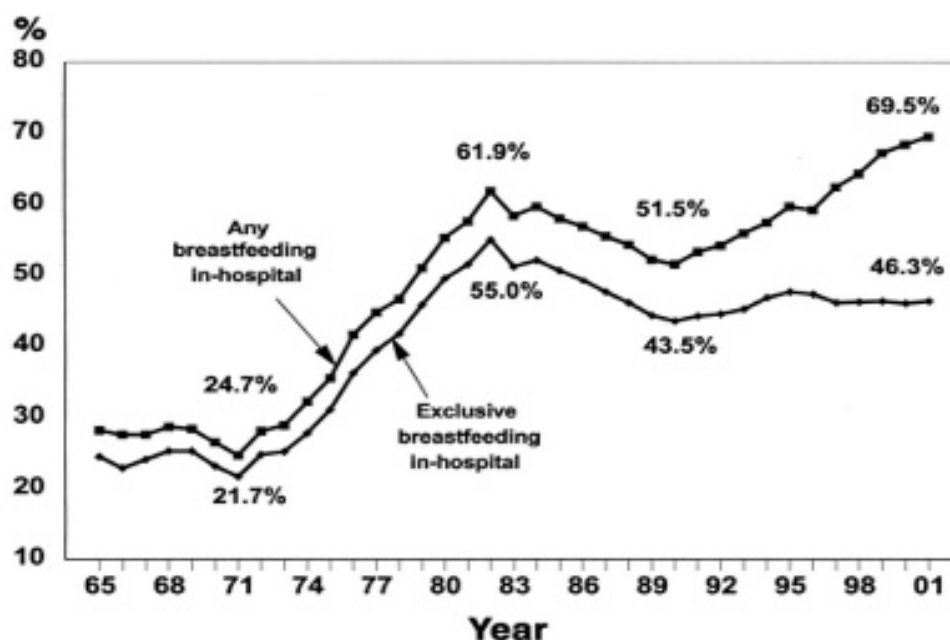


FIGURE 3-3 Graph data from the mother's survey, Ross Products Division of Abbott.
SOURCE: IOM, 1991.

U.S. public health campaigns and advocacy efforts began to shift cultural perceptions of breastfeeding, despite limited action on marketing regulations. By 1989, Congress allocated \$8 million for breastfeeding support through WIC (Rasmussen, 2016). In addition, Surgeon General C. Everett Koop convened the Workshop on Breastfeeding and Human Lactation in 1984 to identify strategies for reducing barriers to breastfeeding in populations with low prevalence and to highlight the state of scientific research, training, and service delivery (Koop & Brannon, 1984). The workshop report later became a national statement published by the Office of the Surgeon General; it reviewed previous federal activities to support breastfeeding and recommended actions to move the field forward (Koop & Brannon, 1984).

1990s–2000s

The 1990s and early 2000s marked a significant period of policy-driven change in breastfeeding support in the United States. The Baby-Friendly Hospital Initiative (BFHI), launched by the WHO and UNICEF in 1991, encouraged hospitals to adopt evidence-based practices that promoted breastfeeding, based on the Ten Steps to Successful Breastfeeding (see Chapter 6). These practices included immediate skin-to-skin contact after birth and rooming-in, where mothers and babies stay together in the same room to facilitate breastfeeding, as well as the provision of breastfeeding education and support and the elimination of commercial milk formula promotion at birth facilities (UNICEF, n.d.).

In 1992, Congress required the U.S. Department of Agriculture (USDA, 2024) to establish a national breastfeeding promotion program and provided various funding mechanisms. The following year, the Family and Medical Leave Act of 1993 was enacted, offering eligible employees up to 12 weeks of unpaid, job-protected leave for specified family and medical

reasons, including the birth and care of a newborn child (U.S. Department of Labor, 1993). This allowed parents who met these requirements and who had the financial resources up to 3 months of time to establish breastfeeding practices without the immediate pressure of returning to work. However, these benefits were not available to workers who were not employed in eligible settings and were inaccessible for many without adequate financial resources.

Two years later, the Healthy Meals for Healthy Americans Act of 1994 mandated that state WIC agencies allocate \$21 per pregnant and breastfeeding participant for breastfeeding promotion and required the collection and biennial reporting of breastfeeding incidence and duration data among WIC participants (U.S. Congress, 1994). In 1998, Congress authorized WIC agencies to use food funds for the purchase or rental of breast pumps, enhancing access to breastfeeding support tools for low-income families (Public Law 105-336, 1998). That year, California passed Assembly Concurrent Resolution No. 155, encouraging employers to accommodate breastfeeding employees by providing adequate facilities for breastfeeding or expressing milk (Assembly Concurrent Resolution No. 155, 1998).

By 1996, the first U.S. hospital achieved the Baby-Friendly® designation, reflecting progress in both institutional and policy-level support for breastfeeding (Baby-Friendly USA, 2019). However, despite widespread global adoption of the BFHI, the United States was slow to adopt it (Grummer-Strawn et al., 2013, see Chapter 6). In addition, in 2007, the Centers for Disease Control and Prevention (CDC) began to monitor Baby-Friendly practices by developing and implementing the Maternity Practices in Infant Nutrition and Care national survey, and the country began to see a rise in Baby-Friendly hospitals over the decade (Feldman-Winter et al., 2017; Grummer-Strawn et al., 2013).

While these initiatives marked significant progress in addressing barriers to breastfeeding, in 2000, the publication of Surgeon General's *Blueprint for Action on Breastfeeding* drew critical attention to variances in breastfeeding rates in the United States and the importance of breastfeeding for maternal and child health (U.S. Department of Health and Human Services [HHS], 2000). HHS (2000) highlighted differences in breastfeeding rates by race and ethnicity, noting that while 75% of all U.S. mothers initiated breastfeeding, only 58% of non-Hispanic Black mothers, 68% of WIC participants, and 67% of mothers with less than high school education initiated breastfeeding (see also HHS, 2011). HHS (2000) argued that this gap underscored the need for targeted interventions, including revisions to WIC food packages to further incentivize breastfeeding and increased funding for lactation support programs.

2010s to Today

In the past 2 decades, breastfeeding indicators have consistently improved, though differences across population groups persist. In addition, the passage of the Patient Protection and Affordable Care Act (ACA) in 2010 contributed to the first national-level approach to provide workplace protections for breastfeeding mothers as well as insurance payment for breastfeeding supplies and support services (see Chapter 6). *The Surgeon General's Call to Action* outlined strategies for addressing barriers, such as workplace policies and healthcare access (HHS, 2011). Public campaigns such as "It's Only Natural" launched in 2014, aiming to normalize breastfeeding among African American mothers, addressed cultural and structural obstacles by fostering positive perceptions and community support for breastfeeding (Office on Women's Health, 2022). In 2018, with the enactment of legislation in Idaho and Utah, breastfeeding in public became legal in all 50 U.S. states (Idaho Legislature, 2018; Utah Legislature, 2018), marking a key step toward reducing stigma and creating a supportive

environment for breastfeeding mothers. By 2020, breastfeeding initiation rates reached a record high of 84.1%, reflecting ongoing efforts to promote and support breastfeeding across diverse communities (e.g., including the BFHI in the Healthy People 2020 goals) (CDC, 2021).

In 2022, the infant formula shortage underscored the critical role of breastfeeding in food security (Asiodu, 2022; NASEM, 2024; Tomori, 2023; Tomori & Palmquist, 2022). The same year, the Providing Urgent Maternal Protections (PUMP) for Nursing Mothers Act (2022) expanded workplace protections for lactating mothers, ensuring that more employees have access to time and private spaces for expressing milk (Consolidated Appropriations Act, 2022). In addition, the Pregnant Workers Fairness Act (2022) took effect in 2023, mandating reasonable accommodations to workers experiencing limitations related to pregnancy, childbirth, or associated medical conditions. (For information on these and other relevant laws, see Box 4-1 in Chapter 4).

Another recent milestone in the history of breastfeeding and lactation support was the update in clinical guidelines related to HIV and breastfeeding. HHS (2023) revised its guidance to emphasize a shared decision-making model in relation to infant feeding options for mothers and people living with HIV. Prior to the updated guidelines, breastfeeding had been contraindicated for mothers and people living with HIV in the United States for nearly 40 years (Abuogi et al., 2024). However, current recommendations support breastfeeding for women and individuals on effective antiretroviral therapy with sustained undetectable viral loads (Abuogi et al., 2024). This has been a recent and notable change in clinical practice (Gross et al., 2019).

In summary, the history of breastfeeding in the United States reflects a complex interplay of sociocultural, medical, economic, and policy-driven forces. From community roots to large-scale disruption driven by exploitation, industrialization, medicalization, and marketing, and its eventual revival through advocacy and institutional support, breastfeeding practices have been shaped by broader sociohistorical transformations (Tomori et al., 2022). While progress has been made to reestablish breastfeeding, persistent differences by race, ethnicity, and socioeconomic status highlight the need for continued attention to address barriers, facilitators, and variances in access, especially for groups with low rates of breastfeeding. Understanding this historical trajectory offers necessary insights into the sociocultural and structural factors that continue to influence breastfeeding today.

Conclusion 3-1: While overall breastfeeding rates in the United States have improved since their nadir in the 1970s, they remain below recommended levels and Healthy People 2030 goals. Significant differences persist across racial/ethnic, geographic, and socioeconomic lines. The current rates reflect both gains and persistent challenges shaped by historical, cultural, and policy influences. Addressing these differences requires a multifaceted approach that includes coordinated surveillance of breastfeeding outcomes and expansion of current data collection systems. Also required is leadership of a national breastfeeding strategy that coordinates federal, state, tribal, and local partners, as well as community groups, health care systems, insurers, workplaces, and academic institutions.

CONFLICTING CULTURAL PERCEPTIONS OF BREASTFEEDING

As the historical discussion above suggests, a lack of comprehensive, structural support available to all families so that they may meet their personal and/or national breastfeeding goals has meant that, though the biological norm for humans, in many U.S. communities, breastfeeding is no longer the cultural norm. In addition, Tomori (2025) and Wolf (2001) have described how evolving cultural perceptions and attitudes in the United States about breastfeeding have created an environment in which community support and knowledge about breastfeeding are no longer ubiquitous and universally passed down or diffused across generations. Freeman (2018) attributed this gap in generational knowledge and support to the influence of commercial milk formula marketing and messaging, as well as historical oppression and racism, which have created variances that have persisted over decades in national breastfeeding rates.

As discussed in Chapter 1, many women in the United States want to breastfeed and believe it is the best way to feed their babies. At the same time, they may feel conflicted by public health recommendations and the realities of breastfeeding in the absence of adequate support. Popular narratives identified in the scientific literature about breastfeeding highlight that it is a healthy and recommended practice but frame it as an individual “choice” and a moral responsibility, devoid of context (see Reyes-Foster & Carter, 2018; Tomori, 2025).

Earlier public health messaging using the language of breastfeeding as “best” has been pervasively critiqued for these moralized narratives (Hausman, 2013; Knaak, 2006; Wolf, 2010). Positioning breastfeeding as “best” can also lead women to view it as extraordinary, a practice that requires perfection and is unattainable—and a marker of privilege and social class (Carter & Anthony, 2015; Tomori, 2025; Wilson, 2018). Such moralized narratives link breastfeeding to “good motherhood,” which may lead women to internalize structural failures. Bresnahan et al. (2020a) suggested that this can lead to stigmatization of formula feeding and can be harmful for maternal mental health, especially for those who intended to breastfeed but were unable to do so. Tomori (2025) and Tomori et al. (2018) describe how moralized narratives can also create negative perceptions of breastfeeding advocacy, associating it with moral judgment and thereby undermining public health efforts.

Importantly, there is also a gap between the cultural ideal of breastfeeding and the perception of its actual practice. For instance, Bresnahan et al. (2020b) and Grant et al. (2022) have stated that despite its protected status, breastfeeding in public remains stigmatized. Tomori et al. (2016) pointed out that breastfeeding women regularly report discomfort, judgment, and even harassment because of their breastfeeding. In addition, Owens et al. (2018) and Villabolas et al. (2021) noted that racialized attitudes and beliefs can amplify scrutiny and perceptions of stigmatization. Asiodu (2022) and Davis (2023) also noted that false and race- or class-based assumptions about mothers can directly undermine breastfeeding, such as in the case of undesired and unnecessary supplementation with formula. Moreover, breastfeeding that does not adhere to a narrow set of cultural expectations can also be stigmatized (Tomori et al., 2016; Walks, 2018; Wilson, 2018).

Even as breastfeeding has become more common, formula feeding remains a cultural norm against which breastfeeding is often measured (Hausman, 2013, 2014; Tomori, 2025; Tomori et al., 2018). Some modern examples include bottle emojis and symbols that are widely used to signify infants, or the language of breastfeeding “benefits,” with formula feeding as the baseline comparator. In addition, Pérez-Escamilla et al. (2023) find that parents as well as health professionals may remain unfamiliar with the typical human behavior of a breastfed infant.

Tomori (2015) describes how typical behaviors of frequent breastfeeding, for instance, violate social expectations in multiple ways, because of the sexualization of breasts and because frequent feeding can also be misinterpreted as signs of excessive “dependence” or a starving baby. The simultaneous stigmatization of both formula feeding and breastfeeding coexist, reflecting a fragmented cultural landscape of infant feeding in the United States.

Those seeking to care for their babies do not benefit from these discourses. Hastings et al. (2020) found that moralization of infant feeding has been used as a key theme by the commercial milk formula industry in its marketing efforts, seeking to heighten tensions by depicting breastfeeding mothers as judgmental. Simultaneously, the authors find that the use of individualistic framing in marketing shifts attention away from the structural drivers of breastfeeding challenges (Hastings et al., 2022). It may also build on critiques of breastfeeding and associated infant formula feeding with “choice,” and “freedom” (Hastings et al., 2022; Hausman, 2008). Given this cultural landscape, community supports for breastfeeding may be particularly important.

COMMUNITY SUPPORTS FOR BREASTFEEDING FAMILIES

Rollins et al. (2016) conducted a meta-analysis of international interventions to improve breastfeeding practices; they reported that community-based interventions, including group counseling or education and social mobilization, increased breastfeeding initiation by 86% (95% CI: 33%–159%) and exclusive breastfeeding by 20% at 6 months (95% CI: 3%–39%). Although they did not identify studies on the effect of community-led interventions on breastfeeding rates over time, their publication presents evidence on the importance of breastfeeding promotion as a societal responsibility—not the sole responsibility of the mother or family (Rollins et al., 2016). Consistent with these findings, Pérez-Escamilla et al. (2023) identified evidence-based interventions across all levels of the social ecological model (see Figure 3-1). Especially important were supportive workplace policies, implementation of the BFHI, skin-to-skin care, kangaroo mother care, and cup feeding in health care settings. The study also emphasized the importance of continuity of care and support in community and family settings via home visits delivered by community health workers or peer counselors (Pérez-Escamilla et al., 2023). It also explained the importance of support from fathers, grandmothers, and the community at large (Pérez-Escamilla et al., 2023; Tomori et al., 2022). Segura-Pérez et al. (2021) reached similar conclusions in their systematic review of breastfeeding interventions among underserved communities in the United States.

Community members, institutions, and organizations can provide social support and encouragement, education about breastfeeding, and advocacy for policies that protect the rights of breastfeeding mothers. They can also bridge resource gaps to ensure that families have the supplies and services they need. In addition, community attitudes, norms, and traditions can influence breastfeeding knowledge and practices. Public health programs and investments (see Chapter 5); media, messaging, and marketing campaigns (see Chapter 5); health care services, insurance, and payment for support services (see Chapters 6 and 7); and employers and schools (see Chapter 8) all operate within and interact with various community contexts.

Thus, communities have multiple opportunities to engage in breastfeeding support, including creating breastfeeding-friendly environments in public spaces and the built environment of health care settings, workplaces, schools, and even transit systems. Structural influences, such as community safety, accessible lactation spaces, and safe housing, can impact

breastfeeding outcomes. Community identities vary; they can encompass geographic contexts, shared cultural or ethnic identities, or virtual or online communities with shared goals or beliefs. Importantly, communities are resilient, and members of a community will creatively access the resources and supports they need. If those supports are not available, they may seek out alternatives, lead initiatives to meet those needs, or seek out alternatives to breastfeeding (e.g., commercial milk formula).

National and State Organizations

In 1995, the U.S. Breastfeeding Committee (USBC, n.d.) was formed as an independent nonprofit organization that aims to “to drive collaborative efforts for policy and practices that create a landscape of breastfeeding support across the United States” (para. 2). The USBC is a critical convener for national breastfeeding advocacy, ensuring that policy, funding, and community-driven initiatives are aligned to create a more breastfeeding-friendly society. USBC advocates for federal policies that support mothers, families, and communities in reaching their breastfeeding goals. It also monitors legislation and funding decisions at the national and state levels and serves as an umbrella organization uniting over 100 national, state, territorial, and tribal organizations. The USBC provides technical assistance to breastfeeding coalitions and disseminates scientific research and best practices across its network. By uniting professionals and practitioners, pushing for legislative changes, and expanding access to support, the USBC (n.d.) plays a fundamental role in breastfeeding support in the United States.

All 50 states have established breastfeeding coalitions, many of which receive technical assistance, web-based communication support, and participation opportunities in a biannual conference facilitated by the USBC. Additionally, numerous local, tribal, and territorial coalitions contribute to breastfeeding advocacy and support at the community level. These coalitions serve as critical drivers of state and local initiatives aimed at promoting and sustaining breastfeeding practices.

Interpersonal Support

Lactation support providers offer proactive breastfeeding education and support, engage mothers within their communities to share evidence-based guidance, and are often integrated into various community and health care settings to enhance access to their services. In addition, fathers, partners, family members, friends, and peers play a crucial role in influencing a mother’s decision to initiate and sustain breastfeeding (Pérez-Escamilla, 2022).

Lactation Support Providers

Breastfeeding mothers and families may receive assistance from a variety of lactation support providers, each with different levels of training, expertise, and roles in the community. These providers range from credentialed medical professionals to trained peer counselors, and their education, training, and certification may vary, as well as where they provide support (see Table 3-1).

TABLE 3-1 Lactation Support Provider Descriptors

Category	Descriptions	Training	Credentials & Programs
Lactation Consultants	Referral to these health professionals is appropriate for the full range of breastfeeding care, particularly involving high acuity breastfeeding situations. Often work clinically as part of the healthcare team in both inpatient and outpatient settings; may also work in private practice.	90-95 didactic hours, and additional training requirements and exam for each title.	International Board Certified Lactation Consultant® (IBCLC®) Program accreditation by Nat'l Commission for Certifying Agencies (NCCA) - Health professionals and individuals with 14 college level health science courses (6 can be continuing education) 95 lactation-specific didactic hours 300 to 1000+ hours of clinical practice, depending on the pathway
			Advanced Lactation Consultants® (ALC®) - Certification as a CLC® or IBCLC® - Plus 2 college credits in <i>Maternal and Infant Assessment</i> and 3 college credits in <i>Advanced Issues in Lactation Practice</i>
			Advanced Nurse Lactation Consultants® (ANLC®) - Current RN license and certification as a CLC® or IBCLC® - Plus 3 college credits in <i>Advanced Issues in Lactation Practice</i>
Breastfeeding Counselors	Individuals who hold these certifications or similar have the skills to provide breastfeeding counseling, address normal breastfeeding in healthy term infants, and to conduct maternal and infant assessments of anatomy, latch, and positioning, while providing support. Often provide support to families in the hospital and community settings. Counselors may have additional competencies to assist families with breastfeeding difficulties.	45-95 hours of classroom training and exam. The Indigenous Lactation Counselor and Military Lactation Counselor do not have exams.	Certified Breastfeeding Specialists® (CBS®) 52+ didactic hours and exam, earning 3 college credits, <i>Core Lactation Consultant Course (CLCC)</i> 95+ didactic hours and exam, earning 6 college credits, <i>Lactation Consultant Training Program (LCTP)</i>
			Certified Lactation Counselors® (CLC®) Program accreditation by American Nat'l Standards Institute (ANSI) 95 didactic hours; ANSI accredited exam earning 3 college credits
			Indigenous Lactation Counselor 45 hours without exam - Solely for individuals who identify as Native or Indigenous
			Military Lactation Counselor® (MLC®) 53 hours without exam - Focused on meeting the needs of military families
Breastfeeding Peer Counselors	Breastfeeding peer support organizations equip these LSPs to meet the needs of the families they serve, focusing primarily on individual and community support.	Personal breastfeeding experience and approximately 20 hours of training through various community models, except for the La Leche League Leader program, which has 90 hours of training.	Peer support organizations equip these LSPs to meet the needs of the families they serve, focusing primarily on individual and community support. Examples of national breastfeeding peer counselor organizations in the U.S. include: Breastfeeding USA CAPP HealthConnect One La Leche League USA Reaching Our Sisters Everywhere Women, Infants, and Children
Lactation Educators	Qualified to support and educate on breastfeeding and related issues. Does not perform clinical care.	45 hours for CLE® of training, and exam. 20 hours for LE(C) of training, and exam.	Certified Lactation Educators® (CLE®) 45 instructional hours and exam
			Community Lactation Educator LE(C) 20 instructional hours and exam

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SOURCE: USBC, 2021.

In a call for standardization of terminology, Strong et al. (2023) suggested three categories for lactation personnel: (1) providers with the International Board Certified Lactation Consultant® designation (IBCLCs) are qualified to provide clinical lactation care; (2) counselor/educators (e.g., certified lactation counselors, certified lactation educators, others) provide education and counseling; and (3) peer supporters are required to have had personal breastfeeding experience. Strong et al. (2023) also suggested different training and certification requirements for each level.

Chapter 6 examines the role of lactation support providers within the health care system, including their interactions and overlap with medical professionals. This section will further explore their role within the community context. Table 3-1 outlines the various training, credentials, and programs undertaken by lactation consultants, breastfeeding counselors, peer counselors, and lactation educators for supporting mothers and families. For example, while IBCLCs offer specialized clinical expertise, peer counselors and community groups offer

practical guidance and emotional support, helping to bridge the gap between clinical and community-based breastfeeding support.

International Board Certified Lactation Consultants (IBCLCs)

Over 20,000 IBCLCs are certified in the United States (IBLCE, 2025). IBCLCs primarily work in clinical settings, where they support breastfeeding during the prenatal, postpartum, and neonatal periods. They may also receive specialized training to assist with preterm, critically ill, or medically vulnerable infants, particularly in neonatal intensive care units and other hospital environments. Some IBCLCs work in private practice, where their services may be paid under the ACA. Others are employed in public health and community settings, providing in-home counseling and personalized breastfeeding support through existing maternal and child health programs. IBCLCs have been shown to positively impact breastfeeding outcomes (Chetwynd et al., 2019; Haase et al., 2019; Patel & Patel, 2016; Thurman & Allen, 2008).

Breastfeeding Peer Counseling

Breastfeeding peer counselors also play a crucial role in helping breastfeeding dyads initiate and sustain breastfeeding. However, determining the exact number of breastfeeding peer counselors in the United States is challenging because of variations in program implementation and reporting across states and localities. Precise data on the number of peer counselors are not readily available, but these professionals serve as key support providers, helping to promote, encourage, and sustain breastfeeding practices nationwide. WIC plays a particularly important role as the largest provider of breastfeeding peer counseling services.

Breastfeeding peer counseling has consistently been shown to be an effective intervention for improving breastfeeding outcomes in the United States and abroad (Chapman et al., 2010; Kaunonen et al., 2012; Patnode et al., 2016; Shakya et al., 2017; Yang et al., 2024) (see Annex Table 3-2). For instance, peer support is key to the WIC breastfeeding support services found to be positively associated with breastfeeding outcomes in New York (Assibey-Mensah et al., 2019) and Minnesota (Interrante et al., 2024; see also Chapter 5). Mothers are reported to value breastfeeding peer counseling highly (Rhodes et al., 2024; Yang et al., 2024). Based on the extensive evidence available, the WHO's (2018) breastfeeding counseling guideline and corresponding implementation recommendations (WHO & UNICEF, 2021) highlight the key role of peer counselors in providing adequate breastfeeding care in communities. In the United States, breastfeeding counselors have been trained with diverse evidence-based curriculums but are not certified. They are usually supervised by lactation support providers, including IBCLCs.

The Community Impact of Lactation Support Providers

In their review, Patel and Patel (2016) found that breastfeeding interventions using breastfeeding peer counselors and lactation consultants increase the likelihood of initiating breastfeeding, any breastfeeding rates, and exclusive breastfeeding rates. Likewise, Chetwynd et al. (2019) found that interventions with lactation consultants improved any breastfeeding at 6 months; the pooled difference was an 8% higher absolute breastfeeding rate compared with standard of care. This finding translates into one additional case of any breastfeeding at 6 months postpartum for every 12 women who received an IBCLC intervention (Chetwynd et al., 2019). A scoping review by Haase et al. (2019) is consistent with the conclusion that IBCLCs are likely to have a positive impact on breastfeeding outcomes. These findings combined agree with the recommendation made by Thurman and Allen (2008), based on their integrative review, to

integrate IBCLCs into both primary care and clinical lactation management services. These findings point to the value of incorporating peer counselors and IBCLCs into clinical and primary care settings.

D'Hollander et al. (2025) conducted a systematic review and meta-analysis of breastfeeding support provided by lactation consultants in high-income countries, distinguishing lactation consultants from all professional and peer breastfeeding supports (found to have beneficial effects on breastfeeding in previous reviews [e.g., Patnode et al., 2016]). The authors noted that breastfeeding interventions provided by lactation consultants reduced the relative risk of stopping exclusive breastfeeding by 4%, stopping any breastfeeding by 8%, and extending breastfeeding duration by approximately 3.6 weeks, compared with a usual standard of care (D'Hollander et al., 2025). As such, lactation consultants play an important, supportive role in interventions to improve exclusive and any breastfeeding. D'Hollander et al. (2025) highlighted the potential applicability of their results, noting previous randomized controlled trials that demonstrated positive effects of lactation consultation and support on breastfeeding rates in communities in the United States that experience unequal access to support and services (i.e., low-income Black and Hispanic families) (Bonuck et al., 2005).

Conclusion 3-2: Breastfeeding mothers and families may receive assistance from a variety of lactation support providers, including peer counselors, each with different levels of training, expertise, and roles in the community. Across various specialties and scopes of practice, breastfeeding peer counseling by lactation support providers is an effective intervention for promoting breastfeeding outcomes in the United States.

The Role of Family Members

Family members pass down generational beliefs, practices, and cultural norms, which can shape or reinforce attitudes related to breastfeeding (e.g., Woods Barr et al., 2021). These influences can either reinforce or conflict with public health or professional society recommendations.

For example, Johnson et al. (2015) conducted a systematic review of psychosocial interventions aimed at improving breastfeeding initiation and duration rates among African American mothers. The authors included three studies (i.e., two randomized controlled trials and one mixed-method design) assessing interpersonal factors that may enhance breastfeeding, including the impact of (1) peer support for mothers during the prenatal period, (2) peer-led education provided to expectant fathers, and (3) the influence of previous family breastfeeding experience. The study results consistently showed that informal supports (e.g., a mother's partner and family) are important for promoting breastfeeding in predominately African American communities (Johnson et al., 2015).

In a meta-analysis, Rollins et al. (2016) identified that home- and family-based interventions focused on mothers, fathers, and other family members at home were effective at improving exclusive breastfeeding, continued breastfeeding, and any breastfeeding. In addition, they tended to show improvements in early breastfeeding initiation (Rollins et al., 2016).

Breastfeeding support must be adaptable to meet the diverse needs of American families, who bring varied cultural backgrounds, experiences, and social contexts to their breastfeeding

practices (USDA, 2021). Family structures have evolved over time, reflecting shifts such as delayed childbearing, increasing racial/ethnic diversity, and changing household compositions (Aragão et al., 2023; U.S. Census Bureau, 2023). Today, more than half of all children in the United States are children of color, and a quarter have an immigrant parent (Children’s Defense Fund, 2023; U.S. Census Bureau, 2023). Additionally, economic variances remain a significant factor, with one in six children living in poverty and nearly half of all infants qualifying for WIC (U.S. Census Bureau, 2023). Given this diversity, breastfeeding support programs may be tailored to the unique needs of different communities.

Fathers and Partners

Fathers and partners have a critical role in supporting breastfeeding, including providing emotional and practical support, as well as advocating and solving problems for the breastfeeding dyad. Research has shown that partner support plays a crucial role in breastfeeding outcomes, influencing initiation, exclusivity, and duration (Mörelus et al., 2015; Zhou et al., 2024). Studies suggest that when partners are actively involved—providing encouragement, assisting with infant care, and supporting breastfeeding decisions—mothers are more likely to start and sustain breastfeeding (e.g., Hunter & Cattelona, 2014). Understanding the impact of partner involvement can help shape effective interventions that enhance breastfeeding success and promote shared family support in infant feeding (Rios et al., 2024).

The Surgeon General’s Call to Action highlights the importance of educating fathers and grandmothers about breastfeeding as a key action step to support breastfeeding (HHS, 2011). And the *Continuity of Care Breastfeeding Blueprint* highlights the importance of including family members that have a direct influence on parents’ feeding decisions and actions (National Association of County and City Health Officials [NACCHO], 2021).

For example, a meta-analytic review conducted by Zhou et al. (2024) reviewed the existing international evidence related to the impact of paternal support interventions on breastfeeding. Interventions focused on fathers during the first 3 months postpartum were found to strengthen a mothers’ intention to breastfeed exclusively. In addition, paternal attitudes have been shown to have a significant and positive effect on maternal exclusive breastfeeding for 6 months (Zhou et al., 2024). Additional evidence from a randomized controlled trial in Sweden suggests that involving fathers in skin-to-skin contact and early breastfeeding initiation can positively influence breastfeeding outcomes as well as maternal recovery postpartum (Mörelus et al., 2015).

Fathers and partners experience many of the constraints that mothers do, including challenges balancing professional and familial responsibilities, a lack of paid family leave, and limited knowledge that may be further exacerbated by insufficient education and guidance from health care providers, family members, or societal norms (Zhou et al., 2024). Currently, no large-scale public health surveillance system exists to better understand the health and behaviors of men who become fathers (Garfield et al., 2022). Emerging efforts, such as adapting the Pregnancy Risk Assessment Monitoring System (PRAMS) to include fathers (i.e., “PRAMS for Dads”), are underway to better understand survey and sampling methodology, father health and health care characteristics and behaviors, and the public health implications and importance of fathers’ involvement in their family’s lives (Garfield et al., 2022).

Special Considerations

The United States has the highest rate of incarcerated women in the world; this includes a significant number of women of childbearing age (Carson, 2020). Breastfeeding while incarcerated poses unique challenges and can impact maternal and infant health (Asiodu et al., 2021). However, there have been community-led efforts to support lactating mothers in jail and prison settings. Policies and community programs are evolving to address the needs of incarcerated pregnant and postpartum women and individuals (Asiodu et al., 2021). These policies and programs include state legislation, birth doulas, pump and pick up programs, prison nursery programs, and community-based alternatives to incarceration; these may help to facilitate breastfeeding and/or access to human milk during separation due to incarceration (Wilson et al., 2022).

Conclusion 3-3: Community supports, peer networks, and family members play a critical role in protecting, supporting, and sustaining breastfeeding. Through culturally tailored interventions, policy advocacy, and integrated models of care, these community-based efforts provide essential infrastructure for meeting the diverse needs of families and advancing breastfeeding outcomes across populations.

Recommendation 3-1: Given evidence from burgeoning literature on community-led breastfeeding efforts, Congress; federal, state, and tribal governments; health systems; insurance companies; and philanthropic organizations should fund and establish cross-sector, coordinated investment strategies for supporting community-led breastfeeding programs and coalitions across all local jurisdictions, states, territories, and tribes.

The committee recommends a cross-sector approach for funding community-led breastfeeding efforts (e.g., programs and coalitions) to ensure that they continue. Evidence from previous multisector approaches shows that coordinated investment strategies for supporting community-led breastfeeding programs and coalitions can work may require complex, adaptive systems using implementation science¹ (e.g., Cresswell et al., 2019; Pérez-Escamilla & Hall Moran, 2016; Pérez-Escamilla et al., 2012; Rollins et al., 2016).

Community-led programs and coalitions play a critical role in breastfeeding support, particularly in historically underserved communities (Asiodu et al., 2021; Burnham et al., 2022; Merewood et al., 2019; Rollins et al., 2016; Ware et al., 2021). These programs are often developed in response to cultural, social, and structural barriers that may prevent mothers from initiating or sustaining breastfeeding (Pérez-Escamilla et al., 2023; Rollins et al., 2016). Many mothers may feel more comfortable receiving breastfeeding guidance from community members who share their background, life experiences, or language. Moreover, community-led initiatives are often embedded within the places where families live, making support accessible and building trust among neighbors. These programs can also empower families with resources,

¹ *Implementation science* is “an interdisciplinary body of theory, knowledge, frameworks, tools and approaches whose purpose is to strengthen implementation quality and impact” (Tumilowicz et al., 2018, p. 1).

education, and support to sustain breastfeeding and support others who encounter similar barriers and challenges. Overall, community-led breastfeeding programs and coalitions can bridge gaps in breastfeeding services and supplies, offer culturally congruent support, and provide guidance to families so that they may make informed infant feeding decisions. These programs play a key role in reducing breastfeeding variances and catalyzing community-level change.

Investing in community-led breastfeeding programs and coalitions can build on and amplify the efforts of the USBC by enhancing coordination, stimulation, and sustained support for these initiatives. To ensure continuity of care, the USBC could also seek funding from a range of sources, including the Title V Maternal and Child Health Services Block Grant (distributed by states), the Health Resources and Services Administration's Healthy Start Initiative, CDC's State Physical Activity and Nutrition Program, the Indian Health Service, and private foundations or philanthropic organizations (NACCHO, 2021).

PROMISING COMMUNITY APPROACHES

Throughout its deliberations, the committee identified promising approaches and programs, including the development of breastfeeding-friendly criteria. In addition, it highlighted community-driven solutions for reducing breastfeeding variances through peer and professional support.

There are multiple definitions, domestically and internationally, of *breastfeeding friendly* in the community setting (Tan et al., 2024). However, scientists have sought to identify a common set of criteria or indicators of a breastfeeding-friendly city, using an approach like that used to establish the BFHI's Ten Steps to Successful Breastfeeding in the health care setting (Tan et al., 2024; see also Chapter 6). Tan et al. (2024) led a scoping review to identify published descriptions of breastfeeding-friendly settings in the existing literature. They identified two country-level indicators, the World Breastfeeding Trend Initiative (a reporting tool) and the Becoming Breastfeeding Friendly Index, a self-assessment tool for countries to use to assess their readiness to scale-up breastfeeding initiatives (Gupta et al., 2019; Pérez-Escamilla et al., 2018). In addition to the two country-level indicators, Tan et al. (2024) identified 24 sets of breastfeeding-friendly criteria across seven community entities: airports, businesses, childcare, education, public space, places of workshop, and homeless shelters.

Domestically, there have been efforts to pilot multilevel interventions to strengthen breastfeeding support during critical transitions. *The Surgeon General's Call to Action* in 2011 identified a clear need for action at the level of the community because of a variety of practical and structural factors in the United States (HHS, 2011). To address this need, in 2015, the Breastfeeding Family Friendly Community (BFFC) designation was piloted to bring together academic institutions, interfaith organizations, community breastfeeding groups, and local policymakers and decision-makers with the shared goal of expanding breastfeeding-friendly practices in Chapel Hill and Carrboro, North Carolina (The University of North Carolina at Chapel Hill, n.d.). The BFFC offered an expansion of the WHO and UNICEF Ten Steps for Successful Breastfeeding and provided a complementary set of the Ten Steps (BFCCD, 2022). To date, communities from the states of Indiana, North Carolina, Ohio, Pennsylvania, Virginia, and Wisconsin have committed to implementing Ten Steps to a Breastfeeding Family Friendly Community and used the provided framework, approaches, and measures to self-designate as Breastfeeding Friendly (BFCCD, 2022). These ten steps identify as key actors the community's elected or appointed leadership, community members, health systems and health care leadership,

community-led breastfeeding support groups, local businesses and organizations, and the education system.

Additional research is needed to identify and agree on a set of criteria for determining “breastfeeding-friendly” community actions. However, there is a growing evidence base that can be leveraged by public health leaders, community coalitions, and other key actors to create more supportive communities and environments for mothers and their infants.

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ANNEX

ANNEX TABLE 3-2 Effectiveness of Breastfeeding Peer Counseling at Improving Breastfeeding Outcomes, Reported by Systematic Reviews

Author & Year	Review Type & Aims	Study Designs & Countries/Regions (N)	Key Findings	Recommendations	Comments
Chapman et al., 2010	Systematic review: Assess (a) the impact of breastfeeding (BF) peer counseling (PC) on breastfeeding and health outcomes based on randomized controlled trials (RCTs), (b) scalability potential of BF PC interventions	RCTs: BF initiation: United States (3), United Kingdom (3), Mexico (1); BF duration: United States (6), Canada (2), United Kingdom (2), Brazil (1), Mexico (1), Philippines (1); Exclusive BF (EBF): United States (6), Canada (2), United Kingdom (2), Mexico (1), Philippines (1); Scale-up studies: United States (2), Bolivia (1), Ghana (1),	Peer counselors effectively improve rates of BF initiation, duration, and exclusivity BF PC initiatives can be effectively scaled up globally	Peer counselors should extend BF support beyond the hospital Large-scale BF programs should integrate BF PC services	Effective scaling up requires (a) evidence-based BF PC training, (b) clearly defined roles and standard operating procedures across settings, (c) fair salary ranges, and (d) effective supervisory structures

		Malawi (1), Brazil (1), Pakistan (1), Philippines (1), South Africa (1)			
Kaunonen et al., 2012	Systematic review including 30 studies and 4 literature reviews Examined (a) Who are peer supporters and what training do they need?; (b) How do peers support BF during pregnancy, at maternity hospitals, and postnatally?; and (c) How effective are peer support interventions?	Studies from Europe, North America, Australia, and New Zealand	A combination of professional and peer support by trained, experienced peer supporters increases BF duration	Professionals should understand the role of peer support in efficiently integrating peer and professional support to improve BF outcomes	Review focused on peer support interventions during pregnancy and postnatally
Patnode et al., 2016	Systematic review: Examined the effects of prenatal, peripartum, and postpartum BF support interventions at the individual and health system levels on (a) maternal and child health outcomes, and	Study types: individual-level interventions: RCTs and cluster RCTs— health system/policy interventions: controlled before–after	BF support and education interventions (including peer support) significantly improved any and exclusive BF rates from 0 to 6 months postpartum	BF support and education by professionals and peers improves BF duration and exclusivity	Review examined potential adverse effects of BF interventions: In 1 trial, no significant association with maternal anxiety at 2 weeks postpartum.

	(b) BF initiation, duration, and exclusivity	and prospective cohort studies N = 52 studies from 57 publications: United States (19), Canada (6), Australia (6), United Kingdom (7), Other Europe (9), Hong Kong/Singapore (4), Argentina (1)			In another, some mothers reported anxiety and decreased confidence in BF ability.
Shakya et al., 2017	Systematic review and meta-analysis: Assessed effectiveness of community-based peer support on BF practices	Study designs: RCTs, quasi-experimental, cohort, cross-sectional, and other comparative observational studies N = 47 studies: low- and middle-income countries (LMICs) (20); high-income countries (HICs) (27)	LMICs: Community-based peer support increased EBF at 3, 5, and 6 months postpartum; increased timely BF initiation; and decreased prelacteal feeding HICs: Peer support increased EBF at 3 months postpartum	Community-based peer support is effective in increasing EBF duration	Studies included interventions with (a) individual or group peer support from peers, grandmothers, or elders, and (b) participatory nutrition interventions involving mothers as key drivers

Yang et al., 2024	Systematic qualitative review: Assessed mothers’ experiences with BF peer support	Study designs: Qualitative and mixed-methods studies examining mothers’ experiences with BF peer support N = 15 studies (13 qualitative, 2 mixed methods)	Mothers perceived peer support as having a positive impact on BF	To improve peer support effectiveness, interventions should be tailored to meet the individual needs of each mother. Standardization is needed for peer support services, including accreditation, training, supervision, and management.	Review provides evidence for optimizing peer support services
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4

Federal and State Policies and Programs: Coordinating Public Health Approaches and WIC

Breastfeeding rates in the United States are shaped by policy environments, resource allocation, and the design and implementation of federal and state-level public health infrastructure. These decisions influence not only the material and informational support available to mothers and families but also the broader sociopolitical context in which infant feeding decisions are made.

This chapter examines the interplay between federal and state policies and programs, public health surveillance systems, and programmatic investments as determinants of infant feeding environments. In particular, it describes the separation that exists between the U.S. Department of Health and Human Services (HHS) and the U.S. Department of Agriculture (USDA), two federal departments that administer programs and policies to serve mothers and infants. The chapter also considers the central role of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), including the history of the program and current breastfeeding-related supports. Finally, it explores how the public health system can build and support community resilience in the face of disasters, emergencies, and supply chain disruptions that affect infant feeding.

FEDERAL AND STATE PROGRAMS THAT PROMOTE BREASTFEEDING

Federal programs that support low-income mothers and infants are administered across multiple agencies, reflecting a division of responsibilities that has evolved over time, with distinct legislative histories and administrative structures. In particular, HHS and USDA have distinct but interrelated roles in promoting maternal and infant nutrition and supporting breastfeeding.

HHS

The Health Resources and Services Administration (HRSA), part of HHS, integrates breastfeeding supports into several of its programs:

- Through the **Maternal, Infant, and Early Childhood Home Visiting** program, home visitors provide information on topics including breastfeeding and connect families to services and resources in their community, such as providers with International Board Certified Lactation Consultant® (IBCLC) and Certified Lactation Counselor designations. Data indicate that the percentage of infants receiving any breastmilk at age 6 months

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increased from an average of 41% in fiscal year (FY) 2021 to 44% in FY 2022 (HRSA, 2023).

- The **Title V Maternal and Child Health Services Block Grant** program includes breastfeeding as one of its national performance measures and implements strategies for addressing breastfeeding initiation and duration.
- The **Women's Preventive Service Guidelines** recommend comprehensive lactation support services, including counseling before and after pregnancy, to optimize the successful initiation and maintenance of breastfeeding, as well as access to breastfeeding equipment and supplies (HRSA, 2023).
- The **Healthy People 2030** goals include increasing the proportion of infants who are breastfed exclusively through age 6 months, from the baseline of 24.9% in 2015 to 42.4% by 2030 (Maternal Infant and Child Health [MICH]-15) and increasing the proportion of infants who are breastfed at 1 year from the baseline of 35.9% in 2015 to 54.1% by 2030 (MICH-16). There have been modest improvements in both measures since the Healthy People 2030 initiative began; as of 2021, the proportion of infants who were breastfed exclusively through age 6 months was 27.2%, and the proportion of infants who were breastfed at 1 year was 39.5%.
- The **Healthy Start Program** requires grant recipients to report on progress toward achieving the 10 Healthy Start benchmark goals, which include breastfeeding. The program also provides doula services at the community level, including lactation education and counseling to help with breastfeeding initiation and duration. Healthy Start also provides a Technical Assistance & Support Center; breastfeeding was one of the most commonly selected priorities by participants in 2022 (Amaka Consulting and Evaluation Services, LLC, 2024).
- The **Children's Healthy Weight State Capacity Building Program** helps state Title V programs improve their knowledge, skills, and tools to successfully integrate public health nutrition. For example, the plan in Oregon includes culturally specific approaches to breastfeeding promotion and support for those partnering with tribal members or African American/Black and other communities of color (e.g., antiracism resources addressing breastfeeding), as well as promotion and support for laws and policies for pregnant and breastfeeding people in the workforce, with a focus on those facing additional barriers (Community Evaluation Solutions, 2022).

Also, within HHS, the Centers for Disease Control and Prevention (CDC) provides breastfeeding recommendations and guidance for families, health care providers, and people in early care and education settings:

- The **Enhancing Maternity Practices (EMPower)** breastfeeding initiative (in partnership with Abt Associates, Baby-Friendly USA, the Carolina Global Breastfeeding Institute, and Population Health Improvement Partners) was a hospital-based quality improvement initiative to help hospitals improve breastfeeding-supportive maternity care and achieve the Baby-Friendly designation. It was the successor to Best Fed Beginnings, described below.
- CDC also provides strategies for continuity of care in breastfeeding and an aggregated list of toolkits from state breastfeeding programs. Previously, CDC funded **Best Fed Beginnings** (2011–2015), a nationwide quality improvement initiative led by the National Institute for Children's Health Quality in partnership with Baby-Friendly USA and the U.S. Breastfeeding Committee (USBC). The goal was to help hospitals improve

breastfeeding-supportive maternity care practices and increase the number of Baby-Friendly hospitals in the United States.

- The **CHAMPS (Communities and Hospitals Advancing Maternity Practices)** initiative helps hospitals increase exclusive breastfeeding rates, improve maternity care, and decrease racial variances.

Additionally, the National Institutes of Health provides consumer-facing information about the benefits of breastfeeding and the importance of breastfeeding to reduce sudden infant death syndrome. The Food and Drug Administration (FDA), in collaboration with CDC, provides tips on how to safely use, pump, and store human milk.

Finally, the HHS Office on Women's Health (OWH) provides resources for employers about breastfeeding as well as the business case for breastfeeding. The Office of the Assistant Secretary for Health, including OWH, recently supported the Reducing Disparities in Breastfeeding Innovation Challenge, a national competition to identify effective, preexisting programs that increase breastfeeding initiation and continuation rates and decrease variances in breastfeeding outcomes in the United States, and that demonstrate sustainability and the ability to replicate and/or expand.

USDA

In addition to WIC, which will be discussed later in this chapter, USDA supports the Child and Adult Care Feeding Program (CACFP), which provides monetary reimbursement to childcare providers for supporting breastfeeding. Specifically, CACFP providers receive reimbursement for meals and snacks when the mother has provided pumped human milk or has breastfed her baby at the childcare site, continuing beyond the child's first birthday. CACFP also provides a training tool for CACFP operators with infants enrolled in their childcare site and covers topics such as handling and storing.

DOD

The U.S. Department of Defense (DOD) has standards and policies for accommodating breastfeeding among military personnel (Mayo, 2024). For example, in June 2024, DOD issued a new policy to cover costs associated with the shipment of human milk during a permanent change of station. Additionally, TRICARE Resources for Military Families include breastfeeding counseling at no cost through the Childbirth and Breastfeeding Support Demonstration (see Chapter 7).

State-Level Programs

In addition to these federal programs, numerous state-level programs aim to create supportive environments for breastfeeding. Examples include:

- Minnesota Breastfeeding-Friendly Health Departments Program¹: This program provides a ten-step process and toolkit for supporting breastfeeding practices at local public health agencies and tribal health boards.
- North Carolina's Maternity Center Breastfeeding-Friendly Designation: This program utilizes a 5-star system, awarding a star for every two steps achieved within the Ten Steps

¹ <https://www.health.state.mn.us/people/breastfeeding/healthdpts.html>

to Successful Breastfeeding (see Chapter 6 for discussion of the Baby-Friendly Hospital Initiative).

- Texas Mother-Friendly Worksite Program²: This program recognizes worksites that comply with “Mother-Friendly” criteria, including having a written and communicated policy. The criteria include space for human milk expression in the worksite, flexible work schedules for breastfeeding mothers, access to clean running water to wash hands and clean equipment, and access to hygienic human milk storage options.
- California’s *9 Steps to Breastfeeding Friendly: Guidelines for Community Health Centers and Outpatient Care Settings*: This program supports community health centers and outpatient care settings to successfully implement practices and policies that protect, promote, and support breastfeeding. The guidelines provide a framework for creating and sustaining a community-based, universally accessible, quality care and support system for breastfeeding mothers and their families (California WIC Association, n.d.).
- Wisconsin’s *Ten Steps to Breastfeeding Friendly Childcare Centers*: These centers provide resources to help community partners assist childcare center employees and owners with providing accurate and consistent lactation support to breastfeeding families whose babies are in their care (Chronic Disease Prevention Unit, n.d.).

While the following programs are administered at the state level, many receive partial funding or technical assistance from federal sources. These initiatives often align with national priorities to promote and support breastfeeding, drawing on resources from agencies such as CDC, HRSA, and Title V Maternal and Child Health Block Grants. As such, they represent a collaboration between state public health systems and federal maternal and child health efforts to create supportive environments for breastfeeding families across diverse settings.

Opportunities for Coordination

As highlighted throughout this report, HHS leads a wide range of policies and programs that support breastfeeding families and has played a pivotal role in advancing breastfeeding and lactation support, as evidenced by the Surgeon General’s Workshop on Breastfeeding and Human Lactation (HHS, 1984), the HHS (2000) *Blueprint for Action on Breastfeeding*, and the Surgeon General’s *Call to Action to Support Breastfeeding* (HHS, 2011). The department sponsors a range of public health activities that address breastfeeding through (1) data collection and analysis (i.e., public health surveillance, described below), (2) workforce development (e.g., provides funds for training and professional development for lactation support providers), and (3) insurance coverage of breastfeeding-related services and supplies (e.g., through Medicaid and the Children’s Health Insurance Program; see Chapter 7).

In addition, USDA, through WIC, provides direct nutritional support to eligible participants and serves nearly half of all infants born in the United States (Kessler et al., 2023). WIC offers a tailored food package, breastfeeding education, and referrals to health and social services (see later in this chapter). While the program is federally administered by USDA, it is typically implemented by state or local health agencies, many of which also receive HHS funding for related public health activities. Later sections situate WIC within this broader policy

² <https://www.dshs.texas.gov/maternal-child-health/programs-activities-maternal-child-health/texas-mother-friendly-worksite>

and programmatic context, highlighting how public health and nutrition programs intersect in their support for low-income families.

Importantly, the HHS and USDA programs have evolved over time in response to distinct legislative authorities, policy mandates, and administrative structures. This historical development occurred without a coordinated, comprehensive national strategy for breastfeeding support. While some shared objectives exist, such as promoting maternal and infant health, differences in program design, funding mechanisms, and eligibility criteria can contribute to challenges in service coordination.

The committee recognizes that this fragmentation may limit the efficiency and accessibility of services for families and communities. A key opportunity exists to strengthen collaboration and foster alignment across federal, state, and local efforts. Strategic coordination could enhance the reach and impact of breastfeeding-related programs, maximize use of existing resources, and improve continuity of care. Such alignment is central to the committee's charge and underscores the importance of developing an overarching framework to guide future efforts (see Conclusion 4-1 and Recommendation 4-1).

LEGISLATION AND POLICIES THAT SUPPORT BREASTFEEDING

The federal government, territories, tribes, and states have all passed legal protections for breastfeeding. At the time of this report, the USBC (2025) tracks federal and state proposed bills by issue topic using OpenStreetMap software. In addition to tracking policy proposals, the USBC provides information on enacted federal policies (Box 4-1). There is no single federal law in the United States about breastfeeding in public, though the Pregnancy Discrimination Act of 1978 prohibits discrimination based on pregnancy, childbirth, or related medical conditions, which can include breastfeeding. Breastfeeding in public spaces is regulated by a series of policies addressing federal facilities and other public spaces and includes a mix of federal and state policies. At the federal level, the Fairness for Breastfeeding Mothers Act, signed in 2019, requires that certain public, federal buildings that contain a public restroom also provide a lactation room, other than a bathroom, that is hygienic and available for use by a member of the public. This law extended the requirement already in place for employees of federal agencies to include visitors to federal facilities.

BOX 4-1

An Overview of Federal Breastfeeding Laws

Providing Urgent Maternal Protections (PUMP) for Nursing Mothers Act (2022)

- Makes changes to the Break Time for Nursing Mothers law and provides the right to break time and space to pump at work to millions of additional workers, including nurses and teachers.
- Allows workers to file a lawsuit to seek monetary remediation if an employer fails to comply with the law.
- Further clarifies that time spent pumping or expressing human milk must be paid if an employee is not relieved from their duty.

Pregnant Workers Fairness Act (PWFA) (2022)

- Provides reasonable accommodations for pregnancy, recovery from childbirth, and related medical conditions, including lactation, unless it presents undue hardship to employers.

- Protects employees from employer retaliation.

Friendly Airports for Mothers (FAM) Improvement Act (2020)

- Extends FAM Act provisions to small hub airports.

Fairness for Breastfeeding Mothers Act (2019)

- Requires certain public buildings with a public restroom to provide a lactation room, other than a bathroom, that is hygienic and available for use by members of the public.
- Extends the requirement that federal agencies provide a designated lactation space that is not a bathroom for employees to include visitors to federal buildings.

FAM Act (2018)

- Requires medium- and large-sized airports to provide a clean, private, nonbathroom space in each terminal for human milk expression or pumping.
- Includes requirements that the lactation space be accessible to individuals with disabilities; be available after each terminal's security checkpoint; and provide seating, a flat surface, and an electrical outlet.
- Also requires airports to provide baby changing tables in each passenger terminal building in one men's and one women's restroom.

Bottles and Breastfeeding Equipment Screening (BABES) Act (2016)

- Requires the Transportation Security Administration (TSA) to provide training to ensure officers consistently enforce TSA Special Procedures related to human milk, infant formula, and infant feeding equipment.

Safe Medications for Moms and Babies Act (2016)

- Established the Task Force on Research Specific to Pregnant Women and Lactating Women.

TRICARE Moms Improvement Act (2015)

- Remedied a gap in coverage for military families under TRICARE to provide payment for breastfeeding support, supplies, and counseling as a preventive service for women.

Patient Protection and Affordable Care Act (ACA) (2010)

- Three provisions from this sweeping legislation directly impact breastfeeding supports, including changes to preventive services, workplace support, and funding for the Centers for Disease Control and Prevention's breastfeeding programs. See Chapters 6–8 for additional detail.

SOURCE: USBC, 2023.

State and Territory Breastfeeding Laws

Last updated in 2021, the National Conference of State Legislatures (NCSL) provided an overview of laws enacted in states and U.S. territories related to breastfeeding. All states, plus the District of Columbia, Puerto Rico, and the Virgin Islands, have passed laws that allow breastfeeding in public or private space (NCSL, 2021). In addition, 31 states, Puerto Rico, the District of Columbia, and the Virgin Islands exempt breastfeeding from public indecency laws (NCSL, 2021). Thirty states, Puerto Rico, and the District of Columbia have workplace-related breastfeeding laws in place, and 22 states and Puerto Rico either postpone or provide exemptions to mothers from jury duty service (NCSL, 2021). Additional statutes specific to individual states and territories dictate protections for supporting breastfeeding, including requirements for lactation spaces in public areas, schools, and childcare facilities; exemptions from state sales taxes on breastfeeding supplies; reimbursement for procuring human milk; provisions for midwifery and doula services for incarcerated women; required health insurance coverage for

breastfeeding assistance and training; and the addition of warnings on marijuana and related products (NCSL, 2021).

Tribal Policies for Supporting Breastfeeding

Native American women face multilevel barriers for breastfeeding, including shifting generational practices, lack of institutional resources, inadequate support from health care providers, and lack of institutional and community supports for breastfeeding (Doria & Liddell, 2024). Federal policies could address these barriers. These policies, including those related to protecting and promoting breastfeeding, could build from the strengths of Native American cultures (i.e., employ an assets-based perspective); this perspective would help address the enduring effects of historical disadvantage surrounding breastfeeding and build community and family resilience to that trauma (Monteith et al., 2024). These policies need to reflect traditional knowledge developed over millennia, recognizing their cultural beliefs and preferences. For policies to be effective they also need to be culturally sensitive and respectful. Breastfeeding protection, promotion, and support policies focusing on Native American communities could be developed or improved in the following domains: enculturation and Native American identity formation, traditional activities and games, relationships with land and Mother Earth, family social structures and the role of elders, languages, and spirituality and ceremonies (Aoki & Porter, 2021).

Tribal nations consider human milk to be a traditional first food that promotes health and prevents chronic disease among infants and mothers. Hence it is important to empower them to exercise their sovereignty to support breastfeeding through policy. The goal of the First Food Policy and Law Scan study was to identify breastfeeding policies adopted by federally recognized tribes in the Bemidji Area of the Indian Health Service (IHS) in Michigan, Minnesota, and Wisconsin. The researchers obtained information from 31 of 34 federally recognized tribes and identified 61 breastfeeding support policies, including 31 formal policies and 30 informal policies. The most common policies supported on-site milk expression or breastfeeding followed by human milk storage and use; only four policies identified breastfeeding as a right. Furthermore, regarding cultural sensitivity, only eight policies addressed Native American cultural norms and languages (Aoki & Porter, 2021).

The policies identified addressed supports for employees in gaming facilities; staff members and to some extent students and visitors in education settings; and patients, staff members, and to some extent community members (e.g., breast pump loan policy) in health settings. Policies on early childcare and education settings addressed supports for parents and providing human milk to babies in the program. Government policies included employee support policies, right-to-breastfeed resolutions, laws prohibiting discrimination against pregnant and nursing mothers, and a law clarifying that breastfeeding did not violate indecent exposure laws (Aoki & Porter, 2021).

Informal policies typically focused on providing private lactation spaces and related facilities (e.g., refrigerators for milk storage). Some informal policies reflected a community-wide approach, with contacts describing multiple lactation rooms available in several settings or multiple activities to support breastfeeding (e.g., educational campaigns, providing comfortable/private spaces at powwows and other community events) (Aoki & Porter, 2021).

The IHS provides health services to approximately 2.2 million members of 567 federally recognized American Indian/Alaska Native tribes. The agency includes lactation support policies in its *Health Manual* (IHS, 2017). In addition to breastfeeding policies for health care systems, it

includes a policy that “all managers and supervisors shall provide the support needed to allow time for nursing mother employees to pump and store human milk while on duty” under the authority of the Patient Protection and Affordable Care Act of 2010 (§ 4207). The policy specifically calls for nursing women to have (1) reasonable break time to express milk for 1 year after her child’s birth each time such employee has need to express human milk, and (2) a clean private space, other than a bathroom, that is shielded from view and free from intrusion of others, to express human milk.

Conclusion 4-1: Multiple government agencies have initiatives and programs to support the breastfeeding dyad, but currently no single entity coordinates the patchwork of government programs into a cohesive road map of investments for the breastfeeding dyad to navigate easily. Coordination and funding across the public health system are limited and insufficient to ensure adequate and culturally competent support for all breastfeeding families.

Recommendation 4-1: Congress should charge and fund the U.S. Department of Health and Human Services to lead a national breastfeeding strategy, coordinating with federal, state, tribal, and local partners, as well as community groups, health care and public health systems, insurers, workplaces, and academic institutions to ensure that all mothers and families have access to effective and culturally centered breastfeeding support and resources to meet their breastfeeding goals.

At the time of this writing, HHS has the authority to lead a national breastfeeding strategy and the infrastructure to coordinate efforts among federal, state, tribal, and local partners, as well as the capacity to engage with a diverse range of stakeholders outside of government, including advocacy groups, community organizations, health care systems and providers, employers, and childcare providers. In addition, HHS can allocate federal funding to breastfeeding support programs and establish future breastfeeding-friendly policies and initiatives.

In addition, HHS can coordinate with other agencies and departments in the federal government that support relevant policies and programs, including USDA (e.g., WIC), the U.S. Department of Labor (e.g., workplace policies and protections), the FDA (e.g., labeling of commercial milk formula) and the Federal Trade Commission (FTC) (e.g., prohibiting deceptive advertising of commercial milk formula). A national strategy could better ensure coordination and integration of breastfeeding protection, promotion, and support across federally funded public health programs that engage women of childbearing age, infants, young children, and their families.

PUBLIC HEALTH SURVEILLANCE OF BREASTFEEDING INDICATORS

Currently, the public health surveillance of breastfeeding practices and support systems is conducted through several CDC programs:

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- The National Center for Immunization and Respiratory Disease conducts annually the National Immunization Survey (NIS), which monitors breastfeeding rates by birth year at national and state levels. The National Vital Statistics System (NVSS) also maintains county-level data on breastfeeding at hospital discharge.
- The National *Breastfeeding Report Card* (conducted biannually) provides data on breastfeeding behaviors and environmental or policy support.
- The Pregnancy Risk Assessment and Monitoring System (PRAMS) is an ongoing, site-specific, population-based surveillance system, designed to identify infants at high risk for health problems and to measure progress toward goals in improving the health of mothers and infants.
- The Maternity Practices in Infant Nutrition and Care (mPINC) survey (conducted biannually) assesses maternity care practices across the United States and provides hospitals with feedback to improve breastfeeding support.
- The Infant Feeding Practices Study I, II, and III are currently underway, as is the 6-Year Infant Feeding Practices Follow-up Study (CDC, 2024).
- The *Morbidity and Mortality Weekly Report* covers breastfeeding, donor human milk, and other related topics.

In addition, WIC measures breastfeeding rates of enrolled participants, primarily using administrative data collected from participants (e.g., Whaley et al., 2012).

Breastfeeding Data Collection Systems

The committee focused on four primary data collection systems and instruments for this report: CDC's NIS-Child, NVSS, mPINC, and PRAMS.

The NIS-Child is an annual, randomly administered survey of parents and caregivers of children between ages 19 and 35 months (CDC, 2024c). Since 2006, the survey has asked questions that provide insight into breastfeeding initiation, duration, and exclusivity rates at the national level (CDC, 2024b):

1. Was [child] ever breastfed or fed breast milk?
2. How old was [child's name] when [child's name] completely stopped breastfeeding or being fed breast milk?
3. How old was [child's name] when (he/she) was first fed formula?
4. This next question is about the first thing that [child] was given other than breast milk or formula. Please include juice, cow's milk, sugar water, baby food, or anything else that [child] may have been given, even water. How old was [child's name] when (he/she) was first fed anything other than breast milk or formula?

In addition to the NIS-Child, county-level data on breastfeeding at hospital discharge are available through birth certificate records maintained by the NVSS. These birth certificate data allow for localized analyses of breastfeeding behaviors and trends but are limited to initiation rates and do not capture duration or exclusivity (CDC, 2025a). Differences between the data sources reflect their distinct methodologies: while the NIS-Child provides a robust national snapshot of breastfeeding practices, birth certificate data offer granular geographic insights but lack longitudinal depth (CDC, 2025a; Chapman et al., 2008; Chapman & Pérez-Escamilla, 2009).

The mPINC survey evaluates hospital policies and practices that impact breastfeeding outcomes. Administered biennially by CDC, the survey tracks institutional factors such as skin-

to-skin contact, rooming in, and formula supplementation practices in hospitals. These factors influence breastfeeding initiation and exclusivity rates. For example, hospitals that adhere to Baby-Friendly guidelines, which emphasize evidence-based maternity care practices, consistently report higher breastfeeding rates (CDC, 2022).

Finally, the PRAMS can be used to provide data on vulnerable infants and mothers and “every” breastfed infant and “any” breastfeeding at age 8 weeks (CDC, 2025b).

Together, these data collection systems—NIS-Child, NVSS, mPINC, and PRAMS—provide complementary perspectives on breastfeeding practices, enabling policymakers to identify trends, variances, and areas for intervention.

CDC’s (2022) *Breastfeeding Report Cards* provide a federal surveillance resource describing breastfeeding rates and supports in all states, the District of Columbia, and Puerto Rico, as well as supportive policies and programs. The report cards typically include breastfeeding initiation rates (the percentage of infants who start breastfeeding), duration rates (how long infants are breastfed, both exclusively and/or with the introduction of complementary foods after 6 months), and support indicators (i.e., mPINC total score, percentage of live births occurring at Baby-Friendly facilities, state enactment of paid family and medical leave legislation, number of weeks of paid family and medical leave available for the care of a new child, and early care and education licensing breastfeeding support scores) (CDC, 2022). The *Breastfeeding Report Card* has historically been released every 2 years; however, a report card was not published in 2024. These report cards are an important example of a promising approach to communicating changes in breastfeeding rates and supports over time.

Future Public Health Surveillance Needs

Comprehensive and accurate public health surveillance of breastfeeding indicators is essential to guide policymaking and ensure the appropriate allocation of federal, state, tribal, and local resources. This report highlights multiple data collection programs and best practices, such as CDC’s *Breastfeeding Report Cards* and their periodic updates. The collection and analysis of this data over time helps identify trends, address differences, and improve and understanding the impact of breastfeeding resources and support.

However, some surveillance efforts and important data points are outdated. For example, CDC last collected breastfeeding initiation rates in 2018–2019. Continued research and disaggregated data analysis can serve as the foundation for developing targeted strategies to reduce breastfeeding variances and improve maternal and infant health outcomes for all populations.

To this end, additional data collection to capture the wide variety of public health supports for breastfeeding would be useful for identifying gaps and opportunities. For example, it is important that surveillance systems not only capture rates of breastfeeding initiation, duration, and exclusivity, but also help decision-makers at various levels identify barriers to breastfeeding among populations with low rates, particularly those who are historically underserved. Additional attention to real-time changes in rates among communities with suboptimal breastfeeding rates and agility to address challenges as they arise would help reduce differences in current rates. Existing strategies or promising programs could be adjusted or scaled up to ensure that all mothers and infants receive the support they need to reach their breastfeeding goals.

Conclusion 4-2: Current public health surveillance of breastfeeding indicators provide complementary perspectives on breastfeeding practices, enabling policymakers to identify trends, variances, and areas for intervention. These data collection and analytical efforts identify significant trends, address variances across populations, and improve understanding the impact of breastfeeding resources and support. However, current efforts do not adequately capture the wide variety of public health supports for breastfeeding, disaggregated across different demographic groups, that could help identify facilitators and barriers to breastfeeding. Real-time monitoring of breastfeeding trends is also limited; additional attention to real-time changes in breastfeeding rates could help inform the allocation of public health resources and services to communities with the greatest need and further understanding of the effectiveness of existing interventions.

Recommendation 4-2: The U.S. Centers for Disease Control and Prevention should continue to coordinate the surveillance of breastfeeding outcomes and expand the current data collection systems to ensure continuity, coordination, and collaboration across federal, state, tribal, territory, and local programs.

Expanding the scope of public health data collection would help identify gaps and opportunities for improving breastfeeding support and continue to build evidence about outcomes related to breastfeeding investments. While numerous public health initiatives exist to promote breastfeeding, challenges regarding lack of coordination, limited resources, and insufficient surveillance remain. Specifically, additional data collection and monitoring are needed to better capture:

- Potential barriers to breastfeeding across systems and settings
- Variances across all sociodemographic groups in breastfeeding and related health outcomes
- The availability of breastfeeding support, including access to lactation support providers (e.g., IBCLCs and community breastfeeding peer counselors) (see also Chapter 6), and paid family and medical leave, as well as workplace and school accommodations (see Chapter 8).
- The impact of further scaling up health care initiatives (see Chapter 6), as well as public health programs and WIC breastfeeding peer counselors and other community-based breastfeeding support efforts (discussed further in this chapter).

Integrating existing federal data collection tools and improving data-sharing across agencies would provide a more comprehensive and timely understanding of breastfeeding trends in response to policy and programmatic changes. In addition, more community-level data are needed to identify local variances that may be masked by national or state-level statistics (Marks

et al., 2023). For example, increased funding for assessing breastfeeding support in historically and currently underserved communities would allow community-based organizations and local public health departments to evaluate the effectiveness of their programs and share key insights (Reis-Reilly et al., 2018). This would enable scaling successful models to other communities and informing future public health interventions.

Most of the current breastfeeding data are captured retrospectively through surveys, which may limit responsiveness to real-time challenges (Chapman & Pérez-Escamilla, 2009). The committee identified innovative data collection methods that could improve surveillance: (1) mobile health applications for tracking breastfeeding behaviors; (2) standardized, discrete documentation of infant feeding in electronic health records to track outcomes at the health care level; (3) qualitative data collection to capture deep understanding of community needs and diverse lived experiences; and (4) longitudinal studies that quantify the impact of breastfeeding on long-term measures of maternal and child health and associated noncommunicable diseases. Ultimately, improving breastfeeding surveillance is an important element of advancing national breastfeeding initiatives (Chapman & Pérez-Escamilla, 2009). By expanding the scope of data collection, strengthening current systems, and enhancing community-level data-gathering, public health agencies can improve breastfeeding support services, address variances, and strengthen the current landscape of support for breastfeeding mothers and families.

THE WIC PROGRAM

The beginning of this chapter identified government supports for breastfeeding across multiple entities and describes the public health surveillance of breastfeeding rates. Of the various government approaches, WIC, which is federally funded and state administered, is widely recognized as a highly successful public health nutrition program, serving nearly half of all infants born in the United States (Kessler et al., 2023). Given the broad reach of the WIC program to both mothers and infants, this chapter spends considerable time outlining how WIC promotes breastfeeding as the optimal source of nutrition for infants. (WIC provides iron-fortified infant formula for babies who are not fully breastfed).

WIC was established by USDA in 1972 (see Chapter 3). Today, WIC provides supplemental foods (known as food packages), nutrition education, breastfeeding support, and health care referrals for income-eligible pregnant, breastfeeding, and nonbreastfeeding postpartum women, and to infants and children up to age 5 years who are found to be at nutritional risk. Assessment of program eligibility, including an assessment of nutritional risk, is required at enrollment into the program and annually thereafter. Individuals with incomes below 185% of the federal poverty level are eligible for WIC, and adjunctive (i.e., automatic) eligibility is conferred through participation in Medicaid, the Supplemental Nutrition Assistance Program (SNAP), and/or the Temporary Assistance for Needy Families program (adjunctive eligibility may vary by state) (USDA, 2024). The assessment of nutrition risk enables staff to tailor food packages to address nutritional needs, design appropriate nutrition education and breastfeeding support, and connect to appropriate referrals. Currently, WIC serves over 6.7 million participants monthly and reaches over half of eligible individuals (Kessler et al., 2023; USDA, 2025). The highest level of WIC participation is among infants under age 12 months (78% of those eligible); the lowest level of participation is among 4-year-olds (24.7% of those eligible) and postpartum women who are not breastfeeding (25.4%) (Kessler et al., 2023).

WIC services have evolved over the past 5 decades (see Box 4-2). For example, the original program offered just two food packages, one for infants from birth to 12 months and one for children ages 1–3 years and pregnant and breastfeeding women. It now offers seven food packages designed to meet the nutritional needs of each participant. Similarly, breastfeeding promotion and support were not offered when WIC was founded. At the time, U.S. breastfeeding rates were at an all-time low of 25% (see Chapter 3). Low levels of breastfeeding, combined with very limited information and resources, led WIC leaders to create a nutrition program designed to meet the high need for access to commercial milk formula, as will be discussed further in this chapter.

BOX 4-2 **The Evolution of WIC Breastfeeding Services**

Beginning in 1989, the Child Nutrition and WIC Reauthorization Act required that the U.S. Department of Agriculture (USDA, 2024) establish a national breastfeeding promotion program and foster wider public acceptance of breastfeeding in the United States. WIC state agencies were required to spend funds earmarked specifically for breastfeeding promotion and support and were authorized to spend WIC administrative funds on breastfeeding aids (e.g., breast pumps) that directly support breastfeeding initiation and duration.

In 1992, an enhanced WIC food package was established for women who exclusively breastfeed their infants to encourage breastfeeding among WIC mothers (*Federal Register*, 1992, pp. 56, 231–256).

In 1997, USDA kicked off a National Breastfeeding Promotion Campaign to encourage WIC participants to begin and continue breastfeeding.

In 2007, an interim rule revised regulations governing the WIC food packages and aimed to promote breastfeeding by establishing three feeding options within each of the infant food packages (fully breastfeeding, partially breastfeeding, fully formula feeding) by reducing the amount of formula provided to partially breastfed infants and increasing the amounts of foods provided to fully breastfeeding mothers. All states were required to implement this rule in 2009.

Separate from WIC funding, in 2004, Congress passed legislation that set aside funds exclusively for breastfeeding peer counseling (BFPC) support in the WIC program. The annual WIC BFPC set-aside has grown from \$20 million initially to \$90 million in fiscal year 2024, the highest level authorized by the 2010 Healthy, Hunger Free Kids Act.

SOURCES: *Federal Register*, 1992; USDA, 2024.

With respect to breastfeeding, WIC's goal is to encourage mothers to breastfeed exclusively without supplementation and to ensure that every dyad receives the support it needs for healthy growth and development (USDA, 2016). As a public health nutrition program, WIC must ensure that every baby has access to nutrition support. Thus, in addition to providing breastfeeding support and enhanced benefits to breastfeeding women, WIC provides commercial milk formula to dyads who need it. The following three sections outline the three main components of infant feeding support in the WIC program relevant to this report: (1) WIC breastfeeding education and support, including the provision of breastfeeding supplies and peer counseling; (2) the WIC food packages for breastfeeding and nonbreastfeeding individuals; and (3) the provision of commercial milk formula through WIC.

WIC Breastfeeding Education and Support

Breastfeeding education for WIC participants starts during the prenatal period, often at the time of enrollment into WIC, with a focus on breastfeeding basics, the benefits of breastfeeding, barriers to breastfeeding, intention to breastfeed, and what to expect at the hospital. In 2022, of women enrolled in WIC prenatally, almost half (48.3%) enrolled in the first trimester, 40.2% in the second trimester, and 11.4% in the third (USDA, 2024e). While early prenatal enrollment is most common, some women enroll during the postpartum period, thereby missing an important window for prenatal breastfeeding education and support.

In support of breastfeeding, WIC regulations require state agencies to track breastfeeding rates every 2 years and to dedicate funding toward breastfeeding education and support. A thorough breastfeeding assessment is a requirement of providing WIC nutrition services and issuing a food package to postpartum mothers and their infants. In addition to assessing beliefs or knowledge about breastfeeding, potential complications, and the mother's network for successful breastfeeding, the breastfeeding assessment identifies prenatal decision-making; growth, feeding, or other concerns expressed or identified by staff, the participant, or a provider; food package assignment and changes; breastfeeding aids, including breast pump issuance; and the return to work or school.

Breastfeeding education and support, which are core pillars of WIC service delivery, may come through any or all the following four channels: (1) program-wide staff breastfeeding training and education, (2) the provision of breastfeeding aids and accessories such as breast pumps, (3) case-management support from breastfeeding peer counselors, and/or (4) support for women experiencing breastfeeding challenges. These services are provided by state and local agency WIC programs, and all WIC staff who counsel participants are required to receive breastfeeding training and education on an annual basis. However, there is considerable variation from state to state—and within states—in how this breastfeeding education and support is provided based on resource availability.

Staff Breastfeeding Training and Education

The Code of Federal Regulations for WIC (2024) establishes standards for breastfeeding promotion and support that include, at a minimum, the following: (1) a policy that creates a positive clinic environment that endorses breastfeeding as the preferred method of infant feeding, (2) a requirement that each local agency designate a staff person to coordinate breastfeeding promotion and support activities, (3) a requirement that each local agency incorporate task-appropriate breastfeeding promotion and support training into orientation programs for new staff involved in direct contact with WIC clients, and (4) a plan to ensure that women have access to breastfeeding promotion and support activities during the prenatal and postpartum periods. The WIC Breastfeeding Curriculum (USDA, n.d.-a)—developed by USDA's Food and Nutrition Service (FNS), which administers WIC—was established for state and local agency staff training and is updated regularly. FNS strongly encourages, but does not require, state and local WIC agencies to use all levels of this curriculum (see Table 4-1). While all staff are encouraged to receive Level 1 training around promotion and support of breastfeeding, fewer staff complete the higher Level 3 and 4 trainings that focus on breastfeeding concerns and problems.

TABLE 4-1 WIC Breastfeeding Curriculum

Level	Who Is Trained	Training Content
1	All WIC staff serving participants	Basic breastfeeding promotion; importance of breastfeeding.
2	Peer counselors and other WIC staff who support new mothers with breastfeeding	Supporting normal breastfeeding, common experiences of a breastfeeding parent, what support most parents need to breastfeed.
3	WIC competent professional authorities and breastfeeding coordinators	Assisting mothers with breastfeeding concerns, clinic practices that support breastfeeding.
4	WIC designated breastfeeding experts	Helping mothers with complex breastfeeding challenges that are beyond the scope of practice for Level 2 and 3 staff.

NOTE: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.

SOURCE: Committee generated, based on FNS, 2025.

Evidence from the WIC Breastfeeding Policy Inventory (BPI) II (USDA, 2024b), using information from state plans in 2022, found that all state agencies used the FNS curriculum to train state and local agency staff (Esposito et al., 2024). Of the 1,527 local agencies that responded to the WIC BPI II Local Agency Survey (250 did not respond), 77.8% reported using the FNS curriculum to provide breastfeeding training and education to at least one type of staff. It was used most often to train breastfeeding coordinators (62.5%) and competent professional authorities (56.8%) and least often with clerical or support staff (44.5%). Local agencies reported they commonly used other FNS resources, such as the WIC breastfeeding website (63.9%), or other breastfeeding resources (62%) to train staff (Esposito et al., 2024). As is evident from these data, how state and local agencies implement breastfeeding training and education varies.

Notably, the COVID-19 pandemic increased the need for virtual breastfeeding support, which provides an opportunity to reach participants without requiring travel to a WIC site or other health care facility. While many WIC local agencies (62.4%) offered telephone counseling prior to the pandemic, this number increased to 83.2% by late 2022. At the same time, only about half (50.3%) of local agencies reported their staff had access to training on how to provide breastfeeding counseling in a virtual setting (Esposito et al., 2024).

Breastfeeding Aids and Accessories

WIC programs may provide breast pumps and other breastfeeding supplies to the breastfeeding dyad, but Medicaid and/or private health insurance is the first payer on record (see Chapter 7). Availability and provision of breastfeeding supplies from WIC varies widely from agency to agency, largely because breastfeeding aids and accessories are not WIC program benefits (USDA, 2016). State agencies must provide WIC participants with supplemental foods; nutrition education, including breastfeeding education and support; and referrals to health and social service programs. Additionally, program regulations specify that “the cost of breastfeeding aids which directly support the initiation and continuation of breastfeeding” are allowable costs (7 C.F.R. § 246.14(c)(10), 2024). Thus, state agencies may choose to provide breast pumps and other aids and accessories and can offer them for free, at a reduced cost, or at cost to WIC.

participants. According to the WIC BPI II, 78.2% of states have manual breast pumps, 62.1% have single-user electric breast pumps, 58.6% have multiuser electric breast pumps, and 23% have an unspecified type of electric pump available to participants (Gleason et al., 2024). Eight percent (8%) of state agencies do not specify availability of any breast pumps (Gleason et al., 2024).

The primary avenue for states to provide breast pumps and supplies is through annual funding allocations from USDA to states, which are provided quarterly in the form of food grants (~70% of funding) and Nutrition Services and Administration (NSA) grants (~30% of funding). Each state receives a specified amount for food spending and NSA spending, determined by USDA's funding formula. In FY 2024, the total national WIC food grant allocated was about \$5.6 billion; the total national NSA grant was about \$2.37 billion (USDA, 2024f). States are authorized to use NSA funds (since 1989) and/or food funds (since 1998) to purchase or rent breast pumps and supplies. Therefore, WIC state agencies have the authority to decide how to spend WIC funds on breastfeeding aids and accessories; their decision is often based on available funding once NSA and food funds are allocated to meet all other food and nutrition needs. State agencies that choose to purchase breastfeeding aids and accessories must develop specific policies that ensure the most efficient use of WIC funding. Thus, provision of and availability of breast pumps and supplies for WIC caregivers can vary considerably from state to state, as well as within states.

Breast pumps can be offered to breastfeeding women based on how a state determines need and may not be offered solely to encourage breastfeeding. In general, breast pumps may be provided to mothers having difficulty establishing or maintaining milk supply because of maternal or infant illness, during mother–infant separation (e.g., infant in neonatal intensive care unit, mother returning to work), and to mothers having temporary breastfeeding problems. State agencies must determine the circumstances under which pumps will be provided and must determine the type(s) of pumps to be offered. USDA's Breastfeeding Policy and Guidance document provides detail to WIC agencies for implementing breast pump programs (see USDA, 2016, Appendix E).

WIC Breastfeeding Peer Counselor Program

Distinct from USDA WIC funding for food and NSA costs, the Breastfeeding Peer Counseling Program (BFPC) is funded through a separate set-aside from Congress and provides an evidence-based model of breastfeeding support that connects pregnant and postpartum WIC participants with peers from their community. The amount for BFPC funding was \$90 million for FY 2024 and, like WIC funding, must be allocated by Congress every fiscal year.

Substantial evidence demonstrates that peer counselors improve rates of breastfeeding initiation, duration, and exclusivity (see, e.g., Chapman et al., 2010; Interrante et al., 2024; see also Chapter 3). FNS defines a *WIC breastfeeding peer counselor* as a paraprofessional from the community WIC serves who has previous experience with breastfeeding. Peer counselors are recruited and hired from WIC's target population of low-income women, and the BFPC program trains them to provide breastfeeding support in WIC clinics, homes, and/or other settings (USDA, n.d.-b). FNS's goal is "to integrate breastfeeding peer counseling as a core WIC service and assure that breastfeeding peer counselors are available in as many WIC clinics as possible" (USDA, 2016, p. 19). The current funding level is not sufficient to ensure every breastfeeding dyad has access to a WIC breastfeeding peer counselor.

WIC peer counselors have a defined scope of practice that is limited to basic breastfeeding support and education. States must have a written defined scope of practice for peer counselors that (1) describes the peer counselor’s role as providing basic breastfeeding education and support and (2) lists breastfeeding conditions and concerns that are outside the scope of practice and should be referred to a designated breastfeeding expert. Training of state and local peer counseling management and clinic staff uses the FNS-developed training curricula, and state agency nutrition education plans must establish the set of standardized breastfeeding peer counseling policies and procedures for the state and local levels. WIC agencies must conduct an annual assessment of the breastfeeding needs of the target population, have a protocol that describes how peer counselors address concerns and needs outside of clinic hours, have opportunities for peer counselors to observe experienced lactation experts and peer counselors, and monitor and observe peer counselors. Agencies must have a process in place for WIC staff to refer WIC participants to peer counselors as part of the usual WIC certification, assessment, and nutrition education process. Agencies with a peer counseling program must have at least 0.25 full-time equivalents (FTEs) dedicated to a supervisor for every 3–5 peer counselors. Peer counselors are expected to adhere to a general schedule of contacts with the mother, from the prenatal period through 6 months postpartum, but total doses of peer counseling support a caregiver receives can vary from agency to agency and from caregiver to caregiver (Table 4-2).

TABLE 4-2 Current Schedule of Minimum Required Contacts From Breastfeeding Peer Counselors

Time Period	Minimum Required Contacts
Prenatally	Monthly, then weekly 2 weeks prior to expected delivery date
1st week postpartum	Every 2–3 days, <i>and</i> within 24 hours if problems reported
1st month postpartum	Weekly
1–6 months postpartum	Monthly, as long as things are going well, <i>and</i> 1–2 weeks before return to work, <i>and</i> 1–2 days after return to work

SOURCE: Committee generated. USDA, 2016.

Based on survey data collected in 2022, 71.4% of local agencies had a peer counseling program (Wroblewska et al., 2024). This does not, however, mean that 71.4% of WIC mothers have access to a peer counselor. As reported by Wroblewska et al. (2024), the average ratio of breastfeeding women to peer counselor FTE varied substantially between small local agencies serving fewer than 1,000 participants (69:1), medium local agencies serving 1,000–4,999 participants (187:1), and large local agencies serving more than 5,000 participants (393:1). One peer counselor FTE cannot serve 187 or 393 participants; these ratios indicate that there is a substantial unmet need. When asked about the number needed to serve all breastfeeding clients who want to receive peer counseling support, local agency staff reported an average ratio of 88:1 would be required (USDA, 2024c).

Support for Mothers with Breastfeeding Challenges

As noted above, WIC peer counselors have a defined scope of practice that is limited to focusing on supporting breastfeeding without need for formula supplementation. For mothers experiencing challenges with breastfeeding, support is needed from staff with additional training, which may include an IBCLC or other lactation support provider. The Level 3 and 4 trainings

available in the WIC Breastfeeding Curriculum support the training of breastfeeding experts to provide additional hands-on support (USDA, n.d.-a). However, as mentioned above, fewer staff complete the higher Level 3 and 4 trainings, which focus on breastfeeding concerns and problems. As of this writing, local WIC agencies continue to work toward an FNS goal that every WIC local agency has designated breastfeeding experts on staff.

Breastfeeding Counseling in Tribal Communities

Tribal organizations manage WIC programs on tribal lands. While these programs are funded by federal WIC dollars, tribes often contribute significant additional resources of their own in the form of office and clinic space, and some cover additional costs such as salaries for breastfeeding coordinators (Henchy et al., 2000). Evidence suggests that breastfeeding counseling programs improve breastfeeding outcomes among Native American women (Long et al., 1995; Wright et al., 1997). Unfortunately, participation in tribally administered WIC programs has declined more than the national average. Estradé et al. (2023) conducted a study to document barriers for WIC participation in two tribal communities. They found three interconnected barriers: (1) reservation and food store infrastructure, (2) WIC staff interactions, and (3) integration between the community and state-level administration and bureaucracy. Their findings also emphasized the need to use systems approaches to understand how to improve access to and quality of WIC breastfeeding education using an information technology–facilitated approach to breastfeeding support (Estradé et al., 2023; see also Martinez-Brockman et al., 2025). See Box 4-3 for other promising approaches to WIC breastfeeding support.

BOX 4-3

Other Promising Approaches to WIC Breastfeeding Support

Regional Breastfeeding Liaisons (RBLs): The California WIC program adopted a model that directs a portion of its funds to support local WIC agencies that would like to hire/promote an RBL. The role of the RBL is to strengthen coordination of breastfeeding services for WIC participants in the region. RBL activities are based upon required statewide goal areas and regional goals. Promoting the use of consistent evidence-based breastfeeding messages in the community and coordinating and delivering breastfeeding training for health care providers, staff, and community groups, as appropriate, is part of the individual RBL’s annual action plan goals. RBLs facilitate seamless breastfeeding support by collaborating with health care providers, hospitals, employers, and the community. RBLs are located regionally throughout the state and work in four goal areas (California Department of Public Health, 2021):

1. Lactation accommodation: RBLs support and assist employers and community organizations in providing lactation accommodation and breastfeeding support to WIC participants.

2. Community-building: RBLs coordinate with community programs and coalitions to develop consistent breastfeeding messages, access to appropriate breastfeeding support services in the community, and continuity of care.

3. Hospitals: RBLs coordinate breastfeeding services between WIC and hospitals that serve WIC participants. Additionally, RBLs help hospitals attain Baby-Friendly status.

4. Health care providers: RBLs facilitate progress towards breastfeeding-friendly clinic practices for health care providers, community clinics, and public health programs.

Baby Behavior: Education for WIC Staff and Participants

When parents understand their infants' cues, they can meet their needs appropriately, resulting in an increase in exclusive breastfeeding and a decrease in formula feeding and overfeeding. Dr. Jane Heinig from the University of California, Davis Human Lactation Center, in partnership with the California WIC Program, documented that a primary reason new parents reported that they stopped breastfeeding was their perception of insufficient milk supply due to a crying infant (Heinig et al., 2009). The Baby Behavior education modules were developed to teach parents about typical baby behavior and include written materials and videos for staff and participants (e.g., the *Getting to Know Your Baby: Birth to 6 Months* brochure [California WIC Program, 2018]). These modules are now embedded in all staff and participant education materials throughout California WIC and at least six other state WIC programs (Arizona, [WIC Arizona, n.d.], Connecticut [Connecticut WIC Program, 2015], Minnesota [Minnesota Department of Health, 2023], Nebraska [Family Health Services, Inc., 2024], Nevada [Nevada WIC, n.d.], and Washington [Washington State Department of Health, n.d.]).

SOURCE: California Department of Public Health, 2021.

In summary, breastfeeding education and support are important components of WIC program services, supporting staff through required breastfeeding training and education and impacting participants through support, education, aids, and accessories. Funded separately, the evidence-based WIC breastfeeding peer counseling program successfully supports many WIC participants in achieving their breastfeeding goals, but funding is not currently adequate such that every mother has access to peer counseling support. Though breastfeeding education and support are mandated in the WIC federal guidelines and available across the United States, the level of support available to mothers can vary substantially. Core breastfeeding education and support are required, but access to breastfeeding aids, accessories, and peer counselors depends on funding decisions at the national, state, and local levels.

The WIC Food Package

Intersections with Breastfeeding

As mentioned, WIC regulations require the provision of food packages designed to meet the unique supplemental nutritional needs of each program participant. These regulations stipulate the minimum requirements for all food packages that states must adhere to, but there can be state-level variations in the specific products available (e.g., brands) or product form (e.g., canned, frozen, and/or fresh fruits and vegetables). The food packages for breastfeeding mothers are designed to provide incentives for breastfeeding initiation by offering additional foods to meet the higher caloric needs of the breastfeeding mother and to support continuation of breastfeeding by providing food benefits to breastfeeding mothers for 12 months rather than 6 months postpartum. Breastfeeding mothers whose infant receives commercial milk formula from WIC are to be supported to breastfeed to the maximum extent possible through staff support and by tailoring formula amounts to meet but not exceed the infant's nutritional needs (e.g., issue 1–2 cans versus 7–9 cans of formula, based on the amount of breastfeeding). Since the program's inception, breastfeeding women have received food benefits for themselves (12 months) for longer than women who were not breastfeeding (0–6 months) (National School Lunch and Child Nutrition Act Amendments, 1975).

To ensure maximum support of the newborn dyad, it is required that each caregiver receive a complete breastfeeding assessment (described above). This enables WIC staff to assign the appropriate food packages to the breastfeeding dyad. WIC regulations define three infant feeding variations with accompanying food packages for caregivers and infants, one of which is issued to the dyad based on the breastfeeding assessment: Fully breastfeeding (the infant does not receive any formula from WIC; mother receives the maximum amount of food to support her nutrient needs while breastfeeding), partially (mostly) breastfeeding (the infant is breastfed and receives some formula from WIC; mother receives less food than the fully breastfeeding mother and more food than the fully formula feeding mother), or fully formula feeding (infant receives the maximum amount of formula, mother receives less food than breastfeeding mothers). If feeding decisions change as the infant ages, the food package assignment can be changed. Training for all staff enrolling newborns is key to ensuring that participants are issued appropriate food packages and receive adequate breastfeeding support and counseling.

Key Changes to the WIC Food Package

Since WIC was created, its food packages have been reviewed twice to align with nutrition science. The first scientific review of the WIC food packages by the National Academies was released in 2006 (Institute of Medicine, 2006); it provided recommendations that led USDA to make the first substantial changes to the WIC food package since the program's inception. By October 2009, all states had implemented the changes, which included the addition of fruits and vegetables in the form of a cash-value benefit (at that time, \$6/month for children and \$8/month for women), whole grains were added, and juice and full-fat dairy were reduced. The 2009 food package change also required states to implement only two food package choices in the first month postpartum—fully breastfed and fully formula fed—to reduce the chance of formula interfering with the mother's milk production so that breastfeeding could be firmly established. State agencies have the option, however, to make available a third package in the first month that contains not more than one can of powder infant formula (containing up to 104 reconstituted fluid ounces) on a case-by-case basis. The goal is to provide the minimal amount of supplemental formula needed, while offering counseling and support to breastfeeding mothers.

Studies of the impact of having only two packages available in the birth month have been mixed. The largest study evaluating the impact of this rule on breastfeeding outcomes across multiple states was funded by USDA FNS and found that while issuance of the fully breastfeeding food package increased in the birth month, so did issuance of the full formula package (Abt Associates, 2011). No change in initiation or intensity of breastfeeding was observed, and a small increase in duration was noted. Thus, while no adverse impacts on breastfeeding were observed, withholding formula in the birth month did not have the intended impact of jumpstarting exclusive breastfeeding. Withholding formula in the first month was associated with many women taking the full formula offered (their only option if they felt they needed some formula), even if they were doing some breastfeeding. As documented in other studies, this may largely be because breastfeeding requires intensive education and support, with particularly intensive focus in the weeks immediately before and after delivery.

Another study examined the impact of the breastfeeding changes in the birth month in one state (Whaley et al., 2012). California embarked on an intensive WIC staff and participant breastfeeding education campaign starting 6 months prior to the 2009 food package change and implementation of the birth month rule. Breastfeeding rates increased substantially following implementation of the birth month rule, while issuance of the full formula package did not

increase. Thus, when pregnant participants were well educated about the benefits of initiating breastfeeding, were aware that breastfeeding support would be available from WIC throughout the perinatal period, and knew that the options for accessing formula from WIC in the month following the infant's birth would be very limited, they exhibited higher rates of breastfeeding initiation and duration (Whaley et al., 2012).

Together, these studies highlight the importance of pairing policy change with intensive education and support to increase rates of initiation and duration of breastfeeding. Abt Associates (2011) also recommended further increases to the economic value of the full and partial breastfeeding packages relative to the full formula package.

In 2014, the National Academies convened a second scientific committee to examine the WIC food packages and make recommendations to ensure alignment of the WIC food packages with advances in dietary science. Recommendations from the committee's 2017 report included further changes to the WIC food package to optimize balance and choice of foods for the WIC participant (NASEM, 2017). The recommendations, which were required to be cost neutral, sought to achieve better alignment in the provision of WIC supplemental foods. In light of the studies related to formula issuance and breastfeeding support, the committee also recommended further increasing the economic value of the full and partial breastfeeding packages relative to the full formula package. Recommendations included fruit and vegetable benefits for fully breastfeeding mothers at \$35/month for 12 months, for partially breastfeeding mothers at \$25/month for 12 months, and for fully formula feeding mothers at \$15/month for 6 months. The committee also recommended expanding the options available to families in the birth month, such that formula amounts could be calibrated to meet mothers' needs starting in the birth month (NASEM, 2017).

USDA included almost all of the National Academies' recommendations in the final WIC food package rule, released in April 2024. States are required to implement all changes by April 2026. In the period between 2017 and 2024, the American Rescue Plan Act enabled USDA to increase the cash value benefit for fruits and vegetables for all WIC participants, releasing the cost-neutral requirement that constrained the 2017 recommendations. Amounts for fruits and vegetables increased to \$52/month for fully and partially breastfeeding women, through 12 months postpartum. Women receiving the full formula package receive \$47/month for fruits and vegetables, through 6 months postpartum. Thus, while the amounts received by women receiving the breastfeeding packages differ from the amount received by women who are fully formula feeding, the magnitude of difference (\$52 vs. \$47 rather than \$35 vs. \$15) is a substantial departure from the 2017 recommendations and does not set up a notably strong immediate incentive within the food benefits received by breastfeeding versus nonbreastfeeding women in the first 6 months postpartum.

In summary, the WIC food packages, which include only specific healthy foods known to be deficient in the average diets of American women and young children, are an important component of the WIC program. Given the greater energy needs to support successful breastfeeding, the food package for breastfeeding women provides more food, for a longer duration, than the food package for postpartum nonbreastfeeding women. While the food package for breastfeeding women may help support a woman's decision to initiate and maintain breastfeeding, and food package policy reflects an effort to support breastfeeding through larger benefits for the breastfeeding dyad, it is clear from the literature that food alone is not sufficient to support breastfeeding. The provision of healthy food paired with intensive education and

support for breastfeeding provides optimal support for women to achieve their breastfeeding goals.

Commercial Milk Formula and WIC

WIC provides iron-fortified commercial milk formula (i.e., infant formula) for babies who are not fully breastfed at no cost to families. In June 2024, 857,174 infants ages 0–12 months received the fully formula feeding package; 390,012 infants received the partially breastfeeding package; and 239,897 infants received the fully breastfeeding package (USDA, 2024d). This means that 58% of infants currently receive the full amount of formula available from WIC, 26% receive some formula, and 16% receive no formula. About half of the commercial milk formula purchased each year in the United States is provided to WIC participants.

The provision of commercial milk formula in WIC has been a controversial topic, particularly as it relates to breastfeeding. On one hand, making formula available through WIC is seen as conflicting with breastfeeding support; some studies have shown that breastfeeding rates of WIC participating families lag behind those of income-eligible nonparticipants, though the gap has been narrowing in recent years, particularly among non-Hispanic Asian and Pacific Islander and American Indian/Alaska Native mothers (Thoma et al., 2023). On the other hand, access to formula from WIC is seen as a lifeline, based on evidence that lack of access may force families to turn to unhealthy practices (e.g., diluting formula with extra water or cereal, preparing smaller bottles, saving leftover mixed bottles for later, substituting with homemade formulas) that could confer significant risk to the health and growth of the infant. Because of the severity of outcomes that can result from insufficient access to appropriate nutrition, particularly before complementary foods can begin to be introduced at 6 months of age, WIC infants who are not breastfed from birth through age 5 months receive the quantity of formula needed to meet 100% of their caloric needs. That said, the overreliance on commercial milk formula in the United States (as noted in Chapters 2, 4, and 6) is structural and systemic.

Commercial Milk Formula Recall of 2022 and Associations with WIC Breastfeeding

In 2022, several brands of commercial milk formula were recalled because of potential contamination with dangerous bacteria (see later section of this chapter). This resulted in major shortages with dire impacts on many families who depended on commercial milk formula, particularly those with sick babies requiring specialized formulas. The recall provided a window into the fragility of the commercial milk formula manufacturing system in the United States, as well as into infant feeding patterns when access to formula is limited. Notably, evidence suggests that the uncertainty around access to formula due to the recall was associated with increased breastfeeding among WIC participating infants. According to national monthly WIC participation data, in the month following the shortage (March 2022), the number of fully formula feeding infants decreased 5%, the number of partially breastfed infants increased 4%, and the number of fully breastfed infants increased 5%, compared with the same month in the previous year. By October 2022, the number of fully formula feeding infants decreased 8%, the number of partially breastfed infants increased 15%, and the number of fully breastfed infants increased 29% from 1 year before (Figure 4-1) (Hodges et al., 2024).

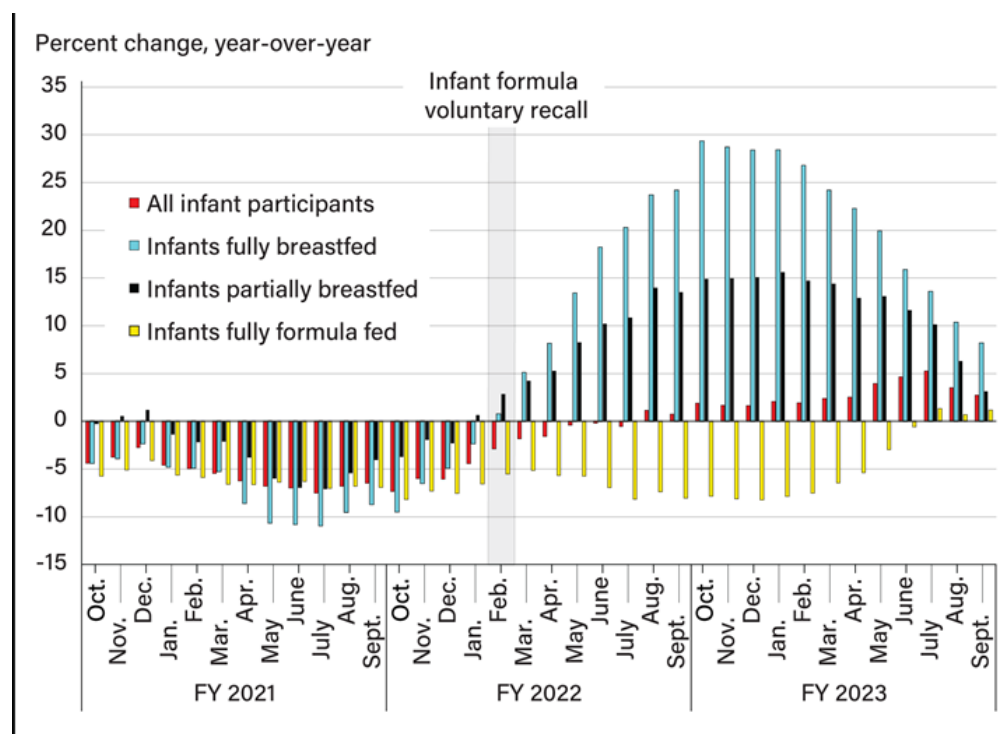


FIGURE 4-1 Percentage change in infant WIC participation, October 2021–September 2023.

NOTES: Fully breastfed infants are certified to receive WIC benefits but are not issued food benefits through the first 5 months because the infants are assumed to be breastfed exclusively. Partially breastfed infants receive some formula from WIC. FY = fiscal year; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.

SOURCE: Hodges et al. (2024).

Formula Contracts and Costs Associated with Formula and Breastfeeding Food Packages

WIC agencies have been required to use competitive bidding to procure commercial milk formula since 1989 (under the Child Nutrition and WIC Reauthorization Act) unless another cost-containment approach yielded equal or greater savings. This competitive bidding process was created in response to increasing commercial milk formula prices in the 1980s. Unlike other food assistance entitlement programs—such as SNAP and the National School Lunch Program, in which anyone who meets eligibility criteria can receive the food assistance—WIC is a discretionary program. This means funding is determined by Congress annually, and eligible individuals may not be served once annual funding appropriations are exhausted. Thus, as WIC program costs increased in the 1980s because of increases in the cost of commercial milk formula, fewer participants could be served by the program. As of this writing, no other cost-containment approach has been identified, so all states require commercial milk formula companies to bid on WIC contracts by offering rebates on the lowest national wholesale price for a standard amount of formula redeemed by WIC participants in that state. The WIC state agency then awards a single-supplier contract to the manufacturer offering the highest discount. The formula rebates effectively contribute to additional food funds that allow WIC to serve more participants. Infant formula rebates in FY 2023 generated \$1.58 billion in food funds, allowing WIC to serve around 2 million more participants annually (USDA, 2024d). A deeper analysis of WIC’s economic role in the formula market is outside the scope of the committee’s charge, which did not include examination of economic or market dynamics.

The 2024 National Academies report resulting from the commercial milk formula recall and shortage, titled *Challenges in Supply, Market Competition, and Regulation of Infant Formula in the US*, outlined key implications for WIC-related formula contracts. The study committee concluded that “the infant formula brand issued by state WIC agencies has resulted in significant price discounts for WIC, in the form of rebates, enabling WIC to serve more participants” (NASEM, 2024, p. 7). The winning bidder also has marketing advantages in the non-WIC market (e.g., shelf space, use by hospitals). The report also concluded that WIC’s competitive bidding process

is not the driver of industry concentration at the national level. Eliminating WIC’s competitive bidding process for infant formula would likely lead to higher wholesale prices and, ultimately, higher retail prices for infant formula for all consumers, higher federal WIC costs, and increased incentives for manufacturers to market infant formula to WIC participants. (NASEM, 2024, p. 209)

However, an FTC (2024) report describes public feedback that expresses growing concerns about the current system’s impact on competition and resilience. Critics of the current model argue that the single-supplier model heavily favors large manufacturers, forecloses smaller competitors, limits consumer choice, and makes state markets vulnerable to supply disruptions, as each state becomes reliant on one dominant supplier (FTC, 2024). FTC (2024) observed that the program has notable spillover effects. For example, negative spillovers include potential increases in retail formula prices for non-WIC purchasers, disproportionately affecting families who have limited income but are just above the WIC eligibility threshold (FTC, 2024). But public feedback also showed that the current WIC single-supplier rebates reduce WIC program costs and expand access; nationwide, the competitive bidding process yields \$1–\$2 billion in rebates annually that provide WIC benefits to more than 2 million low-income women, infants, and children.

The 2022 formula crisis (discussed further below) continues to have ripple effects on the U.S. commercial milk formula market and may exert pressure on the WIC competitive bidding process in the years ahead. Therefore, it is necessary to be clear about WIC costs associated with breastfeeding and nonbreastfeeding dyads. It was beyond this committee’s charge to calculate pre- and postrebate costs of commercial milk formula or to model changes in food package costs by projecting increases or decreases in infant formula amounts in the infant food packages. It was also beyond the scope of this report to model the impact of increases in breastfeeding rates that could come about by adopting recommendations found in this report on increases in issuance of the fully and partially breastfeeding food packages. However, such modeling was required for the 2017 National Academies WIC food package report, which serves as an example of how such estimates could be generated (NASEM, 2017).

What is known is that, currently, commercial milk formula rebates confer significant savings to the U.S. government in its procurement of formula for infants receiving WIC. In addition, WIC food package rules dictate issuance of WIC food benefits for breastfeeding women through 12 months postpartum, compared with 6 months postpartum for non-breastfeeding women. Thus, initiatives that are successful at increasing breastfeeding rates will confer additional WIC food benefits to breastfeeding mothers for an additional 6 months, as well as continued breastfeeding support from WIC staff. Based on the 2016 analysis (accompanying NASEM, 2017), the additional food costs for mothers for these 6 additional months would be largely offset by the reductions in commercial milk formula needed for the infant. However, the increased Nutrition Services Administration (NSA) investments associated with increased staff

support for breastfeeding women would be substantial, requiring additional investment in the program. The 2016 analysis would need to be revised to align with the recent changes to the WIC food packages and to account for any changes to the formula contracting process that could impact the rebate structure for commercial milk formula. Any changes to the formula contracting process that change the rebate structure for infant formula will have a direct impact on WIC food package costs. Given that WIC is a discretionary program, cost volatility of the food packages related to changes in breastfeeding rates and/or changes in the formula rebate system have a very direct impact on the numbers of families that can be served by the program.

Conclusion 4-3: Substantial research demonstrates that WIC breastfeeding support, including peer counseling, can increase breastfeeding rates. However, these activities are not standardized across the United States, are not funded to the level needed, and would need to be scaled up to adequately meet the needs of all breastfeeding dyads.

Recommendation 4-3: Congress should ensure that the U.S. Department of Agriculture has adequate funding for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), such that every eligible pregnant and postpartum mother in every state, territory, and tribal organization has access to the full complement of WIC breastfeeding support services. This includes (a) adequate base funding for WIC, (b) exploration of the most appropriate funding model (e.g., discretionary or mandatory), and (c) expanded funding of the WIC breastfeeding peer counselor program such that all eligible pregnant and postpartum women can receive peer support to meet their breastfeeding goals.

BUILDING RESILIENCE IN EMERGENCIES, DISASTERS, AND SUPPLY CHAIN DISRUPTIONS

Humanitarian emergencies, disasters, and other crises often intersect, compounding their impact. The 2022 infant formula shortage exemplified this, as the COVID-19 pandemic weakened existing manufacturing supply chains and further exacerbated disruptions to the major supply of infant formula in the United States in response to a recall of specific products (NASEM, 2024). Climate-related disasters, such as the Jackson, Mississippi, water crisis (Tomori, 2023) and more recently the Los Angeles wildfires (Ewing-Chow, 2025), as well as events such as the Flint, Michigan, water crisis (Michigan Civil Rights Commission, 2017), have left many families without access to safe water, food, and shelter and unable to safely prepare commercial milk formula.

Current research suggests that in response to threats to infant feeding security, policy attention has been largely focused on commercial milk formula but not on breastfeeding. For example, Harrigan et al. (2025) analyzed 57 federal policy changes related to infant feeding between the years of 2014 to 2023 and reported that there was a statistically significant

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relationship between the 2022 infant formula shortage and policies enacted to address the supply of infant formula. In contrast, there was not a statistically significant change in policies focused on breastfeeding or other dimensions of infant feeding, suggesting that policy change to support infant feeding in emergencies was narrow in scope (Harrigan et al., 2025).

Together, emergencies, disasters, and supply chain disruptions underscore the interconnected nature of breastfeeding and formula feeding systems. Breastfeeding is an essential component of emergency preparedness and response. Effective planning and coordination can safeguard infant and child health during emergencies (Tomori, 2023; Tomori & Palmquist, 2022; Tomori et al., 2020). Infants and young children are particularly vulnerable to illness and infection in natural disasters and public health emergencies (Bartick et al., 2024). Breastfeeding is the safest way to feed infants in emergency situations, but few resources are in place to provide skilled breastfeeding support to address breastfeeding challenges in emergencies, nor to mitigate the substantial risks associated with using commercial milk formula in emergencies. Federal agencies as well as state, tribal, and local emergency management plans can reduce disruption by incorporating well-coordinated infant and young child feeding emergency planning into emergency preparedness. Coordination with community organizations and coalitions is needed to ensure that breastfeeding resources, peer support, and emergency access to breastfeeding supplies and donor human milk are possible during disasters and emergencies. These practical and structural protections are necessary to ensure that historically and currently underserved communities are better supported during emergencies.

Conclusion 4-4: Over the last decade, humanitarian emergencies, disasters, and supply chain disruptions have exposed vulnerabilities in the current landscape of infant feeding; these events can make it difficult for parents and caregivers to access the information and support they need to safely and appropriately feed their infants and young children. Improving emergency planning and preparedness for infant and young child feeding in emergencies would help ensure that all families receive the support they need to safely feed their children, minimize risk, and maximize infant and child health.

Recommendation 4-4: The Federal Emergency Management Agency, state and local emergency management agencies, and nonprofit organizations such as the Red Cross should incorporate infant and young child feeding in emergencies into their emergency preparedness and response guidance and plans. They should share this guidance with states, tribes, territories, and local health jurisdictions and fund efforts that address infant and young child feeding needs during natural disasters and public health emergencies. These actors should collaborate with breastfeeding support organizations in this process, including state, tribal, and community coalitions, as well as offices providing access to the Special Supplemental Nutrition Program for Women, Infants, and Children.

FUTURE DIRECTIONS

Current efforts by government, nongovernmental, and community-based organizations to support breastfeeding often operate in silos, with limited coordination to prevent duplication and maximize the impact of available resources. Strengthening collaboration across these sectors could enhance the visibility of public health supports, empower communities, and ensure that families receive consistent, high-quality support. Similarly, breastfeeding coalitions across all 50 states, U.S. territories, and many tribal nations play a vital role in mobilizing local and state initiatives. However, many of these coalitions are constrained by limited size and inadequate resources, reducing their overall impact.

Improving coordination between community (Chapter 3) and public health efforts and the health care system (Chapter 6) is also essential to ensure continuity of care in breastfeeding support. Yet, this integration may be lacking. Most state health departments do not have dedicated staff for breastfeeding activities beyond those within the WIC program. This gap in state-level infrastructure makes it difficult to implement new breastfeeding initiatives or scale successful programs.

WIC plays a critical role in supporting breastfeeding, alongside other government public health programs, but faces several persistent challenges that hinder broader progress—most notably that funding is not sufficient for reaching all eligible participants. Although federal, state, and philanthropic funding has helped establish and sustain many of the programs highlighted in this chapter, funding for key initiatives has remained stagnant. Without increased and sustained investment, community-based and public health efforts will continue to fall short of meeting national breastfeeding priorities.

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5

Messaging, Media, and Marketing

This chapter explores the messaging and media environment related to breastfeeding promotion. It also describes the current U.S. regulation of messaging and marketing of commercial milk formula, which can disrupt breastfeeding across a variety of settings.

BREASTFEEDING MESSAGING, MEDIA, AND CAMPAIGNS

This section offers a primer on public health communication and describes global evaluations of breastfeeding promotion campaigns. It then reviews U.S. national breastfeeding promotion campaigns, the available evidence on effects of these efforts, and the key actors who are delivering these messages. Chapter 4 explores other public health programs and initiatives.

The media environment (including entertainment, advertising, print, news, and digital and social media) plays an important role in shaping public understanding of health issues, establishing norms for social behavior, setting the agenda for what issues are deemed important, and framing those issues in ways that invite assigning blame for social problems and responsibility for addressing them (Shehata et al., 2021). Social actors compete for limited public attention through paid (marketing, advertising, promotion, and sponsorship across platforms) and unpaid efforts (advocating for favorable portrayals in entertainment, news, and social media) to shape the public communication environment about a particular health topic.

Public health agencies and advocates often develop media campaigns as part of a larger, multilevel strategy for health promotion (Niederdeppe et al., 2025). These efforts—sometimes conceptualized as social marketing campaigns, other times as public health communication campaigns—have been implemented across the globe on a wide variety of health topics and concerns (Pérez-Escamilla et al., 2012). Public health communication campaigns use a variety of media channels and platforms (including broadcast, print, digital and social media) to reach targeted audiences with messages designed to promote public health and well-being (Niederdeppe et al., 2025). All told, there is an abundance of evidence that media campaigns can contribute to meaningful changes in health behavior at the population level (Wakefield et al., 2010). Successful campaigns operate in coordination with community-, systems-, and policy-level interventions that increase opportunities for repeated, multifaceted, and consistent messaging; a supportive social and normative environment; and the elimination of financial and structural barriers to engaging in the behavior. Public health scholars and practitioners generally agree that media campaigns are a key component of comprehensive population health promotion efforts (Community Preventive Services Task Force, 2014; U.S. Department of Health and Human Services [HHS], 2010; Wakefield et al., 2010), including promoting breastfeeding (Pérez-Escamilla et al., 2012; HHS, 2011).

Systematic reviews of the literature and social and behavioral change frameworks for public health communication campaigns identify components that enhance the likelihood of their success: (a) sufficient and sustained funding to ensure that the campaign can achieve frequent and widespread message exposure; (b) widespread access to relevant services and resources that support the behavior; (c) a public policy environment that reduces barriers to performing the behavior, creates financial or social incentives for engaging in it, and reduces exposure to competing marketing; (d) rigorous and ongoing formative research to inform the development of campaign messages; and (e) rigorous independent evaluation of the campaign to document its impact and inform its ongoing evolution (Wakefield et al., 2010; see Table 5-1).

TABLE 5-1 Key Components of Public Health Communication Campaigns

Factor	Implementation of a Social and Behavior Change Framework in a Breastfeeding Campaign
Sufficient and sustained funding to ensure that the campaign can achieve frequent and widespread message exposure	Congress and federal agencies (e.g., HHS, USDA, CDC) allocate resources and coordinate to develop a national breastfeeding campaign strategy
Widespread access to relevant services and resources that support the behavior	Health insurance covers breastfeeding supplies and skilled lactation support: WIC breastfeeding services offered universally
A public policy environment that reduces barriers to performing the behavior, creates financial or social incentives for engaging in it, and reduces exposure to competing marketing	Universal provision of Baby-Friendly hospitals; 6 months of paid family and medical leave; U.S. federal agencies increase regulation of the marketing, labeling, and advertising of commercial milk formula
Rigorous and ongoing formative research to inform the development of campaign messages	Social and behavioral scientists are engaged in formative research for breastfeeding campaigns using both qualitative and quantitative methods
Rigorous independent evaluation of the campaign to document its impact and inform its ongoing evolution	Federal agencies allocate resources for independent research organizations to evaluate campaign efforts using rigorous methods

NOTE: CDC = U.S. Centers for Disease Control and Prevention; HHS = U.S. Department of Health and Human Services; USDA = U.S. Department of Agriculture; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.

SOURCE: Committee generated. Material from Wakefield et al., 2010.

One ongoing challenge to breastfeeding promotion campaigns across the globe is a lack of systematic evaluation and documentation of effects. The committee reviewed available evidence from peer-reviewed journals (e.g., previous National Academies consensus reports, U.S. federal government documents) to examine available evidence on mediated breastfeeding promotion campaigns and their effects. One common theme in the literature on breastfeeding promotion over the last 35 years is acknowledgement of the lack of systematic campaign

evaluations. Green (1989) noted that the full potential of mass media campaigns to promote breastfeeding were not yet realized, as few systematic or large-scale media campaigns existed. Two decades later, Wakefield et al. (2010) lamented that “although mass media programmes to promote breastfeeding have been mounted, reviews from the 1990s onwards seem scarce or non-existent” (p. 9). More recently, Rollins et al. (2016) observed,

Findings from the one study we identified on the effect of mass or social media on breastfeeding suggested that it has had a major effect on early initiation of breastfeeding . . . [but digital and] social media needs additional study in view of its wide and effective use to market breastmilk substitutes and other products. (p. 493)

Evaluation of Breastfeeding Promotion Campaigns: Global Examples of Success

Despite these limitations to the broad body of evidence, several studies from countries across the globe suggest that media campaigns are an important component of comprehensive breastfeeding promotion efforts. See Box 5-1 for an extended example of successes from efforts in Brazil. Additionally, a 2-year breastfeeding promotion campaign (1988–1990) in Jordan that included placement of messages on radio and television was attributed in part to increases in initiation of breastfeeding within 6 hours of birth at public hospitals and among home births (McDivitt et al., 1993). The 10-year, USAID-funded LINKAGES¹ program to improve breastfeeding practices in Bolivia, Ghana, and Madagascar included behavior change communication messaging via interpersonal communication, community mobilization efforts, and mass media (Quinn et al., 2005). Repeated, cross-sectional population surveys revealed increases in each country in early initiation of breastfeeding (within 1 hour) and exclusive breastfeeding at 6 months. The 6-year Alive & Thrive campaign (2009–2014) in Bangladesh and Vietnam included mass media alongside interpersonal counseling, community mobilization, and policy advocacy to promote exclusive breastfeeding; it used a cluster-randomized trial to demonstrate large increases in exclusive breastfeeding in both countries and increases in early initiation of breastfeeding in Bangladesh (Menon et al., 2016; see Rollins et al., 2016, for additional detail on the campaign). While early initiation declined in both intensive and nonintensive intervention groups in Vietnam, declines were significantly slower in the intensive intervention group (Menon et al., 2016). Another evaluation of the Vietnam Alive & Thrive campaign associated exposure to breastfeeding television spots to higher rates of exclusive breastfeeding (Nguyen et al., 2017). Finally, a 3-year intervention study (2017–2020) in Egypt employed social marketing approaches through print media as part of a community-based breastfeeding promotion intervention in two villages (Metwally et al., 2024). Post-test surveys found that rates of exclusive breastfeeding increased in the intervention village and were higher than in the control communities in the post-test assessment. The Alive & Thrive–supported breastfeeding programs strongly demonstrate the merits of including social and behavioral change communications approaches as part of national breastfeeding programs (Pereira-Kotze et al., 2025).

¹ LINKAGES = Linkages Across the Continuum of HIV Services for Key Populations Affected by HIV

BOX 5-1 **Highlighting Success: Lessons From Brazil**

The Brazilian National Breastfeeding Program likely contributed to an increase in median breastfeeding duration in Brazil from 2 months in 1975 to 10 months in 2000 (Rea, 2003) and to continued increases thereafter (Castro et al., 2023; Venancio et al., 2013). Improvements in exclusive breastfeeding rates among infants under 6 months of age have also been documented (Castro et al., 2023; Venancio et al., 2013). The Brazilian National Breastfeeding Program began in 1980, after many years with little improvement in median breastfeeding duration. At that time, the goal of the launching phase was to mobilize stakeholders such as politicians, journalists, and other decision-makers and opinion leaders. Well-known pediatricians delivered the messages that “breastfeeding saves money” (as this was during a time of economic crisis) and “we know what works to promote breastfeeding.” At this stage, the ministers of Health and Social Development approved the launching of the National Breastfeeding Promotion Program. In the next phase, from 1981 to 1986, a phase that Rea (2003) refers to as “social communication,” breastfeeding improvements began.

The initial goals of the Brazilian campaign were to generate a social movement through key stakeholders and to develop and launch well-designed mass media campaigns (Rea, 2003). The first campaign was implemented in 1981, with messages promoting breastfeeding for at least 6 months. Stakeholders included civil society, community- and faith-based organizations, and mother support groups. The target audience was reached by TV; radio; and messages on lottery tickets, utility bills, and bank statements. Newspaper articles targeted opinion leaders, and articles in professional journals and meetings were developed for health practitioners and academics, especially members of the Brazilian Association of Obstetrics & Gynecology and the Brazilian Association of Pediatrics.

The second social communication phase was implemented in 1982–1983, building from lessons learned during the first phase (Rea, 2003). It used formative research to refine messaging in the context that the population had been sensitized to the breastfeeding campaign. As a result, the campaign included empowering messages for mothers, such as “continue breastfeeding; every woman can,” and “you can produce enough milk.” The campaign also urged mothers to “make up your own mind,” to address the bias that many pediatricians had for formula. As an example of how they reached their audience, a popular soap opera included pro-breastfeeding messages and celebrities, including soccer star Pelé, appeared in TV public service announcements (Pérez-Escamilla, 2012; Rea, 2003).

Brazil continued implementing its marketing mix after 1983 by following a well-coordinated and integrated approach with built-in monitoring systems (Pérez-Escamilla, 2012; Pérez-Escamilla et al., 2012). The Brazilian experience indicates that making breastfeeding the social norm can be done with a solid “4 Ps” social marketing strategy (product, price, place, and promotion). Pérez-Escamilla et al. (2012) argued that changing the defaults in major societal contextual factors—including public opinion, work-related policy and legislation, and protection against unethical marketing—is needed for new or redesigned social marketing campaigns to be able to nudge women to practice optimal infant feeding choices (Institute of Medicine [IOM], 2011; Pérez-Escamilla, 2012; Pérez-Escamilla et al., 2012).

Social marketing approaches expanded to legislating and enforcing the World Health Organization’s *International Code of Marketing of Breast-Milk Substitutes*, implementing and scaling up the Baby-Friendly Hospital Initiative, and investing in community-based breastfeeding support. Strategies also included legislative actions to support maternity leave and breastfeeding in the work environment. As a result of its national breastfeeding program, Brazil also implemented what has now become one of the most extensive human milk bank networks in the world, which they have also used to market the social and economic value of

breastfeeding (Carrijo et al., 2022; Gutiérrez & de Almeida, 1998). Investments in breastfeeding education and lactation management training and education that began after 1983 continue to be strongly active to date (Spaniol et al., 2020).

An analysis of the Brazilian program indicates that the factors that facilitated scale-up and sustainability through the 4 Ps social marketing approach included (1) evidence-based advocacy; (2) political will and legislation; (3) workforce training and program implementation at the facility and community levels; (4) innovative, culturally appropriate communications campaigns that include celebrities; (5) research, monitoring, and evaluation; (6) visible community events (e.g., breastfeeding week); and (7) multisectoral engagement and coordination (Pérez-Escamilla, 2012). These findings informed the development of the Breastfeeding Gear Model (Pérez-Escamilla et al., 2012) and corresponding Becoming Breastfeeding Friendly initiative to empower governments across the globe to improve the implementation, scale-up, and sustainability of their national breastfeeding programs (Pérez-Escamilla et al., 2023).

SOURCES: Carrijo et al., 2022; Gutiérrez & de Almeida, 1998; IOM, 2011; Pérez-Escamilla, 2012; Pérez-Escamilla et al., 2012, 2023; Rea, 2003; Spaniol et al., 2020.

Previous National Breastfeeding Promotion Campaigns in the United States

The committee's review of the available evidence revealed that breastfeeding promotion campaigns in the United States have not been subject to the same level of rigorous evaluation as these international case studies. The National Breastfeeding Ad Campaign, developed by HHS in partnership with the Ad Council from 2004 to 2006, was the first coordinated national effort to promote breastfeeding in the United States (Merewood & Heinig, 2004). The campaign was designed to increase breastfeeding rates to 75%, with a particular focus on increasing rates among African American women and first-time mothers, and to encourage exclusive breastfeeding for the first 6 months. Focus groups were conducted in several areas before ad development. According to Haynes (2011), while the campaign relied on donated airtime, it received the equivalent of \$30 million in advertising in its 2 years, in contrast to the \$80 million spent by the commercial milk formula industry on advertising over the same period. Billboards were the most popular vehicle and "Babies were born to be breastfed" the most popular message, though the broader campaign strategy emphasized the risks of not breastfeeding, as opposed to the benefits of doing so (Institute of Medicine [IOM], 2011). A third component of the campaign was a Breastfeeding Helpline, managed on weekdays from 9am to 5pm and a website for breastfeeding information.

The campaign reported that about 30% of U.S. women saw the campaign and that 38% of mothers with less than high school education were aware of the ads (Haynes, 2011). At the same time, they also reported that women who were aware of the campaign had lower rates of breastfeeding for more than 1 month (66% for those aware vs. 71% for those who were not) and more than 6 months (35% for those aware vs. 41% for those not aware) and exclusive breastfeeding for more than 3 months (16% versus 41%) (Haynes, 2011). However, these data were never reported in a peer-reviewed journal and there are insufficient methodological details available to assess the rigor and validity of the analysis and whether alternative explanations (i.e., that the campaign's strategy of targeting low-income women produced a spurious association between exposure and breastfeeding rates) may explain these patterns. The campaign did spark widespread controversy and backlash, however, over its decision to emphasize the

risks of not breastfeeding and emphasize individual decisions of the mother over the broader social, structural, and policy environment that is not conducive to supporting women who breastfeed (e.g., Kukla, 2006; Wolf, 2007). As reported by Merewood and Heinig (2004), the decision to emphasize risks was based on an intuition that messaging about risks was more likely to produce behavioral changes than messages about benefits and was informed by an extensive set of focus groups among expectant mothers, formula-feeding mothers, breastfeeding mothers, expectant fathers, and expectant grandmothers. A wide body of research has since documented that there is no inherent advantage to risk-versus-benefits-based messaging. In fact, O’Keefe and Jensen (2007) suggested a slight persuasive advantage for framing messages in terms of benefits (see also O’Keefe & Jensen, 2006). Furthermore, many pitfalls are associated with formative research strategies that rely exclusively on focus group assessments of the perceived impact of campaign messages at scale (see O’Keefe, 2018). A broader set of formative research methods (including population-based surveys and small-scale, pilot-randomized messaging trials) is typically recommended before launching a large-scale, national media campaign (see Niederdeppe et al., 2025).

Current Breastfeeding Promotion Campaigns in the United States

While U.S. breastfeeding promotion campaigns have not been subject to systematic evaluation, the committee saw value in characterizing current campaigns by federal agencies designed to promote and support breastfeeding. These descriptions helped to inform recommendations about best practices for funding mechanisms and media campaign interventions for promoting and supporting breastfeeding.

Loving Support Makes Breastfeeding Work

Since 1997, the U.S. Department of Agriculture (USDA) has supported the longest-running breastfeeding promotion campaign in the United States. From 1997 to 2018, the campaign ran under the slogan, “Loving support makes breastfeeding work.” The campaign incorporated social marketing principles to increase breastfeeding initiation rates and duration among participants in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (Pérez-Escamilla, 2012). Several studies have explored use and perceptions of Loving Support materials, toolkits, training activities, and outreach (Mitra et al., 2003a; Mitra et al., 2003b; Pellechia et al., 2017), and the campaign has periodically convened communication experts to advise the campaign’s development (IOM, 2011); however, the campaign’s impact on breastfeeding rates has not been evaluated comprehensively.

The campaign followed best practices for using rigorous formative research to inform campaign design. For instance, in 2011, the USDA Food and Nutrition Service (FNS) commissioned the National Academies to convene experts to determine whether there was a need to redesign the campaign and, if so, how (IOM, 2011). The committee recommended that FNS redesign the campaign to make it more relevant to women’s current breastfeeding support needs and to the WIC program itself. In response, in 2014, FNS hired a marketing firm to conduct a 3-year formative research process, which led to the “WIC Breastfeeding Support: Learn Together, Grow Together” breastfeeding promotion and support campaign. This revised campaign replaced WIC’s Loving Support campaign in 2018 (USDA, n.d.-a).

WIC Breastfeeding Support: Learn Together, Grow Together

WIC Breastfeeding Support is a social marketing campaign based on the 4 Ps approach (Pérez-Escamilla, 2012). Its tagline, “Learn together. Grow together,” acknowledges that breastfeeding is a journey that takes learning and support to succeed and that it gets easier along the way (USDA, n.d.-a). The campaign’s primary target audiences are WIC-enrolled women in late pregnancy and moms in the first 6 weeks postpartum. The secondary audience is the mother’s support system, and the tertiary audience is the WIC state and local staff and community partners. The primary goal of the program is to provide support, encouragement, and resources to moms who choose to breastfeed. The key behavioral outcome is to increase the proportion of women who meet their breastfeeding goals (which can include any breastfeeding and exclusive breastfeeding). The program focuses on (1) improving participants’ awareness of WIC breastfeeding services; (2) increased knowledge about breastfeeding biology and physiology, with a strong emphasis on milk production; (3) increased breastfeeding skills, including reading babies’ feeding cues; (4) proper latching and positioning; (5) breastmilk expression; (6) increased breastfeeding self-efficacy; and (7) increased support from family, friends, and others (USDA, n.d.-a).

WIC Breastfeeding Support integrated existing breastfeeding resources—such as breastfeeding and nutrition classes, trained peer counselors, and providers with the International Board Certified Lactation Consultant® designation—with newly developed resources, including a comprehensive website (USDA, n.d.-b), posters, educational materials, videos, digital and social media engagement activities, and a “buddy” program. There are also materials available for state and local WIC staff and partners on ways to implement and benefit from WIC Breastfeeding Support (USDA, n.d.-c).

The campaign website is designed as an easy-to-follow four-stage process along the breastfeeding journey. (1) The Learn stage (before baby is born) takes the user to a host of educational materials addressing key topics such as breastfeeding benefits, setting breastfeeding goals, breastfeeding basics (e.g., how breastmilk is produced), common breastfeeding problems that can be anticipated and how to prevent them, breastfeeding rights, and creating social support for breastfeeding. (2) The Start stage adds topics such as how to get breastfeeding support from WIC, maternal nutrition during lactation, baby’s latch and positioning, and managing common breastfeeding problems (e.g., engorgement, low milk supply, sore nipples, milk expression, expressed milk feeding and storage). (3) The Overcome stage acknowledges that breastfeeding is not easy and that it requires a lot of support to make it work. It covers in greater depth and adds to the topics covered in the previous two stages, including breastfeeding accommodations at work and child development topics, and a series of videos featuring a wide diversity of women explaining how they overcame breastfeeding challenges. (4) In the last stage, Thrive, women and their babies are congratulated for their success with their breastfeeding journeys and specifically asked to become a peer counselor. Additional information includes bottle use, traveling with baby, returning to work or school, and introduction of complementary foods.

Although the WIC Breastfeeding Support campaign is based on sound social marketing principles and formative research, the committee could not identify studies assessing the implementation process or impact of the campaign. As noted earlier, the lack of rigorous and independent evaluation of breastfeeding promotion campaigns in the United States (including the campaigns discussed in this section) is a major gap in knowledge that needs to be addressed.

It's Only Natural

The most recent breastfeeding ad campaign through the HHS Office on Women's Health (OWH) is titled "It's Only Natural: Mother's Love, Mother's Milk." This campaign includes web-based education on various topics, including "What is so great about breastfeeding?," "What makes a good latch?," and "What do other moms say about breastfeeding?" (OWH, 2022). Other resources include sections on breastfeeding basics, secrets to success, addressing myths from the African American community, overcoming challenges, and fitting breastfeeding into your life, as well as videos with mothers telling their breastfeeding stories and downloadable handouts (OWH, 2022). The OWH National Women's Health and Breastfeeding Helpline is still available to families 9am–6pm (Eastern time) and answered by peer counselors, who can refer them for additional help if needed. Like the WIC campaign described above, the committee could not identify published studies assessing the implementation process or impact of this campaign.

Community-Led Campaigns

Communities have also developed their own ad campaigns to promote breastfeeding. For example, in Memphis, Tennessee, an ad campaign started with black-and-white billboards and bus stop signs that read "Babies were born to be breastfed" in an area of high infant mortality and low breastfeeding rates. With buy-in from community partners in the infant mortality reduction space, the next phase included a billboard with a local mother of color breastfeeding the newborn while the father and toddler looked on. This billboard was in a strategic location and maintained for 2 years, and many bus stop signs also displayed the image. The campaign distributed posters with this image to multiple health care facilities in the area and most birth hospitals. Finally, after community focus group work, a third campaign was launched, with images of multiple races, ethnicities, ages, religion, and abilities. The slogans were designed by focus group participants. As is the case for USDA and WIC campaigns, the committee could not identify studies assessing the implementation process or impact of this campaign.

DIGITAL AND SOCIAL MEDIA AND ONLINE SUPPORT

The committee also examined available evidence from studies about breastfeeding promotion and support messages in digital and social media. This provided the committee with additional information about the potential for media campaign interventions to support breastfeeding and address racial/ethnic and socioeconomic variances in the availability of information and sources of social support.

An emerging body of research has explored how breastfeeding mothers seek, share, and receive social support in online communities (Orchard & Nicholls, 2022; Reicher & Spatz, 2024). Breastfeeding mothers regularly seek informational, emotional, and instrumental support (e.g., to coordinate milk sharing; see Perrin et al., 2014) through a variety of online platforms. These platforms range from commercial sites designed to reach parents (e.g., babycenter.com's Breastfeeding Support and Help community forum; Lebron et al., 2020); organically emergent groups within social media platforms, such as Facebook, Twitter/X, and Instagram (Black et al., 2020; Bridges et al., 2018; Marcon et al., 2019; Morse & Brown, 2021; Moukarzel et al., 2020; Robinson et al., 2019); and smartphone apps designed to provide breastfeeding information and support (Dauphin et al., 2020; Galvão et al., 2021). Breastfeeding mothers from a wide variety of

backgrounds and identities value social media and online support groups in their breastfeeding journey (Asiodu et al., 2015; Griaudzė et al., 2020) and regularly seek these sources of support in response to urgent and unmet information needs; desire for culturally informed support, community, and empowerment; and/or lack of support or perceived social stigmatization from health care providers (Haley et al., 2023; Jackson & Hallam, 2021).

While many of the studies on social media and online support have been qualitative and/or observational, at least two randomized controlled trials conducted outside of the United States have shown that online social network interventions can increase self-efficacy for breastfeeding (Uzunçakmak et al., 2022) rates and duration of exclusive breastfeeding (Cavalcanti et al., 2019). Two other trials, however, did not find differences between intervention and control groups for a peer support (in Finland; Niela-Vilen et al., 2016) and a smartphone app-based intervention (in the United States; Lewkowicz et al., 2020). In a systematic review of the literature on social media and breastfeeding practices, Orchard and Nicholls (2022) concluded that the success of social media groups in promoting breastfeeding depends on a variety of factors, including the content of discussions (e.g., levels of judgment and polarization in the discussion; see Regan & Brown, 2019) and the composition and dynamics of the group (e.g., whether or not trained peer breastfeeding counselors are part of the group; see Bridges et al., 2018). Nevertheless, lactating parents and their partners regularly report that online and social media support groups are among the most important sources of emotional and informational support in their breastfeeding journey (Galvão et al., 2021; Morse & Brown, 2021; Reicher & Spatz, 2024; Robinson et al., 2019). Efforts to promote and support breastfeeding through digital and social media compete for attention on these platforms with commercial initiatives that promote infant formula, and levels of exposure to commercial milk formula marketing via social media platforms, including Facebook, Instagram, and YouTube, can be substantial (Duckett, 2022; Hernández-Cordero & Pérez-Escamilla, 2022; UNICEF, 2022). According to a marketing research survey of Facebook and Twitter, Abrahams (2012) found that infant formula companies had already established a strong presence in social media by the late 2000s and early 2010s; more recent reviews suggest that marketing of infant formula through digital media continues to be on the rise, making use of a variety of tactics that include incentives for “mom influencers” to create content about specific brands and products (Harris & Pomeranz, 2020). Tactics used to market infant formula in social media mirror those used in other media and are designed to “influence social norms by making formula use seem to be extensive, modern, and comparable to or better than breast milk” (Piwoz & Huffman, 2015, p. 373; see also Rollins et al., 2023).

Conclusion 5-1: Media campaigns, programs, and social support interventions to promote breastfeeding exist in a competitive digital media environment that includes widespread and well-funded efforts to market commercial milk formula to mothers, families, health care providers, and health systems. In addition, many women and parents experience guilt, shame, and a sense of failure for not meeting their goals even though the social, structural, and policy environment does not support their breastfeeding journey. While there is a large, robust evidence-base that shows that media campaigns can contribute to meaningful population-level changes in health behavior, the current environment makes it exceedingly difficult to communicate about the health, social, and emotional benefits of breastfeeding in a way that precludes judgment and competes with commercially funded promotion of commercial milk formula.

Recommendation 5-1: The U.S. Department of Health and Human Services, in collaboration with organizations engaged in breastfeeding support at the federal, state, tribal, and local levels, should invest in a multifaceted, coordinated national communication strategy on the importance of breastfeeding and the need for comprehensive support for breastfeeding families from all of society across the lactation journey.

- a. The strategy should consider the full range of audiences: (1) women who may breastfeed; (2) their partners and family members; (3) community members and community organizations, including faith-based organizations; (4) health care providers, health systems, pharmacies, health professional societies, and insurers; (5) business leaders and a wide range of employers, including childcare centers, schools, transportation agencies, the military, and the criminal justice system; (6) public health systems and authorities; and (7) policymakers at the federal, state, tribal, and local levels.**
- b. The strategy should apply established social and behavior change communication frameworks and ensure that all stages of campaign development involve members of impacted communities, including historically underserved populations.**
- c. The strategy should also include information about what resources are available and where and how to access them (e.g., in the health care setting, in community and public health settings, payment requirements for services and supplies).**

In almost all of the criteria that predict the likelihood of their success, breastfeeding promotion campaigns in the United States face challenges: (1) failure to employ robust social and behavioral change communication frameworks; (2) limited funding and thus limited message exposure; (3) insufficient access to breastfeeding support in health systems and communities; (4) a policy environment that does not provide adequate financial, material, or structural supports for breastfeeding (family leave protections, universal basic income); and (5) a powerful commercial milk formula industry that dramatically outspends breastfeeding promotion efforts (Wakefield et al., 2010).

The United States has a variety of opportunities to promote breastfeeding:

First, the success of tobacco control efforts in the United States offers a well-established example of the successful use of social and behavioral change communication campaigns to shift social norms and behavior even in the context of a powerful, competing industry (National Cancer Institute, 2008). There is also strong or moderate-strength evidence that social and behavior change communication campaigns have contributed to population-level shifts in other health domains, including road safety, prevention of cardiovascular disease, physical activity, nutrition, HIV prevention, and screening for some cancers (Wakefield et al., 2010). Several global examples—in Brazil, Bolivia, Ghana, Madagascar, Bangladesh, Vietnam, and Egypt—further emphasize the potential for media campaigns to contribute to meaningful gains made by national breastfeeding promotion efforts (Menon et al., 2016; Metwally et al., 2024; Nguyen et al., 2017; Quinn et al., 2005). Combined, these efforts offer a blueprint for a successful strategy in the United States.

Second, most mothers want to breastfeed and initiate the behavior at first (Hamner et al., 2021; Pérez-Escamilla et al., 2023). This provides a strong starting point for efforts to increase

breastfeeding duration and exclusivity, and underscores the strategic need to reduce the societal barriers that impede women from meeting their prenatal breastfeeding duration goals (Pérez-Escamilla et al., 2023). While culture, systems, and policy changes are not easy, social change communication can also support these efforts with evidence-based strategies for communicating about and reframing health and social issues in a way that centers systems change, policy solutions, and collective action (NASEM, 2022; Niederdeppe et al., 2025; Tomori, 2023).

Third, the principles of social marketing can identify areas where breastfeeding has inherent advantages and opportunities for growth when appropriately protected, promoted, and supported. Social marketing can help counter commercial milk formula marketing efforts that violate the *International Code of Marketing of Breast-Milk Substitutes* (The Code; see discussion below) and undermine breastfeeding across a wide range of settings, including in health care. The combination of a national breastfeeding promotion social and behavioral change communications campaign and regulation of the commercial milk formula industry can help promote and support breastfeeding.

THE MARKETING AND REGULATION OF COMMERCIAL MILK FORMULA

Breastfeeding promotion media campaigns, programs, and social support interventions occur in a competitive media environment that includes well-funded and highly coordinated marketing efforts by the commercial milk formula industry to engage caregivers, families, providers, scientists, and policymakers using sophisticated strategies that include multiple contacts with caregivers from gestation across different categorical entry points (Baker et al., 2023; Froley et al., 2025; Pérez-Escamilla et al., 2023; Rollins et al., 2023; Vilar-Compte et al., 2024). These studies show that caregivers are frequently exposed to messages claiming health benefits in these products that are not supported by evidence (Baker et al., 2023; Froley et al., 2025; Pérez-Escamilla et al., 2023; Rollins et al., 2023; Vilar-Compte et al., 2024). The claims, which are disseminated via multiple channels, including artificial intelligence–driven digital and social media, are designed to lead caregivers to believe that commercial milk formula is equivalent or superior to breastfeeding and that it is needed because breastfeeding is very difficult. According to Rollins et al. (2023) and Vilar-Compte et al. (2022), the latter claims are often based on pathologizing baby behaviors that are typical of healthy babies, including frequent crying, short sleep/wake cycles, and milk regurgitation. Both small and large cross-national studies demonstrate that these marketing efforts are highly effective in shaping caregivers' perceptions and decision-making, as well as health professional advice about infant feeding (Rollins et al., 2023). These marketing efforts also take advantage of insufficient structural support in other sectors, such as the health system and the workplace, further enhancing the efficacy of commercial milk formula marketing (Rollins et al., 2023). Marketers also exploit cultural tropes and the portrayal of breastfeeding as an individual responsibility that falls on women (Froley et al., 2025; Hastings et al., 2020), a theme that was critiqued in earlier breastfeeding campaigns.

As reported by Rollins et al. (2023), the global commercial milk formula industry spends about \$3 billion per year marketing its products, which is larger than the investments that governments, including the U.S. government, can make in promoting breastfeeding (see also Baker et al., 2023). In contrast, the largest U.S. breastfeeding promotion campaign in history achieved the equivalent of \$30 million in advertising over a 2-year period from 2004 to 2006 (adjusting for inflation, this figure is \$47.9 million 2024).

The committee reviewed previously published studies and reviews on the impact of commercial milk formula marketing on breastfeeding-related attitudes, norms, and behaviors. Studies consistently show that exposure to commercial milk formula marketing through diverse media channels, including digital and social media spaces, influences infant feeding perceptions, attitudes, and practices (Aureoles-García et al., 2025; Döner & Kul Uçtu, 2024; Harris & Pomeranz, 2020; Howard et al., 2000; Huang et al., 2013; Piwoz & Huffman, 2015; Unar-Munguia et al., 2022; Zhang et al., 2013). A review of the global evidence on the impact of commercial milk formula marketing (Piwoz & Huffman, 2015) concluded that this marketing influences social norms by making formula use appear to be common, modern, and comparable to breastmilk. It also found that providing free samples in maternity facilities and promotion through health workers consistently had a negative impact on breastfeeding initiation and exclusive breastfeeding. Furthermore, it also found a link between recall of direct-to-consumer marketing and feeding decisions (Piwoz & Huffman, 2015). In addition, Frole et al. (2025) conducted a qualitative thematic analysis of online infant formula messaging in the United States; they noted that common themes of marketing campaigns focus on “health benefits,” “nurture,” and “science” (p. 1). Similar findings have been made for toddler milk marketing that offers products for infants and toddlers that are packaged in a very similar way to commercial milk formulas of the same brands with; this marketing sometimes also targets feeding for infants under 9 months old (i.e., cross-marketing) (Richter et al., 2024).

A literature review by Harris and Pomeranz (2020) described the marketing tactics employed by the commercial milk formula industry in the United States. The authors argued that these marketing tactics disregard the principles of *The International Code of Marketing of Breast-Milk Substitutes* (the Code), which was established to prevent misleading or unethical marketing of commercial milk formula products. Similarly, in a recent study of top infant formula brands sold in the online shopping environment in the United States, no products were found to be compliant with the Code (Frole et al., 2025). Harris and Pomeranz (2020) also examined the relationship between commercial milk formula marketing and infant feeding choices in the United States, based on observational and experimental studies, including those that analyzed data from the longitudinal Infant Feeding Practices Study II, which measured exposure to infant commercial milk formula marketing and reasons for formula switching. Zhang et al. (2013) reported that mothers’ recall of infant formula print advertising was associated with shorter intention to breastfeed exclusively and that exposure to formula information on websites was associated with lower odds of intention to breastfeed and breastfeeding initiation. Self-reported exposure to TV/radio marketing was not related to breastfeeding intentions or outcomes (Zhang et al., 2013). Additionally, caregivers are also exposed to formula marketing in health care settings. In a study by Huang et al. (2013), over half (57%) of mothers chose a specific formula at 1 month postpartum because it was used in their hospital or their doctor recommended it, 20% because they received a sample or coupon, and 13% through another form of direct-to-consumer marketing. Furthermore, 14% indicated that they were given the formula through WIC, while 19% reported using the formula they fed to a previous child (Huang et al., 2013). Harris and Pomeranz (2020) also found that provision of free infant formulas through the health sector—via “gift” bags or other means in the maternity facility—negatively influences breastfeeding outcomes. A randomized trial showed that “gift” packs containing commercial milk formula reduced any breastfeeding duration by 35 days and exclusive breastfeeding by 11 days among women who were uncertain or intended to breastfeed for less than 12 weeks, which were 44% of breastfeeding women (Howard et al., 2000). Harris and Pomeranz (2020) concluded

further that the empirical evidence indicates extensive marketing of infant formula and toddler milks likely misinforms parents about potential benefits to children and contributes to suboptimal feeding practices. They considered this evidence to be sufficient to justify pushing for strong regulation of commercial milk formula marketing in the United States, following the principles outlined in The Code (Harris & Pomeranz, 2020). These findings are consistent with global evidence (e.g., Baker et al., 2023; Rollins et al., 2023).

The International Code of Marketing of Breast-Milk Substitutes

The Code, originally adopted by the World Health Organization (WHO) in 1981, addresses multiple aspects of commercial milk formula marketing and is embedded in a human rights framework. While the United States voted against its adoption, the Code's principles are an important international standard for evaluating the regulation the marketing of commercial milk formula in the United States. The Code applies to infant and young children up to age 3 years and is complemented by additional resolutions that clarify and update its provisions. The World Health Assembly (WHA) reviews the Code every other year to address changes in the industry and update the Code as needed. These subsequent resolutions provide guidance on applying the Code to the proliferation of commercial milk formula products from ages 0–36 months, infant and young child feeding in emergencies, interaction of the commercial milk formula industry with health professionals, and increasing marketing efforts in the digital space.

Sasson (2016) and Anttila-Hughes et al. (2025) wrote that the Code was initially developed in response to growing concern by public health and health care workers and grassroots activists about aggressive marketing tactics by the commercial milk formula industry that undermined breastfeeding and caused substantial illness and death, particularly in low- and middle-income settings. Additional researchers have identified that these marketing efforts have continued and accelerated, especially in the digital space, over the past 40 years and are pervasive across high-, middle-, and low-income settings, including in the United States (Baker et al., 2023; Han et al., 2022; Rollins et al., 2023). Across settings, inappropriate marketing practices contribute to health variances (Baker et al., 2023; Harris & Pomeranz, 2020; Tomori & Palmquist, 2022).

The Code has been adopted by most countries in the world but has been fully implemented and enforced in only a handful of them; as noted above, the United States voted against its adoption (WHO, 2024). Key challenges for implementing and enforcing the Code worldwide include (1) its voluntary nature; (2) lack of formal legislation on it in most countries; and (3) successful lobbying by commercial milk formula companies of governments, international agencies (e.g., WHA member states meetings); and global infant and young child feeding regulatory initiatives (e.g., Codex Alimentarius, which sets the global standards for commercial milk formula products) against regulation of their products (Baker et al., 2023; Pérez-Escamilla et al., 2023; Rollins et al., 2023). Although the United States has made some headway with breastfeeding support investments and outcomes (Baker et al., 2023; Hernández-Cordero et al., 2022; Pérez-Escamilla et al., 2021), according to the authors, these impacts continue to be mitigated or diluted because of the lack of adoption, implementation, and enforcement of key provisions of the Code (Pérez-Escamilla et al., 2012; Tomori & Palquist, 2022).

Box 5-2 describes key principles of the Code, and the following sections describe how some provisions of the Code might be approached in the United States.

BOX 5-2**A Summary of the Principles of *The International Code of Marketing of Breast-Milk Substitutes*****Information and Education**

All marketing and information about infant feeding should:

- Emphasize the benefits of breastfeeding.
- Provide neutral, scientific information about formula use when necessary.
- Avoid implying that formula feeding is equivalent to or better than breastfeeding.

The General Public and Mothers

- Companies must not promote infant formula or related products to the general public through advertising, giveaways, or special sales.
- Marketing must not discourage breastfeeding or imply that formula feeding is superior.
- Manufacturers and distributors are prohibited from giving free samples of formula to mothers, health care workers, or hospitals. This prevents mothers from switching to formula feeding unnecessarily.

Health Care Systems

- Hospitals, clinics, and other health care institutions must not promote or distribute free formula.
- Formula companies cannot provide gifts or incentives to health workers to promote their products.

Health Workers

- Health care professionals must not be influenced by formula companies through gifts, sponsorships, or financial incentives.
- Any information given to health care workers must be scientific, factual, and unbiased.

Labeling

Labels must include:

- Clear warnings about the superiority of breastfeeding.
- Proper instructions on formula preparation.
- No pictures or language that idealizes formula use or suggests it is equal to or better than breastfeeding.

Marketing

- Stores must not offer discounts, special displays, or promotions for breastmilk substitutes.
- Point-of-sale marketing (such as posters and flyers) is not allowed.

Quality

- The safety and nutritional quality of commercial milk formula is essential to ensure the protection of the health of infants.

Implementation and Monitoring

- Governments are responsible for adopting the Code into national laws and enforcing compliance.

- Monitoring and reporting violations is essential to uphold public health standards.

SOURCE: Adapted from WHO, 1981.

Potential Approaches to Adopting the Marketing Principles of the Code in the United States

The United States has many opportunities to adopt principles of the Code regarding the marketing of commercial milk formula. First, the Baby-Friendly Hospital Initiative's (BFHI) Ten Steps to Successful Breastfeeding could be implemented across all birthing settings (see Chapter 6 for additional discussion about the BFHI). BFHI requires all maternity facilities designated as Baby-Friendly to "comply fully with the International Code of Marketing of Breast-milk Substitutes and relevant World Health Assembly resolutions." Currently, approximately 25% of births take place at Baby-Friendly hospitals (Baby-Friendly USA, 2024). A national study could document how Baby-Friendly hospitals are complying with this requirement in order to understand Code implementation barriers, facilitators, and impacts in maternity facilities and to achieve universal BFHI implementation. This could have significant health equity implications, since families from racialized minority and marginalized groups do not have equal access to birth facilities that support breastfeeding (Lind et al., 2014; Tucker et al., 2025).

Second, although WIC staff are strongly supportive of breastfeeding, the program is the largest distributor of free infant formula in the world (see Chapter 4). The commercial milk formula industry provides WIC with strongly discounted products (NASEM, 2024), which is not allowed by the Code. Furthermore, even though in the past WIC food benefits have been calibrated to nudge women towards selecting the breastfeeding package, the commercial value of the commercial milk formula package is still much higher (see Chapter 4).

Third, health professional associations and scientific societies related to nutrition could take immediate, impactful action to adopt principles of the Code (Harris & Pomeranz, 2020; Rollins et al., 2023). For example, these associations could cease to receive funding from the commercial milk formula industry for professional activities, including conferences, health professional education, and philanthropic endeavors. Additionally, all health professionals serving childbearing and infant populations could receive basic education on the importance of breastfeeding and the principles of the Code and agree to comply with those principles in their practice (see Chapter 6). This would have considerable health equity impacts as the most trusted sources of information on infant feeding are health professionals (Rollins et al., 2023).

These opportunities to adopt the principles of the Code cover a wide range of marketing venues (e.g., health care settings) and methods (e.g., free products). The next section directly addresses the regulation of the labeling and advertising of commercial milk formula in the United States. It focuses on current U.S. law, which covers a narrower set of requirements than those covered by the Code.

Regulation of the Labeling and Advertising of Commercial Milk Formula in the United States

The major federal agencies responsible for regulating the labeling and advertising of commercial milk formula are the Food and Drug Administration (FDA) and the Federal Trade

Commission (FTC). Their regulation influences how commercial milk formula products are presented as substitutes for or complements to breastfeeding. Recall that commercial milk formula includes infant formula, follow-up formula or milk, and toddler milk.

FDA regulates the marketing and labeling of commercial milk formula in the context of setting and enforcing food standards and good manufacturing practices (see Chapters 3 and 4 in NASEM, 2024). As listed by Pomeranz and Harris (2019), the FDA enforces regulations related to package food labels,² including specifications for package food labels (e.g., principal display panel, information panel, identity and name of the food, ingredients, name and place of business, declaration of net quantity of contents, nutrition labeling, nutrient content claims, health claims, reference amounts customarily consumed [i.e., serving size]), and misbranding of food. Importantly, regulations focus on nutritional composition and instructions for preparing, using, and storing formula.

FDA is also responsible for regulating commercial milk formula claims in labeling. These claims frame product use and benefits. FDA regulations cover allowed *nutrient content claims*, which characterize the level of a nutrient in a food or compare the level of a nutrient in a food to that of another food. While required to be truthful, claims about nutrition and health impacts do not necessarily require substantiation, unless they meet the narrow definition of a health claim. A health claim describes the relationship between a food and a particular disease. FDA reviews these claims, which must meet the requirements of significant scientific agreement standards (Munblit et al., 2020). However, the majority of claims on formula labels (and in marketing materials) are structure/function claims, which link a particular component or characteristic of the product to a broader health concept, such as “DHA supports your infant’s brain development” (Munblit et al., 2020; Harris & Pomeranz, 2020). FDA does not require substantiation of structure/function claims (Pomeranz et al., 2025). Additionally, qualified health claims may be allowed. Such claims “characterize the relationship between a substance and a disease or health-related condition but is a claim that has not been approved by FDA under the ‘Significant Scientific Agreement’ standard that characterizes health claims, and thus must be accompanied by a disclaimer or otherwise qualified in such a way as to not mislead consumers” (FDA, 2023, p. 8). Although this regulation has wording requirements, qualified health claims do not require the same level of scrutiny as health claims. All of these regulations fall far below the levels required for medications (Munblit et al., 2020).

Comments by FDA (2023) on the labeling of infant formula indicate that it views a variety of labels used by manufacturers as noncompliant with its labeling guidance. For example, FDA (2023) noted, “We are concerned particularly about the number of infant formula products that bear the same or similar statements of identity but are different in composition or intended use” (p. 3). And it stated, “We have also noticed an increased use of nutrient content claims that render products misbranded under the Federal Food, Drug, and Cosmetic Act (FD&C Act)” (FDA, 2023, p. 3). FDA has the authority to issue warning letters to manufacturers to enforce against misbranding of food products but rarely uses this authority in the context of commercial milk formula labeling. Pomeranz et al. (2025) noted that this may be partly because of a lack of resources and limited authority.

The FTC (n.d.) is empowered “to investigate and prevent unfair methods of competition, and unfair or deceptive acts or practices affecting commerce” (para. 2). Its enforcement against deceptive marketing extends to all media, including the internet. Current law requires the FTC to enforce truth in advertising, under which advertisements “must be truthful, not misleading, and,

² Labels include the package itself and can be extended to marketing (e.g., web-based info).

when appropriate, backed by scientific evidence” (FTC, n.d., para. 1). The FTC takes enforcement action by bringing cases against companies that it believes engage in unfair or deceptive advertising. It also publishes Competition and Consumer Protection Guidance Documents; “these guidance documents are not substantive rules and do not have the force or effect of law. They are administrative interpretations of the statutes and rules administered by the Commission, and they are advisory in nature” (FTC, n.d., para. 1). None of these guidance documents address commercial milk formula directly.

An example of how FDA and the FTC can regulate the labeling and advertising of commercial milk formula relates to Nestlé Nutrition’s marketing of its Gerber Good Start Gentle Formula. FDA (2014) issued a warning letter in October 2014 stating that the product was misbranded because of unauthorized health claims used on its label and website. Pomeranz and Harris (2019) noted, “FDA issued a close-out letter for the case in July 2015, which means that FDA found Nestle took corrective action to address the violations contained in its Warning Letter” (p. 44). Also in 2014, the FTC (2014) charged Nestlé Nutrition with deceptively advertising the same product. That case was settled in 2019 between the FTC and Nestlé with Nestlé agreeing, among other things, not to make “any representation that the covered product a) prevents or reduces the risk of developing allergies or b) is effective in the cure, mitigation, or treatment of any disease; unless the representation is non-misleading and, at the time of making such representation, Defendant possesses and relies upon competent and reliable scientific evidence substantiating that the representation is true” (*Federal Trade Commission v. Gerber Products Co*, 2019, p. 4). These actions show that FDA and the FTC have the authority and ability to regulate the labeling and advertising of commercial milk formula.

Researchers have described examples where commercial milk formula products, marketing materials, and websites in the United States were alleged to make misleading claims about health and nutrition that lack scientific evidence (Cheung et al., 2023; Chu et al., 2023; Harris & Pomeranz, 2020; Munblit et al., 2020; Pomeranz et al., 2023). The researchers described instances where information about infant feeding presented by commercial milk formula manufacturers may have inaccurately elevated these health claims over documented health impacts of breastfeeding (Harris & Pomeranz, 2020; Hastings et al., 2020; Pomeranz et al., 2023). These approaches have been documented globally and have been shown to undermine breastfeeding (Rollins et al., 2023).

Researchers and health professionals have proposed a series of recommendations to address these regulatory gaps. For FDA, research suggests that a first step could include a requirement to substantiate any nutrition and health claims on product labels, including those in the digital marketing environment, with high-quality evidence. This could include the current definitions of structure and function claims, imagery that evokes similar claims, and qualified health claims. In 2016, FDA (2016) issued nonbinding guidance, *Substantiation for Structure/Function Claims Made in Infant Formula Labels and Labeling*, but this guidance was not finalized (FDA, 2016; Harris & Pomeranz, 2020; Hughes et al., 2017). FDA does not have authority to require submission of substantiation documents for claims by companies, which limits its ability to challenge claims (U.S. Government Accountability Office [GAO], 2011). Guidance and enforcement could also be enhanced to recognize principles of the Code (Harris & Pomeranz, 2020; Hughes et al., 2017). For example, the draft structure/function guidance explicitly excluded guidance on “labeling claims that suggest that the product contains constituents found in breast milk or that the product is ‘closer’ to breast milk than other formulas” because they are not structure/function claims (FDA, 2016, p. 5). In addition, the

literature has called special attention to additional elements of claims that address specialty products such as those labeled “gentle” or “sensitive” (Rollins et al., 2023).

Further recommendations proposed in the literature include higher standards for formula preparation that correspond with international recommendations. This could include, for example, a warning that powdered commercial milk formula is not sterile and the provision of instructions for safe preparation. Another suggestion is to include a discussion of the risks of feeding preterm and sick infants commercial milk formula when mother’s own milk or donor human milk is available.

Finally, recent recommendations by the American Academy of Pediatrics (2023) highlight its view that toddler formulas are unnecessary and potentially harmful. FDA could implement requirements for labeling that would ensure that these products are not labeled as “formula” to avoid misleading parents and to provide a warning that these products are not necessary and may be associated with health harms, such as obesity.

For the FTC, recommendations from the literature relate to the enforcement of the truthfulness in advertising law. “When consumers see or hear an advertisement, whether it’s on the Internet, radio or television, or anywhere else, federal law says that ad must be truthful, not misleading, and, when appropriate, backed by scientific evidence. The FTC enforces these truth-in-advertising laws, and it applies the same standards no matter where an ad appears – in newspapers and magazines, online, in the mail, or on billboards or buses” (FTC, n.d., para. 1). To date, FTC enforcement actions related to commercial milk formula have been limited. However, the FTC has the authority, for example, to bring actions against structure/function claims for infant formula on the market that it believes to be unsubstantiated and to require that companies provide evidence to support their claims.

Pomeranz and Harris (2019) noted that, “U.S. regulation and enforcement actions have not kept pace with the introduction of new products and product categories and the profusion of labeling and marketing claims questionably implying nutritional and developmental benefits from these products” (p. 33). Overall, the committee for the present study observes that the current FDA and FTC regulation of the labeling and advertising of commercial milk formula is inadequate (see Conclusion 5-2).

Conclusion 5-2: Because the United States has not implemented the Code, the regulatory environment for commercial milk formula does not adhere to global recommendations or sufficiently address the harmful influence of commercial milk formula marketing on breastfeeding. Specifically, the current regulatory structure that includes regulation of labeling by FDA and advertising by the FTC is inadequate to address allegations of wide-ranging, misleading claims in labeling and physical and digital marketing efforts targeting caregivers, health professionals, and the public. Substantial literature demonstrates that misleading marketing has adverse impacts on breastfeeding.

Recommendation 5-2: The U.S. Food and Drug Administration and U.S. Federal Trade Commission should coordinate to rigorously regulate the marketing, including labeling and advertising, of commercial milk formula for infant and young child feeding, informed by the principles outlined in *The International Code of Marketing of Breast-Milk Substitutes*, across media, retail, health care, and other settings.

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6

Breastfeeding and the U.S. Health Care System

As indicated in the social ecological model presented in Chapter 3, the health care system plays a key role in breastfeeding support. Pérez-Escamilla et al. (2023) noted that major structural challenges across the globe affect breastfeeding care. This care is particularly fragmented in the United States, making it difficult for mothers to access skilled lactation support and resources.

Typically, infants receive health care services from a different set of providers from their mothers and on a different schedule (Anjur & Darmstadt, 2023); in other words, the breastfeeding dyad does not have a shared medical home.¹ Across categories of breastfeeding care and within various health care settings, lactation support services and resources can vary by provider education, training, licensure, and credentialing. While these professionals are not all part of the health care system, the care or services they provide may overlap (see Chapters 3 and 4 for examples of community and public health lactation support).

This chapter will focus on key opportunities to support breastfeeding within the health care system, emphasizing strategies that span clinical settings, provider types, and levels of care. As a central touchpoint for mothers and infants, the health care setting plays a critical role in shaping breastfeeding outcomes through early clinical encounters, postpartum follow-up, and continuity of care. The chapter first examines evidence-based interventions, including the Baby-Friendly Hospital Initiative, designed to improve breastfeeding outcomes. It then explores the role of quality improvement initiatives. An additional focus of this chapter is the importance of health care provider education and training. Minimal clinical preparation and inconsistency in lactation-related knowledge among clinicians remain persistent barriers to breastfeeding support.

Finally, the chapter highlights the value of systematic documentation and data capture of breastfeeding outcomes in clinical settings. Standardized approaches to recording breastfeeding status, support encounters, and lactation-related health indicators are essential for monitoring quality, identifying differences across populations, and informing continuous improvement efforts. Collectively, these opportunities underscore the need for an integrated, coordinated approach to breastfeeding support in health care settings—an approach that aligns policies, clinical best practices, and system-level infrastructure to better meet the needs of families.

Framing breastfeeding support and care in the health care setting through the public health model of primary, secondary, and tertiary prevention provides a helpful road map for understanding who delivers care, where care is delivered, and what kind of care is needed. This model also highlights the dynamic and evolving nature of breastfeeding support in the United

¹ The American Academy of Pediatrics (AAP, 2025) defines a *medical home* as “an approach to providing comprehensive and high-quality primary care” (para. 1). It extends beyond a physical setting and may include educational services, specialty care, and family support (AAP, 2025).

States, which involves a wide range of health care and community providers working across diverse settings (see Box 6-1).

BOX 6-1

Applying Prevention Levels to Breastfeeding Care

Primary Prevention: Promoting Breastfeeding and Preventing Challenges Before They Begin

Primary prevention involves proactive strategies for supporting health and preventing illness before it occurs. In the context of breastfeeding, this includes:

- Promoting breastfeeding itself as a form of primary prevention because of its protective health benefits for both infants and mothers.
- Educating individuals and communities about the benefits of breastfeeding.
- Addressing vital conditions of health, such as food security, paid parental leave, and cultural perceptions, which can affect breastfeeding outcomes.
- Providing anticipatory guidance and lactation education during preconception and prenatal care to prepare parents and address potential challenges.

This level reinforces the importance of a life course approach, recognizing that effective breastfeeding support begins well before birth and continues beyond infancy (see Chapter 2).

Primary prevention is a priority among primary care clinicians, including those focused on maternal–child health. Most of this care is provided in a typical ambulatory practice setting. Many primary care clinicians also collaborate with community-based organizations and their personnel to enhance primary prevention strategies (see chapter on community). One example of this collaboration is between pediatricians and pediatric care providers and the WIC program. Primary prevention is also a priority of the public health system, to promote breastfeeding as a health promotion and disease prevention strategy (see Chapter 3).

Secondary Prevention: Early Identification and Timely Intervention

Secondary prevention focuses on the early detection of lactation risk factors or emerging problems so that timely interventions can prevent complications. In breastfeeding, this includes:

- During prenatal visits, identifying maternal risk factors such as previous breast surgery, hormonal disorders (e.g., polycystic ovary syndrome, hypothyroidism), or anatomical variations (Feldman-Winter et al., 2020; see also Chapter 2).

- Recognizing infant-related concerns—such as poor latch, excessive weight loss, or hyperbilirubinemia—shortly after birth, typically in the hospital or by midwives, nurses, lactation consultants, and pediatricians (Feldman-Winter et al., 2020).
- Prompt initiation of interventions, such as latch assistance, to correct issues before they escalate.

This level is critical to bridging the gap between prevention and treatment, ensuring that small problems do not become major barriers to successful breastfeeding.

Maternal problems identified are typically addressed by maternal care clinicians such as obstetricians/gynecologists and midwives; they may also be addressed by advanced practice professionals and allied health professionals trained in lactation, such as lactation support providers. Breastfeeding medicine clinicians may also be involved in care plans for lactation issues identified by screening. The screening and potential treatments are delivered in both ambulatory and hospital settings. If the problems are identified in the infant, a pediatric care clinician is involved, and (often in collaboration with the maternal care clinician) a treatment plan is recommended. Lack of screening and/or inability to provide a successful treatment plan often results in either supplementation and/or premature weaning.

Tertiary Prevention: Managing Complex or Chronic Breastfeeding Challenges

Tertiary prevention comes into play when breastfeeding complications are established and require more intensive support to reduce long-term impacts. This may include:

- Addressing issues such as insufficient milk supply, which may have resulted from earlier mismanagement or biological challenges.
- Providing specialized care to manage persistent feeding difficulties or maternal conditions.
- Supporting mental health and emotional well-being when prolonged breastfeeding challenges have led to parental distress or guilt.

This level of care recognizes that even when early support is robust, complex cases will arise, and managing these effectively is essential to preserving breastfeeding relationships and maternal health.

Tertiary prevention is provided by specially trained lactation support providers, often in collaboration with knowledgeable and skillful clinicians; it may involve highly specialized breastfeeding medicine clinicians, if available. The goal of tertiary prevention is to preserve breastfeeding, as well as meet the personal goals of the breastfeeding relationship between

individuals involved and the family. This level of support is unavailable in many communities across the United States, and referral systems are fragmented and confusing to navigate.

INTERVENTIONS FOR IMPROVING BREASTFEEDING OUTCOMES IN THE HEALTH CARE SETTING

The sections below explore interventions that demonstrate positive effects on or relationships to breastfeeding in the health care setting. These interventions may span the life course and breastfeeding journey, highlighting how the care provided to mothers—across preconception, the prenatal period, in the birth setting, immediately postpartum, and in the months that follow—influences breastfeeding outcomes (see also Chapter 2).

Through all aspects of care, opportunities exist for strong, coordinated, and culturally appropriate communication between family, health care providers, community health workers, doulas, and lactation support providers. This communication enables everyone to work together to support the breastfeeding dyad. In addition, practice models such as team-based care can help coordinate care across settings and providers and ensure a continuum of care.²

The Baby-Friendly Hospital Initiative

As introduced in prior chapters (e.g., see Chapter 5), the Baby-Friendly Hospital Initiative (BFHI) aims to help mothers and their newborns receive timely and appropriate care before and during their stay in a health care setting that provides maternity and newborn services, and during the postpartum period (World Health Organization [WHO] & UNICEF, 2018). BFHI was launched in 1990 and launched in 1991 by the WHO and UNICEF as a program for improving the structure and quality of breastfeeding care in birthing facilities. BFHI draws on the framework of the WHO/UNICEF Ten Steps to Successful Breastfeeding (Ten Steps) (see Box 6-2), which was developed based on the growing body of evidence on key determinants of breastfeeding in health care settings (WHO, 2013).

BOX 6-2

The Baby-Friendly Hospital Initiative: WHO/UNICEF Ten Steps to Successful Breastfeeding

The Ten Steps for Successful Breastfeeding (Ten Steps) summarize the policies or procedures that maternity and newborn care facilities should implement to support lactation and breastfeeding. The Ten Steps were revised in 2018, with guidance for integrating the program across all health care systems and settings to ensure universal coverage over time (World Health Organization [WHO], 2025).

² The American College of Obstetricians and Gynecologists (ACOG) recommends team-based care to fulfill all the requirements of well-woman visits, including obstetrician-gynecologists, physician assistants, nurse practitioners, and other health professionals (ACOG Committee Opinion No. 755, 2018). The pediatric or family physician medical home can function with a team approach, from scheduling nursing and provider care to including providers with lactation expertise in the office (Bunik, 2021).

Critical management procedures:

- 1.a Comply fully with *The International Code of Marketing of Breast-Milk Substitutes* and relevant World Health Assembly resolutions.
- b. Have a written infant-feeding policy that is routinely communicated to staff and parents.
- c. Establish ongoing monitoring and data management systems.
2. Ensure that staff have sufficient knowledge, competence and skills to support breastfeeding.

Key clinical practices:

3. Discuss the importance and management of breastfeeding with pregnant women and their families.
4. Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth.
5. Support mothers to initiate and maintain breastfeeding and manage common difficulties.
6. Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.
7. Enable mothers and their infants to remain together and to practice rooming-in 24 hours a day.
8. Support mothers to recognize and respond to their infants' cues for feeding.
9. Counsel mothers on the use and risks of feeding bottles, teats, and pacifiers.
10. Coordinate discharge so that parents and their infants have timely access to ongoing support and care.

SOURCE: WHO, n.d.

The 2018 revision of the Ten Steps elaborated on their importance and included a number of important updates (WHO & UNICEF, 2018). The revision made a strong call for governmental support for scaling up its implementation of BFHI in national policy and interventions for improving breastfeeding. Additionally, the revision fully incorporated the 1981 World Health Assembly's *International Code of Marketing of Breast-Milk Substitutes* (the Code) and subsequent resolutions, emphasized the importance of 6 months of exclusive breastfeeding, incorporated attention to the role of mother-friendly birthing practices, included preterm infants, and emphasized shared decision-making.

Systematic evaluation of the impact of the BFHI globally, including in the United States, has demonstrated substantial impact on breastfeeding outcomes: breastfeeding initiation, exclusive breastfeeding at the time of discharge, exclusive breastfeeding, and any breastfeeding duration (Pérez-Escamilla et al., 2016). A study by the U.S. Agency for Healthcare Research and Quality found that implementing the BFHI in the United States increased breastfeeding initiation and duration (Feltner et al., 2018). Importantly, evidence showed that the greater the number of BFHI steps implemented, the greater the improvement across breastfeeding outcomes. The evaluation also pointed out the importance of step 10 (linkage to community support) in maintaining these improvements. Subsequent evaluations strengthened the evidence base of these impacts (see Bookhart et al., 2023; Chan et al., 2025; Ducharme-Smith et al., 2022; Feldman-Winter et al., 2017; Feltner et al., 2018; Merewood et al., 2019; Munn et al., 2018; Patterson et al., 2018).

Implementing BFHI

The United States has been relatively successful in implementing the BFHI, with strong leadership from the U.S. Centers for Disease Control and Prevention (CDC) (Hernández-Cordero

et al., 2022). Importantly, implementing BFHI has been associated with substantial increase in breastfeeding initiation for Black mothers and mothers participating in WIC (Merewood et al., 2019). It has emerged as a promising intervention as part of larger effort to reduce differences in breastfeeding rates that persist by race, ethnicity, and socioeconomic status (Bookhart et al., 2024; Burnham et al., 2022; Jung et al., 2021; Tucker et al., 2025; Merewood et al., 2019; Nobari et al., 2017; Patterson et al., 2018, 2021; Segura-Perez et al., 2021).

Recent evidence has consistently reinforced the relationship between implementing Baby-Friendly maternity care practices and better breastfeeding outcomes. Bookhart et al. (2023) again demonstrated a dose–response relationship between the Baby-Friendly steps implemented and breastfeeding outcomes using a large dataset of over 2,000 U.S. hospitals from the 2018 Maternity Practices in Infant Nutrition and Care Survey. That study showed particularly substantial impacts on exclusive breastfeeding for step 6 (limited infant formula supplementation), followed by prenatal breastfeeding information (step 3), responsive feeding (step 8), care right after birth (step 4), and rooming-in (step 2). This study, along with prior evidence, also pointed to variation in the implementation of the Ten Steps. Some of the most impactful steps, such as step 6 (do not supplement with infant formula unless medically indicated), were the least commonly implemented in this sample of U.S. hospitals (28%) (Bookhart et al., 2023).

Baby-Friendly practices also have potential benefits for preterm infants (Richter et al., 2024). Implementing the recent neo-BFHI guidelines (Maastrup et al., 2022) can be another promising avenue for improving breastfeeding outcomes and addressing differences in rates among various populations. Davis et al. (2023), McLemore et al. (2018) and the National Academies of Sciences, Engineering, and Medicine (NASEM, 2024) have identified that these efforts could be integrated with broader initiatives that address racism in birth settings overall, especially in relation to the treatment of women who experience preterm birth, who are disproportionately Black women.

In the United States, about one-quarter of births occur in hospitals that have achieved Baby-Friendly designation (CDC, 2022). Barriers to scaling up the implementation of BFHI include primarily upfront cost and competing priorities (Arslanian et al., 2022). There are debates about the value of BFHI accreditation compared with only adopting the Ten Steps. Additionally, there is considerable variation in the implementation of the Ten Steps in practice. Recent examinations of the implementation of Baby-Friendly practices have noted substantial increases in overall uptake, with over half of hospitals implementing at least six of the ten steps in 2022 (Marks et al., 2024). However, these data also revealed a decline in the implementation of some steps, notably step 6 (avoiding infant formula supplementation).

Policy initiatives across the United States have focused primarily on incentivizing and scaling up BFHI or implementing the Ten Steps for greater coverage. California, for instance, enacted the Hospital Infant Feeding Act in 2011, which required hospitals to adopt the Ten Steps by January 2025. Other states (e.g., Alaska, Florida, and Illinois) encourage the adoption of Baby-Friendly practices but do not require the implementation of the Ten Steps (Alakaam, 2019). The Indian Health Service also committed to making its 13 birthing facilities Baby Friendly in 2011, a goal it achieved 2 years after the program was launched (CDC, 2021; see further discussion below). The program has been highly successful as reported by increasing breastfeeding exclusivity and duration (CDC, 2021). CDC's recent funding initiative to accelerate the implementation of the Ten Steps in 100 hospitals to address racial variances in

breastfeeding is an exemplar of initiatives that could be scaled up nationally with sufficient investment, as discussed further in this chapter.

While BFHI is the gold standard for maternity care practice to support breastfeeding, some states have implemented designation programs that follow the Ten Steps. For example, Ohio First Steps is a voluntary program led by the Ohio Department of Health (2023) and the Ohio Hospital Association; it recognizes facilities that have taken steps to protect, promote, and support breastfeeding.

It is important to note that the scale-up of BFHI is only one part of addressing the overall determinants of breastfeeding following a multisectoral person-centered approach (Pérez-Escamilla et al., 2023); hence it is necessary but not sufficient to eliminate differences in rates on its own. Importantly, universal adoption of the Ten Steps would make a substantial impact across breastfeeding indicators and associated health outcomes.

In a recent evaluation of the implementation of BFHI in the United States, Hernández-Cordero et al. (2022) found that numerous factors have played a role in the success of the adoption of the Ten Steps to date; these observations can inform future work aiming to improve uptake. First, CDC has played a leading role in supporting uptake of Baby-Friendly practices, with funding and technical assistance, as part of its efforts to improve breastfeeding outcomes (e.g., Best Fed Beginnings, Empower, and CHEER). Coordination between Baby-Friendly USA, the accrediting body of the BFHI, and CDC has enabled ongoing monitoring and comparative analysis of birth facility policies and practices. Hernández-Cordero et al. (2022) found that monitoring and disseminating updates via CDC likely encouraged the uptake and continuation of Baby-Friendly practices.

At the same time, Hernández-Cordero et al. (2022) also highlighted several challenges that need to be addressed to achieve scale-up of the program. A critical part of moving the needle on implementing BFHI is the high cost of accreditation. Thus, national investment and economic incentives for BFHI implementation are key tools for scaling up the adoption of BFHI. Other barriers to implementation remain repeated efforts to cast doubt on BFHI's safety and efficacy (Hernández-Cordero et al., 2022). This could be addressed via investment in public health messaging and outreach that highlights the initiative's effectiveness. Pervasive commercial milk formula marketing and distribution at hospitals remains another challenge, which could be addressed by implementing the Code in health care settings (see Chapter 5).

Hernández-Cordero et al. (2022) stated that monitoring efforts need to be strengthened in order to reduce variation in implementation and achieve greater fidelity, especially for implementing step 10. A recent scoping review also emphasized the importance of building out step 10 for the Baby-Friendly Community Initiative (BFCI), with strong collaborations among all involved parties, including community-based organizations, as well as health professional education to improve sustained exclusive breastfeeding and support the BFHI on a global scale (Walsh et al., 2023).

The CDC-funded CHAMPS National program, which enrolls 100 hospitals to achieve BFHI designation, is an example of investment that addresses both cost and the need for technical expertise; the program also strongly centers community partners in implementation. This effort could serve as the basis for even larger-scale efforts with proportionately larger investment. Such investments would have high impact and a very high return, producing substantial savings.

The BFHI has been implemented globally for over 25 years and only more recently in the United States, with a presumed focus on the healthy breastfeeding dyad. Suggested revisions of

the BFHI recommendations have been made to address the needs of preterm infants. In 2020, WHO (2020) released guidelines on breastfeeding for small, sick, and preterm infants.

Indian Health Service Baby-Friendly Initiative

In 2011, the Indian Health Service (IHS) coordinated an initiative seeking for all federally administered IHS obstetric facilities to earn the Baby-Friendly designation based on the implementation of the Ten Steps and the Code, as attested by an on-site evaluation from Baby-Friendly USA (Karol et al., 2016).

To achieve this goal, the IHS took an empowering, community-engaged, equitable approach, guided by systems thinking. Specifically, IHS hospitals across the country formed task forces, created a network of practitioners to develop and share successful breastfeeding promotion strategies, updated policies, and improved medical record templates. Senior staff from IHS headquarters visited facilities to address on-site barriers, provide training and technical assistance, and conduct mock Baby-Friendly assessments. Strategies and solutions were shared systemwide via webinars and conference calls. Quality improvement methods, technical assistance, and site visits assisted with the implementation process. Between 2011 and December 2014, 100% of the IHS federally administered hospitals gained Baby-Friendly designation, indicating that the IHS BFHI was highly successful (Karol et al., 2016). Furthermore, the rate of breastfeeding at age 6 months increased from 37.3% of American Indian and Alaska Native babies born in 2011 to 55.0% of babies born in 2015 (CDC, 2024). During the same period, the rate of exclusive breastfeeding through age 6 months increased from 15.6% to 19.6% (CDC, 2024).

The process evaluation found that although some individual health care providers were resistant to implementing the Ten Steps, enthusiasm from community members overcame this resistance. The BFHI approach was found to be strongly consistent with Native American culture. For example, separating mothers and babies immediately after birth can often undermine traditional birthing practices. Ten Steps policies such as skin-to-skin care and rooming-in, however, are very consistent with cultural birth and childcare practices. Hence, centering the initiative around the experiences of local communities was critical to its success.

Conclusion 6-1: The BFHI is a well-established, evidence-based program designed to improve breastfeeding outcomes by aligning maternity and newborn care practices with the Ten Steps to Successful Breastfeeding. Since its inception, the BFHI has demonstrated consistent and substantial benefits for breastfeeding initiation, exclusivity, and duration across a variety of health care settings. In the United States, implementation of the Ten Steps, whether through formal Baby-Friendly designation or through stepwise policy adoption, has been associated with improved outcomes and reductions in breastfeeding variances, especially when community engagement and culturally responsive practices are centered.

Recommendation 6-1: The U.S. Centers for Medicare & Medicaid Services and The Joint Commission, in collaboration with other hospital accrediting bodies, hospital associations, and state health regulators, should ensure that every maternity care facility in the United States implements the UNICEF/World Health Organization's

Baby-Friendly Hospital Initiative's Ten Steps to Successful Breastfeeding as the standard of care.

Currently, the Baby-Friendly designation is voluntary for hospitals and birthing centers, meaning facilities can choose whether to pursue certification. Many hospitals and birthing centers opt out because of cost, resource constraints, or logistical challenges in implementing all the required steps (Arslanian et al., 2022; Hernández-Cordero et al., 2022). The certification process involves a multiyear and multiphase accreditation system, including self-assessment, external evaluation, and ongoing compliance reviews, which can be demanding for health care facilities with limited budgets, staffing shortages, or competing priorities. Some states have addressed these challenges by offering financial incentives—via Medicaid, insurance providers, and philanthropic organizations—for hospitals that achieve Baby-Friendly status (e.g., Burnham et al., 2022; Merewood et al., 2019). These incentives recognize the role that Baby-Friendly hospitals play in reducing health care costs, improving maternity care practices, and promoting better infant and maternal health outcomes.

For hospitals in which implementing the Ten Steps is perceived as challenging or difficult, additional resources, including technical support and investments need to be provided. Funding for implementing the Ten Steps needs to be allocated for hospitals serving communities with large differences in breastfeeding outcomes across populations to support them in pursuing Baby-Friendly status. For example, public–private partnerships of insurers could support this work and provide funding to make this possible.

The U.S. Centers for Medicare & Medicaid Services (CMS) and The Joint Commission have the authority to set standards, establish compliance with these standards, and enforce regulations in hospitals or birth settings. Medicaid funds a significant portion of U.S. maternity care (i.e., approximately 41% of births) (see Chapter 7). And The Joint Commission currently accredits nearly 80% of U.S. hospitals; it also sets the quality and safety standards hospitals must meet to maintain accreditation. Box 6-3 presents actions that CMS and the Joint Commission could take to support the implementation of the Ten Steps in hospitals and birth settings.

BOX 6-3

Actions to Support the Implementation of the Ten Steps

The U.S. Centers for Medicare & Medicaid Services (CMS) could encourage and enforce the implementation of the Ten Steps to Successful Breastfeeding in hospitals and birth settings by:

- Setting conditions of participation that hospitals must follow to receive federal funding.
- Requiring compliance with the Ten Steps as part of mandatory quality of care standards for hospitals and birth settings that serve patients covered by Medicaid, and by setting penalties for facilities that fail to meet these conditions.
- Linking hospital payment (reimbursement) rates to quality outcomes through the CMS Value-Based Purchasing and Hospital Quality Star Ratings programs.
- Tying payment to breastfeeding quality benchmarks (e.g., offer state Medicaid programs additional funding if they adopt policies that require hospitals or birth settings to implement the Ten Steps).

The Joint Commission could encourage and enforce the implementation of the Ten Steps by:

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- Requiring mandatory compliance with its breastfeeding standards to maintain accreditation and tying this to Medicaid funding.
- Resuming mandatory data collection on “exclusive breastmilk feeding” at hospital discharge as a key Perinatal Care Core Measure (PC-05) in the hospital setting, including the reintroduction of PC-05a (i.e., exclusive breastmilk feeding based on mother’s feeding plan) (see additional discussion later in this chapter).
- Conducting annual compliance reviews to evaluate a facility’s adherence to the Ten Steps.
- Publicly ranking hospitals or requiring them to report their breastfeeding practices and policies, which may create additional accountability and transparency.

Staffing Ratios

In tandem with the adoption of evidence-based maternity care practices, adequate staffing is needed so that all breastfeeding dyads receive a standard of care for breastfeeding support (Arslanian et al., 2022). For example, the BFHI stipulates that these staff members are trained and competent in providing breastfeeding care. In addition, delivery hospitals need to staff dedicated lactation consultants. Similarly, the U.S. Lactation Consultants Association recommends that one provider with the International Board Certified Lactation Consultant® designation (IBCLC) be available for every 783 breastfeeding dyads and varying staffing models based on the size and level of care of the neonatal intensive care unit (Lober et al., 2021). These examples span various settings, which will be discussed throughout the chapter.

QUALITY IMPROVEMENT INITIATIVES AND MEASURES

Quality improvement involves an iterative method of changes that include processes, structure, outcomes, and balancing measures. An example of a process change that can impact breastfeeding rates is a hospital transitioning from a traditional nursery setting to rooming-in, in alignment with step 7 of the Ten Steps. A structural change could be adding details to electronic health records (EHRs) such as skin-to-skin contact in the delivery room and exclusive and overall breastfeeding. Another example of a structural change is educating health care professionals and verifying their competencies in providing breastfeeding care. Outcome measures often include exclusive and overall breastfeeding at specific time points but may also include receiving any human milk (e.g., expressed mother’s milk, donor milk). Finally, balancing measures often include time and costs related to the changes being made but could also include adverse or sentinel events. Quality improvement projects may begin as early as undergraduate education; they are required in most residency programs and for maintenance of certification in many specialties, including pediatrics.

One challenge in quality improvement is that some outcome measures, including breastfeeding rates, are difficult to measure beyond the newborn period. While the federal government tracks national breastfeeding rates using the National Immunization System, the Pregnancy Risk Assessment Monitoring System survey, and the Infant Feeding Survey, there is no consistent method at the local practice level for tracking breastfeeding continuation rates for exclusive and/or overall breastfeeding.

Large, national quality improvement collaboratives, following the framework of “the Breakthrough Series” (Institute for Healthcare Improvement, 2003), have been very successful in increasing breastfeeding initiation, duration, and exclusivity, and even in reducing racial differences in rates (Arbour et al., 2019; Burnham et al., 2022; Feldman-Winter et al., 2017; Merewood et al., 2019). These initiatives, funded by both the federal government and private foundations, have brought together experts in quality improvement methodology, content leaders, physician and other clinical leaders, and effective trainers to engage the health care system to undergo a series of transformational changes in the landscape of breastfeeding protection, promotion, and support. These systemic changes aim to eliminate bias in care and overcome variances in breastfeeding outcomes.

Among the many lessons learned in these collaboratives, two of the most important aspects of change include leadership buy-in (Feldman-Winter & Ustianov, 2016) and community involvement (Burnham et al., 2022). Changes that not only engage community partners but are created and led by community champions have the best potential for overcoming hesitancy and mistrust. Once community partners are provided the opportunity to lead changes within the health system, the “funded outsiders” can transfer oversight to the community (Julian et al., 2020). Together with establishing and maintaining connections, continuing to track both process and outcome measures enables such projects to be sustainable.

Continued funding for quality improvement collaboratives is needed and warranted, given their success. At the time of this writing, CDC is funding another large national collaborative, CHAMPS National, building on the model of bridging the health system with the community and enrolling 100 new hospitals with the goals of implementing the Ten Steps and reducing racial variances in breastfeeding initiation. Also, the World Health Organization (WHO, 2025) and UNICEF have recently published a new monitoring manual for the BFHI, including the internal monitoring system to ensure the quality of implementation of the Ten Steps.

Lactation support among clinicians has been associated with improved knowledge, confidence, and attitudes about breastfeeding for their own patients (Dixit et al., 2015). In contrast, Dixit et al. (2015) reported that inadequate support may undermine breastfeeding and leave clinicians in training with feelings of guilt and remorse. As such, clinical training may be an important time frame for opportunities to enhance breastfeeding support and create a culture of clinician support for breastfeeding. For example, the American Academy of Pediatrics (AAP), along with the American Academy of Family Physicians and American College of Obstetricians and Gynecologists (ACOG), established a quality improvement collaborative for pediatric, family medicine, and obstetrics and gynecology residency training programs to implement a standardized policy for breastfeeding support (Lanigan et al., 2023).

INTEGRATING BREASTFEEDING SUPPORT IN PRIMARY CARE

Step Ten from the BFHI Ten Steps calls for ensuring the continuum of breastfeeding care once the dyad leaves the maternity facility. In addition to connection to community resources for breastfeeding support, scheduling the first newborn visit with a provider is key. The AAP (n.d.) recommends that the first hospital follow-up visit for infants occur on days 3–5 after birth, or within 48 hours of discharge from the hospital, and that this visit utilize hospital information such as newborn weight trajectories, bilirubin level, and feeding patterns to determine what should be included in the ambulatory assessment (Hoyt-Austin et al., 2022). Meek et al. (2022)

noted that feedings need to be observed by a trained health care professional at least once every 8–12 hours during the early postpartum period, including at least once in the 8 hours before discharge. Following discharge, dyads with risk factors (see Box 6-4) need to be seen by the pediatric care provider within 24–48 hours. All other dyads need to be seen within 48–72 hours. Usually, these visits are with the infant’s primary care provider (e.g., pediatrician, family physician, family nurse practitioner, primary care pediatric nurse practitioners) and can include the help of specialized lactation support providers if available in the outpatient setting.

BOX 6-4

Follow Up Within 24–48 Hours of Hospital Discharge for the Following:

- Infants <37-week gestation
- Any risk factors for breastfeeding difficulties
- Mothers who are experiencing any pain with breastfeeding
- Infants with greater-than-expected weight loss
- Infants <48 hours of age at discharge
- Infants with risk factors for hyperbilirubinemia

SOURCE: Meek et al., 2022.

Key practices can support exclusive breastfeeding in the first week of life (Feldman-Winter et al., 2020). Opportunities include utilizing the formerly known “Breastfeeding Checklist for Health Supervision” developed by the AAP and creating an electronic version tied to the EHR. This resource would prompt providers to ask relevant questions that would help ascertain breastfeeding concerns and identify the need for additional support (AAP & ACOG, 2022, pp. 157–164).

Similar recommendations are described in the Academy of Breastfeeding Medicine’s (ABM’s) protocol *Breastfeeding-Friendly Physician’s Office—Optimizing Care for Infants and Children* (Vanguri et al., 2021). Breastfeeding support and tools can be embedded even within busy primary care practices and can involve an interdisciplinary support team that includes nursing staff, community partnership with lactation support providers, and staff education (Kawan et al., 2023).

In a review of breastfeeding in the first week, Feldman-Winter et al. (2020) outlined evidence-based practices for infant care providers. The authors highlight a structured framework for breastfeeding assessment across inpatient, discharge, and outpatient settings. During hospitalization, trained professionals are advised to observe feedings every 8–12 hours and again within 8 hours before discharge, with attention to latch, milk transfer, maternal comfort, infant output, and jaundice. At discharge, timely follow-up is emphasized: within 24–48 hours for high-risk dyads (such as late preterm infants, those with excessive weight loss, or maternal pain) and within 48–72 hours for all other breastfed infants. Outpatient assessments focus on maternal issues like nipple trauma, engorgement, or mastitis, and infant concerns such as weight loss of 7% or more at 5–6 days, which warrants close monitoring. Other potential best practices include underscore documenting weight loss with validated tools like NEWT, leveraging tele-lactation and breastfeeding clinics to improve access, and addressing persistent latch or transfer challenges with targeted support.

Pediatric primary care providers can be well positioned to support the breastfeeding dyad (Ware & Piovanetti, 2020). However, most may not receive the necessary training or education to support breastfeeding effectively (Brzezinski et al., 2018; Esselmont et al., 2018). If lactation support is not embedded within the practice, pediatric primary care providers could have a local referral process to lactation experts for their breastfeeding families. The pediatric appointment can involve the following:

1. Identify the breastfeeding differential diagnosis³ after history and physical evaluation of mother and baby, including a feeding assessment.
2. Create an infant feeding plan to ensure adequate nutrition while protecting maternal milk production in the context of prioritizing maternal mental health.
3. Refer for additional breastfeeding help if not available within the primary care provider's office, along with close follow up with the primary care provider.

In addition, Meek et al. (2017) identified opportunities for pediatric and other health care offices to employ breastfeeding-friendly features (see Box 6-5).

BOX 6-5 **Features of a Breastfeeding-Friendly Health Care Office**

- Have a written breastfeeding-friendly office policy.
- Train staff in breastfeeding support skills.
- Discuss breastfeeding during prenatal visits and at each well-child visit.
- Encourage exclusive breastfeeding for about 6 months and provide anticipatory guidance that supports the continuation of breastfeeding as long as desired.
- Incorporate breastfeeding observation into routine care.
- Educate mothers on breastmilk expression and return to work.
- Provide noncommercial breastfeeding educational resources for parents.
- Encourage breastfeeding in the waiting room but provide private space on request.
- Eliminate distribution of free formula.
- Train staff to follow telephone triage protocols to address breastfeeding concerns.
- Collaborate with the local hospital or birthing center and obstetric community regarding breastfeeding-friendly care.
- Link with breastfeeding community resources.
- Monitor breastfeeding rates in the practice.

SOURCE: Meek et al., 2017

When lactation challenges occur or when a mother relies on pumping to sustain her milk supply, it is important not only to address the physical aspects of breastfeeding but also to consider the mother's emotional well-being and the adequacy of her support systems. Close follow-up care should prioritize maternal mental health, recognizing that ongoing efforts to breastfeed, while often encouraged, may in some circumstances place undue strain on mothers and contribute to distress or diminished well-being if adequate support is lacking (Tucker &

³ A differential diagnosis may include a wide range of disorders associated with persistent breast and nipple pain, such as latch issues, pump trauma, or infection (ACOG, 2021).

O'Malley, 2022). When supplementation is medically indicated, it is important for the pediatric primary care provider to recommend the appropriate amount of mother's own milk, donor human milk, or infant formula for the clinical situation to avoid overfeeding and to have a plan to decrease supplementation as soon as clinically prudent (Feldman-Winter et al., 2020).

PROVIDER EDUCATION AND TRAINING

Breastfeeding has been unevenly incorporated into training across health care disciplines. This section focuses on the education and training of the lactation support workforce that is found in the health care setting and those who interface with it (i.e., are provided payment for services by insurance companies or other mechanisms).

Physician Education and Training

Investing in breastfeeding education and training is essential to provide competent breastfeeding care and uphold the principles of primary preventive breastfeeding services. Evidence dating back to 1995 (Arslanian et al., 2022; Freed et al., 1995) shows that physicians report not receiving adequate education and training in breastfeeding, and not enough has changed within the physician workforce (Meek et al., 2020). The AAP conducts periodic surveys to determine the status of pediatrician knowledge, practice patterns, and confidence in providing breastfeeding care (Meek et al., 2020). The most recent analysis indicates that pediatricians' knowledge about breastfeeding has become better aligned with recommendations for breastfeeding; however, more pediatricians than in the past had negative attitudes about the likelihood of breastfeeding success, including mothers reaching their own goals (Feldman-Winter et al., 2017).

A recent landscape analysis of breastfeeding-related physician education in the United States revealed that medical education about lactation in a variety of specialties is not included universally (Meek et al., 2020). Numerous activities and programs have been developed to close the gap in breastfeeding knowledge, attitudes, and confidence among physicians, yet they are not a required part of training programs. Residency training curriculum can result in better outcomes for breastfeeding women (Feldman-Winter et al., 2010). Nevertheless, there are no quality metrics to determine whether breastfeeding care is delivered at all, let alone in an evidence-based and culturally congruent manner.

The ABM has a comprehensive course, *What Every Physician Needs to Know About Breastfeeding*, designed to provide a basic level of education suitable for physicians of all specialties. The course is accessible currently for physicians and other providers from around the world who attend the ABM annual conferences, and microlearning modules have been made available free for all.⁴ The AAP (n.d.) has updated its online curriculum to address learners at all professional levels; it includes cultural examples of care and is designed to reach a younger audience of learners with short videos and a variety of adult learning tools.

Ideally, education and training among health care professionals begins early in the educational process and becomes integrated into the basic sciences component of the curriculum followed by clinical curriculum for doctors, nurses, and all other health professionals that provide care for breastfeeding dyads. In the U.S. Medical Licensing Examination, breastfeeding

⁴ <https://www.bfmed.org/need-to-know-videos>

is delineated in the outline of topics for all three steps of the exam, yet there is wide variability in how medical school curriculum prepares students to develop the knowledge, skills, and attitudes necessary to pass board examination questions related to breastfeeding topics.

Education, training, and now competencies are integrated into step 2 of the Ten Steps to Successful Breastfeeding. The new requirements, including implementation of the Code, involve demonstrating competencies for staff caring for mother–infant dyads in the hospital setting. As this new program requirement is just being implemented, it is too soon to determine if this improves safety and quality of care.

In addition to the above-mentioned breastfeeding training opportunities through ABM and AAP, various other opportunities for breastfeeding education are available. Physicians not only have a duty to provide breastfeeding support as optimal nutrition and immune protection for mothers and their infants, but they also have a role to play in eliminating breastfeeding variances and promoting health equity. Furthermore, in-service training is needed for practicing physicians to ensure clinical competencies are up to date and to minimize misinformation. Research can elucidate best practices for disseminating evidence-based breastfeeding care, adopting new treatments into practice, and coordinating care with other health care professionals interfacing with the family. For example, McCormack et al. (2013) summarized how multicomponent approaches can address, reach, and motivate clinician changes in behavior. In addition, there are important opportunities to engage fathers and partners throughout the life course and lactation journey.

Physicians may become fellows of the ABM (n.d.) and join the Section on Breastfeeding of the AAP (n.d.) to become more involved in breastfeeding and lactation medicine issues. As of 2023, breastfeeding medicine as a specialty was recognized by the North American Board of Breastfeeding and Lactation Medicine (NABBLM) and a board-certifying examination was established. Some physicians in the United States and Canada have passed the board examination and are credentialed as NABBLM-C. In future years, this board will seek recognition by the American Board of Medical Specialties. Physicians with NABBLM-C practice breastfeeding medicine in both inpatient and ambulatory settings

Certified Nurse Midwife Education and Training

Certified nurse midwives in the United States are advanced practice registered nurses who complete a master's or doctoral degree in nurse midwifery from an accredited program. They must pass the certification exam administered by the American Midwifery Certification Board and obtain a state license to practice. Accredited midwifery programs are overseen by the Accreditation Commission for Midwifery Education, which includes competencies related to lactation in its standards for curriculum and clinical training.

Breastfeeding and lactation are core components of midwifery education, reflecting the midwife's role in prenatal, intrapartum, and postpartum care. Curricula typically include physiology of lactation, maternal anatomy and hormonal regulation, assessment, and troubleshooting common breastfeeding problems. While the specific number of hours devoted to breastfeeding varies by program, midwifery students are expected to demonstrate competence in providing evidence-based breastfeeding support before graduation. Many midwives pursue continuing education in lactation, and some go on to become IBCLCs. This dual credential strengthens their ability to address complex lactation issues and lead initiatives in perinatal health.

Nurse Education and Training

Nurses in all health care settings, including hospitals, public health clinics and programs, and community organizations, play a vital role in protecting, promoting, and supporting breastfeeding dyads through evidence-based lactation care (WHO & UNICEF, 2021). However, many nurses may receive minimal education on human milk and lactation during their academic training. Spatz and Pugh (2007) highlighted the integration of breastfeeding education into baccalaureate nursing curricula, emphasizing the importance of equipping nurses with foundational knowledge on lactation care. For example, the University of Pennsylvania's undergraduate course on human milk and lactation includes 28 hours of didactic instruction and 14 hours of clinical experience, serving as a potential model for incorporating lactation education into nursing programs. Comparatively, typical didactic instruction on lactation is usually 1–5 hours embedded in maternal, obstetric, or gynecological coursework. In addition, clinical experience may vary.

Nurses who do not receive sufficient lactation education during their initial training can supplement their education with on-the-job learning, consistent with step 2 of the Ten Steps (Arslanian et al., 2022). Spatz (2005) documented a staff program aimed at promoting breastfeeding support in a children's hospital, demonstrating improved outcomes for vulnerable infants. The Breastfeeding Resource Nurse (BRN) Model comprises ten steps aimed at improving human milk and breastfeeding outcomes, particularly for vulnerable infants (Spatz, 2018). These steps range from informed decision-making and milk supply establishment to discharge preparation and follow-up, with an additional emphasis on specialized nurse education and empowerment to effectively implement the model across health care settings (Spatz, 2018). The BRN Model has been instrumental in advancing lactation care in clinical settings. Marhefka et al. (2021) evaluated this model across a statewide initiative, finding it effective in enhancing breastfeeding support and outcomes. Spatz (2018) expanded on the BRN Model through the Spatz 10-Step Model, which emphasizes comprehensive lactation education and support at the point of care. Froh et al. (2015) explored the experiences of BRNs, underscoring their critical role in improving breastfeeding practices and advocating for systemic changes to optimize care delivery.

Integrating lactation education into nursing curricula and ongoing professional development is crucial for empowering nurses to support breastfeeding dyads effectively. Nurses' roles extend beyond clinical settings to public health and community environments, where they serve as trusted advocates for maternal–child health. By enhancing their knowledge and skills in lactation care, nurses can significantly improve breastfeeding outcomes and likely contribute to long-term health benefits for mothers and infants.

Access to Other Lactation Support Providers: Lactation Consultants, Doulas, and Registered Dietitians

Though not universally available to all mothers, involving lactation consultants, doulas, and other lactation support providers can also positively affect breastfeeding initiation and duration, particularly in low-income, and Black and Hispanic communities (Bonuck et al., 2014; Hartman et al., 2012; Louis-Jacques et al., 2021; Reno, 2018). The support of breastfeeding peer counselors, doulas, and community health workers during the prenatal period in particular has been shown to be effective in improving breastfeeding outcomes in community-based settings

(Khatib et al., 2023; Louis-Jacques et al., 2021; Reno, 2018; Sobczak et al., 2023). In addition, support during labor from a doula can also improve the chances of a vaginal birth, shorten labor, and improve a mother's experience of labor (Acquaye & Spatz, 2021; Bohren et al., 2017; Louis-Jacques et al., 2021), factors that are associated with better breastfeeding outcomes. The impact of peer counselors and community health workers⁵ on breastfeeding outcomes is discussed in detail in Chapter 3.

Following discharge from the hospital, lactation problems can occur, which result in problem-oriented visits to a physician's office or a lactation support professional. Effective management by the physician, advanced practice professional, or lactation support provider is necessary to protect breastfeeding, especially exclusive breastfeeding. There is currently no universal structure to support payment of lactation care for problem-oriented visits if they are not provided by a physician or advanced practice professional. While some insurance companies reimburse a certain number of visits for lactation consultants, this is not widely implemented, and only certain states have Medicaid payment for lactation consultants (see below sections for detailed discussion on Medicaid and payment for services).

Lactation Consultants

IBCLCs provide skilled lactation support, expert breastfeeding and lactation care, and promote policies and practices that support breastfeeding (International Board of Lactation Consultant Commission, 2017). In addition to pathways for health care professionals to become IBCLCs, more nontraditional pathways enable community members to attain the certification (see Box 6-6). The IBCLC designation requires rigorous training with many hours of supervised care for lactating families, along with didactic learning and a certification exam. Many IBCLCs work in hospital settings, but others work in the community in outpatient settings, in private practice, or in association with a hospital-based outpatient system. As of March 2025, there were 20,540 IBCLCs in the United States; most were based in California (2,913), Texas (1,496), and New York (1,091) (IBLCE, 2025).

BOX 6-6

Pathways to Qualify to Sit for the IBCLC Exam

Candidates for the International Board Certified Lactation Consultant (IBCLC) credential are required to complete college-level coursework in 14 subject areas and 95 hours of lactation-specific education, including 5 hours focused on communications skills. The IBCLC credential also requires clinical experience, through one of three pathways:

⁵ *Community health workers*, or *community navigators*, are trusted members of the community and serve as liaisons to health and social services. They also provide outreach, education, informal counseling, social support, and advocacy (American Public Health Association, 2024). For those working with new mothers, it is important to have basic breastfeeding knowledge and to be aware of local breastfeeding resources. Additional breastfeeding training is also helpful (Furman et al., 2013).

- Pathway 1: Recognized health professionals and breastfeeding support counselors. Complete educational requirements above and at least 1,000 hours of lactation-specific clinical practice in the 5 years prior to sitting for the exam.
- Pathway 2: Accredited lactation academic programs. Didactic education in an accredited program for 95 hours of lactation-specific training, as well as 300 hours of lactation-specific practice directly supervised by an IBCLC in good standing. Pathway 2 training programs are accredited by the Commission on Accreditation of Allied Health Education Programs (n.d.); currently accredited programs can be found on the organization's website by filtering "Profession: Lactation consultant."
- Pathway 3: Mentorship with an IBCLC. Complete didactic education and participate in a preapproved 500-hour mentorship training with an IBCLC in good standing.

SOURCE: USBC, n.d.

Doulas

A doula is a trained professional who provides continuous support, including physical, emotional, and informational support before, during, and after childbirth. The presence of continuous support such as that of doulas is one of the most effective ways to improve labor and delivery outcomes (Caughey et al., 2014). Doulas have been noted to improve not only birth outcomes, but also the initiation and continuation of breastfeeding, including for those in low-income populations (Sobczak et al., 2023). The first doula certification program was developed by Doulas of North America in 1982 by perinatal child health experts; the organization now serves countries across the globe. As lay professionals, doulas do not require a license, but more than 80 organizations across the United States currently provide doula certifications (Ramey-Collier et al., 2023), and breastfeeding education is included in their training. More states are now taking steps to add doula care into Medicaid coverage (Mondestin, 2024). Community-based doulas are a strategy for improving birth outcomes and parent-child bonding and for addressing health equity by supporting women who may not trust the health care system (Prenatal-to-3 Policy Impact Center, 2024).

Registered Dietitians

Dietitians' expertise in nutrition highlights their importance in breastfeeding support as the first food. A registered dietitian has earned a graduate degree from an accredited dietetics program. The supervised practice requirement is 1,000 hours of real-world experience followed by passing a national exam to become a credentialed registered dietitian and meeting all state requirements for licensure (Academy of Nutrition and Dietetics [AND], n.d.) It is the position of the AND that registered dietitians should continue efforts to shift the norm of infant feeding toward human milk feeding (Lessen & Kavanagh, 2015; Theurich & McCool, 2016). Despite calls for the incorporation of lactation education and training into dietetics curricula, no specific learning outcomes are mandated (AND, 2021). Some registered dietitians attain the IBCLC

certification; in 2022, 660 (<1%) registered dietitians self-reported that they were also IBCLCs (Hilliard, 2023).

USBC Core Competencies

As described above, breastfeeding has been incorporated unevenly into training across health care disciplines. Adding to the unevenness of health care preparedness for breastfeeding support, some providers lack personal experience with breastfeeding, which can present challenges when treating others. This is a unique consideration for health care—for example, it would be unacceptable for an oncologist to rely on personal experience to treat cancer. However, a 2004 national survey of pediatricians found that only 63% of those without personal experience felt confident managing breastfeeding problems, compared with 89% of those with personal experience (Feldman-Winter et al., 2008). With 84% of U.S. women initiating breastfeeding (see Chapter 1), it is imperative that all health care disciplines become proficient in breastfeeding support.

To address these gaps, the U.S. Breastfeeding Committee (USBC, 2010) developed a set of core competencies for all health professionals that include knowledge, skills, and attitudes, as well as additional skills for health team members with primary or secondary care responsibilities for childbearing women, infants, and young children. Furthermore, the USBC (2010) recommends that *all* health professionals incorporate these core competencies in their work to provide effective and comprehensive services to mothers, children, and families.

USBC (2010) calls for all health care team members to recognize breastfeeding as the optimal feeding for infants and young children, to understand the basic anatomy and physiology of the breast, and to know when and how to refer to appropriate lactation specialists. USBC (2010) states that those who work with infants and childbearing women should be able to share strategies for common breastfeeding challenges, and those who provide hands-on care should be able to assess the lactating breast, recognize normal and abnormal feeding patterns, and develop a breastfeeding care plan. Additionally, USBC (2010) recommends that health professional organizations include relevant breastfeeding-related knowledge and skills in the core training competencies for their disciplines.

Conclusion 6-2: The current lactation support workforce in the health care setting consists of a wide range of providers (e.g., nurses and nurse practitioners, midwives, physicians, advanced practice professionals, IBCLCs, registered dietitians, peer counselors, doulas). Their education and training with respect to breastfeeding care and training differ widely.

Recommendation 6-2: Accrediting boards and regulatory bodies for health professionals, federal and state agencies, public health organizations, and philanthropic organizations should increase investment in the training and availability of lactation support providers.

- a. **Accrediting and regulatory bodies for health professionals and state boards of nursing should include a minimum set of competencies in human lactation and breastfeeding into their licensing, certification, and accreditation requirements.**
- b. **Federal agencies, such as the U.S. Health Resources and Services Administration and U.S. Department of Agriculture, in collaboration with state, tribal, and local governments, should work together to provide support for the training and certification of health professionals or lactation support providers to provide breastfeeding support services (e.g., through the breastfeeding peer counseling program offered by the Special Supplemental Nutrition Program for Women, Infants, and Children).**
- c. **Public health organizations and philanthropic organizations should work together to fund initiatives to increase the number of lactation support providers to ensure that their communities' lactation needs are met.**

Accrediting or regulatory bodies for health professionals, including state licensing boards for nursing, need to explore including a minimum set of competencies in human lactation and breastfeeding into their licensing, certification, and accreditation requirements. This could ensure that individuals providing breastfeeding support in health care settings would have a shared, minimum level of training and education.

In addition, a significant portion of the lactation support workforce is employed in community-based or public health settings, such as the Special Supplemental Nutrition Program for Women, Infants, and Children (see Chapter 4). Thus, federal and state investment in education and training initiatives for registered dietitians, nutritionists or nutrition assistants, IBCLCs, and breastfeeding peer counselors is critical to ensure that community-level needs are met for primary breastfeeding care. In addition, investment in these initiatives could also support data collection on workforce capacity and compensation to ensure that lactation support providers from historically underserved communities are compensated for their work appropriately.

To safeguard the delivery of an optimal standard of care, consistency and alignment across workforce training and education are needed. This will facilitate continuity of care across the life course for the breastfeeding dyad. Additional efforts to collect data on the demographics of the workforce, its geographic location, and the populations it serves will aid in evaluating the impact of this recommendation.

DOCUMENTATION OF BREASTFEEDING OUTCOMES

It is said, “If it was not documented it was not done.” Almost everything that takes place in the delivery of health care services is documented in the medical record. The medical record

contains all protected health information, which is kept private except by covered entities (i.e., treating health care professionals). The medical record was recorded mainly by handwritten paper charts until the Affordable Care Act, which contained penalties for not converting to EHRs. The EHR provides an opportunity to exchange health information between health care professionals and potentially lactation support providers; it is also tied to coding and billing of health-related services (see next section).

Opportunities to improve breastfeeding monitoring and evaluation in the ambulatory setting can complement the public health surveillance efforts described in Chapter 3. However, additional monitoring is needed to address differences in breastfeeding outcomes among various populations, to understand breastfeeding continuation rates throughout the postpartum period, and to support health care programs and initiatives designed to support breastfeeding.

HEDIS Measures

A Healthcare Effectiveness Data Information Set (HEDIS) is a widely used tool for measuring health care performance used by over 90% of U.S. health plans, covering more than 190 million enrollees. The dataset is determined by the National Committee for Quality Assurance (NCQA), which has representatives from primary and preventive care. NCQA identified breastfeeding as a priority in 2014, and it implemented measures for exclusive breastfeeding and exclusive breastfeeding (considering mother's feeding plan); the Perinatal Care Core Measures 05 and 05a (PC-05 and PC-05a) (Feldman-Winter et al., 2013). This reporting system, adopted and monitored by The Joint Commission, previously required that hospitals monitor and report exclusive breastfeeding rates, as well as exclusive breastfeeding rates including mother's feeding plan, on an annual basis, which provided additional data on breastfeeding and led to improvements in hospital-based quality improvement initiatives (USBC, 2013; Feldman-Winter et al., 2013). The Joint Commission no longer requires these measures, however, as it has transitioned to incentive-based programs (i.e., the outcomes are no longer required to be reported to the NCQA on an annual basis). Most hospitals continue to track them voluntarily, which provides a window into the impact of maternity care practices in the inpatient setting on breastfeeding outcomes. But the measures are no longer tied to accreditation and associated quality standards.

Similar processes would presumably occur if an ambulatory HEDIS measure was established and aligned with the Healthy People goals, such as the 2030 goal for 6 months of exclusive breastfeeding for 42.4% of infants. There could also be goals regarding reduction or elimination of variances. This measure would prompt EHR vendors to create automated fields that capture infant feeding at each visit and permit a more universal data capture to determine baseline and post-improvement project outcomes.

Another benefit to a universal breastfeeding HEDIS measure for the ambulatory setting would be to identify "lactation care deserts," as indicated by low breastfeeding rates. Currently, the only county-level breastfeeding data available are initiation rates from the birth certificate. With duration data, federal resources such as grants and Title V funding could be appropriated to these areas to fill gaps in care and enhance the workforce with culturally congruent care providers.

Measures could also be adopted for prenatal care regarding anticipatory guidance for breastfeeding and lactation. And, to identify lactation care deserts and support targeted workforce development, the Health Resources and Services Administration's National Center for

Health Workforce Analysis could include data on lactation support providers in its Area Health Resources Files.

Finally, national datasets monitor breastfeeding and the use of human milk for sick and vulnerable infants; for example, the Vermont Oxford Network provides coordinated programs of research, education, and quality improvement projects. And national collaborative data collection projects for well newborns include the Better Outcomes through Research on Newborns Network, which collects national data to identify issues such as neonatal weight loss, hyperbilirubinemia, and other potential adverse outcomes of poor breastfeeding care. However, a more robust preventive strategy can be imagined and implemented.

Conclusion 6-3: The creation of a HEDIS performance measure for breastfeeding would require EHRs to create automated fields to better capture infant feeding practices across time (i.e., in the birth setting and during postpartum and pediatric care). Practices at baseline and after implementing improvement projects would be recorded to assess how well health plans and health care providers protect, support, and promote breastfeeding. In addition, measures that are aligned with the care and support of sick or vulnerable infants can be established, to better track breastfeeding outcomes and future investment in inpatient settings.

Recommendation 6-3: The U.S. Centers for Medicare & Medicaid Services should develop and implement a Healthcare Effectiveness Data Information Set performance measure of breastfeeding.

Overall, a HEDIS measure would provide a standardized approach to evaluating and comparing the performance of different health plans (e.g., by identifying breastfeeding trends) so that health care networks can make actionable and informed decisions on potential quality improvement initiatives needed to improve breastfeeding rates.

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Payment and Financing of Breastfeeding Services and Supplies

How families pay for breastfeeding services and supplies can affect which health care providers, services, and settings are available to them. At the time of this report, health insurance coverage in the United States continues to operate as a complex, patchwork system, with state-by-state differences in the payment of perinatal services and breastfeeding support. In addition, several federal and state policies and regulations can affect access to lactation services and supplies across settings, as well as the quality of these services and supplies. These policies also influence the scope of practice for providers and payment for their services.

For a new family, navigating these complex and intersecting systems can be challenging, and lactation support is only one of many new health care supports a new parent may need to access. This chapter focuses on what is known about payment for breastfeeding services and supplies, as well as existing and promising policy and programmatic approaches.

PAYERS: AN OVERVIEW

Coverage or payment for breastfeeding care and supplies in the United States is complex and often opaque to families needing care. Because lactation involves two people, care may be directed toward the mother, the infant, or both. When breastfeeding concerns arise, it may not be obvious whether the family should consult the maternal care provider, the pediatric care provider, both, or a lactation support provider. Furthermore, when the breastfeeding dyad is being seen (e.g., for trouble latching, for neonatal weight loss), assessments and interventions may address both the mother and the infant and therefore generate health records, including coding and billing, for both individuals. For multiple gestations, three individuals may be involved (e.g., a mother and two infants), and in the case of LGBTQ+ families, there may be two lactating parents and one infant (e.g., two mothers who induce lactation and one infant). Medical records must be generated for each person receiving care, but often only one of the parties may be billed.

Private health insurance, including employment-based and direct-purchase plans, covered approximately 68.1% of U.S. adults ages 18-64 and 54% of children ages 0-17 years in 2023¹

¹ These estimates are from the National Center for Health Statistics' 2023 National Health Interview Survey (Cohen et al., 2025). People were described as *uninsured* if they were not insured through private health insurance, Medicare, Medicaid, the Children's Health Insurance Program (CHIP), a state-sponsored or other government plan, or a military plan. People were also described as uninsured if they had only Indian Health Service coverage or had only a private plan that paid for one type of service, such as accidents or dental care. *Public coverage* includes Medicaid, CHIP, state-sponsored or other government-sponsored health plan, Medicare, and military plans. *Private coverage* includes any comprehensive private insurance plan, including health maintenance and preferred provider organizations. Data are based on household interviews of a sample of the U.S. civilian noninstitutionalized population (Cohen et al., 2025).

(Cohen et al., 2025). Public programs—such as Medicare, Medicaid, TRICARE, the Civilian Health and Medical Program of the Department of Veterans Affairs, and Veterans Affairs (VA) coverage—accounted for 23% of adults and 44.2% of children in 2023. The committee notes that while private insurance remains slightly more common among children ages 0–17 years, almost half of U.S. children are covered by public programs such as Medicaid or the Children’s Health Insurance Program (CHIP) (Cohen et al., 2025). And as of 2023, 10.9% of adults and 3.9% of children were uninsured. See Figures 7-1 and 7-2 for a visual representation of these differences in health insurance coverage for adults and children in the United States.

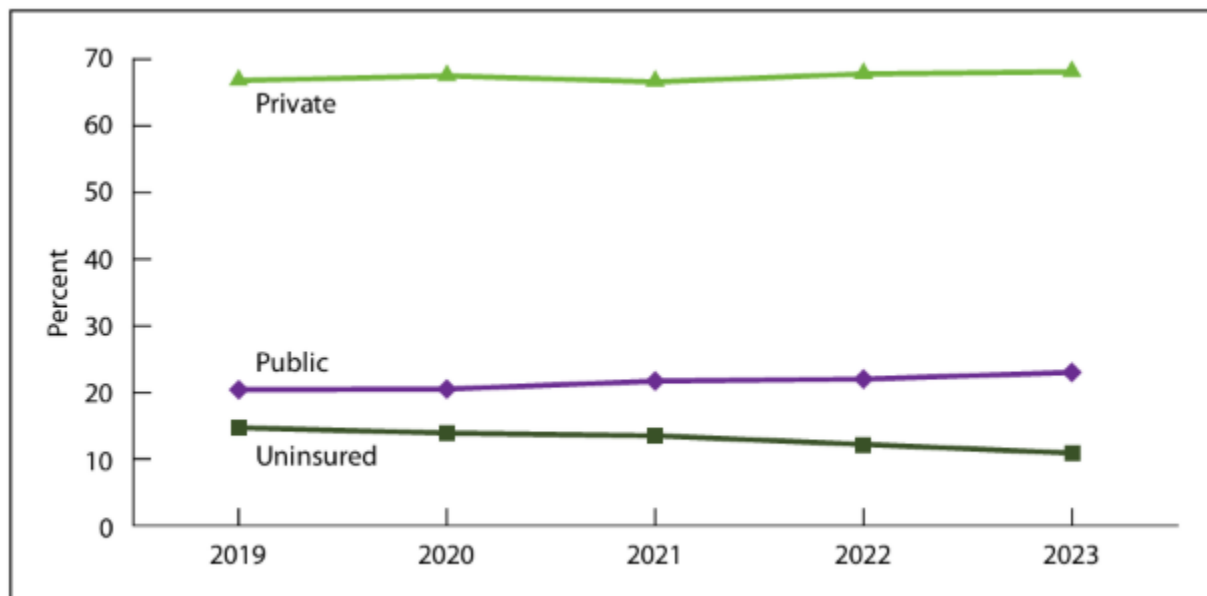


FIGURE 7-1 Percentage of adults ages 18–64 who were uninsured or had public or private coverage, by year: United States, 2019–2023.

SOURCE: Data from the National Center for Health Statistics, National Health Interview Survey, 2019–2023; Cohen et al., 2025.

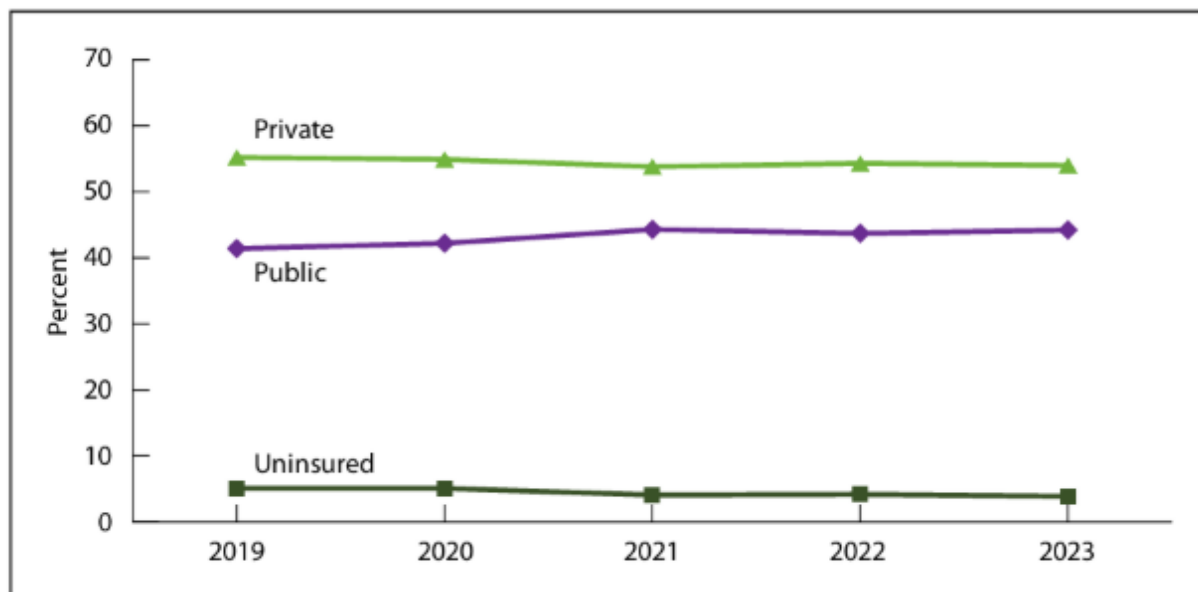


FIGURE 7-2 Percentage of children ages 0–17 years who were uninsured or had public or private coverage, by year: United States, 2019–2023.

SOURCE: Data from the National Center for Health Statistics, National Health Interview Survey, 2019–2023; Cohen et al., 2025.

The Patient Protection and Affordable Care Act (ACA) of 2010 expanded health insurance coverage in the United States, particularly for historically underserved communities (NASEM, 2024). Prior to its enactment, most individuals obtained coverage through employer-sponsored plans, purchased insurance independently, or qualified for Medicaid based on state-determined income thresholds.

The ACA mandated that all non-grandfathered health insurance plans cover breastfeeding support and supplies, but the specifics of this coverage can vary significantly among insurers; this can contribute to differences in access to lactation services and equipment (National Women’s Law Center [NWLC], 2015). The Institute of Medicine (2011) recommended that comprehensive lactation support and counseling and the costs of breastfeeding equipment be covered as a preventive service for women, which the Health Resources and Services Administration (HRSA) of the Department of Health and Human Services (HHS) subsequently adopted as part of the Women’s Preventive Services Initiative (WPSI). Coverage is for “comprehensive lactation support and counseling, including the costs of breastfeeding equipment, to ensure the successful initiation and continuation of breastfeeding” (NWLC, 2015, p. 7).

However, some insurance companies impose restrictions, do not have a network of lactation support providers, or impose administrative barriers or insufficient coverage that prevent mothers from obtaining appropriate and timely lactation support and adequate equipment, all of which undermines and violates the intent of the ACA (NWLC, 2015; U.S. Breastfeeding Committee [USBC], 2022). Payment for breastfeeding services and supplies is difficult for insurers to incorporate into existing health care delivery models because billing for payment typically requires a diagnosis code, and breastfeeding is a normal, physiological behavior. In addition, the coverage of lactation support providers varies by in-network system,

geographic proximity limits, and licensure and training requirements. Finally, limitations to access to breastfeeding equipment and supplies (e.g., breast pumps) may make hospital-grade breast pumps or pasteurized donor human milk particularly difficult to access (USBC, 2022).

PRIVATE INSURANCE

Private, or nongovernment-sponsored, insurance includes employer-based insurance, as well as direct-purchase insurance for persons whose employers do not provide insurance or work status does not qualify for employer-sponsored insurance. People who lack employer-sponsored insurance options may access private insurance through the government-sponsored health insurance exchange as part of the ACA.

Private insurance companies make their own rules for what is covered in their plans, unless the state or federal government, as with the ACA, has stipulated that insurance companies must cover certain services. Under the ACA, private health insurance companies are required to cover preventive services, including lactation support, counseling, and breastfeeding equipment (Patient Protection and Affordable Care Act, 2010; see Box 7-1).

BOX 7-1

Breastfeeding Services and Supplies: Women's Preventive Services Initiative

Clinical Recommendations:

- Comprehensive lactation support services (including consultation; counseling; education by clinicians and peer support services; and breastfeeding equipment and supplies) during the antenatal, perinatal, and postpartum periods to optimize the successful initiation and maintenance of breastfeeding.
- Breastfeeding equipment and supplies include, but are not limited to, double electric breast pumps (including pump parts and maintenance) and breast milk storage supplies. Access to double electric pumps should be a priority to optimize breastfeeding and should not be predicated on prior failure of a manual pump. Breastfeeding equipment may also include equipment and supplies as clinically indicated to support dyads with breastfeeding difficulties and those who need additional services.

Implementation Considerations:

- Lactation support services include consultation, counseling and psychosocial support, education, breastfeeding equipment, and supplies.
- Lactation support services should be delivered and provided across the antenatal, perinatal, and postpartum periods to ensure successful preparation, initiation, and continuation of breastfeeding.

- Lactation support services should be respectful, appropriately patient centered, culturally and linguistically competent, and sensitive to those who are having difficulty with breastfeeding, regardless of the cause.
- Clinical lactation professionals providing clinical care include, but are not limited to, licensed lactation consultants, the IBCLC, certified midwives, certified nurse-midwives, certified professional midwives, nurses, physician assistants, nurse practitioners, and physicians.
- Lactation personnel providing counseling, education or peer support include lactation counselors/breastfeeding educators and peer supporters.
- Clinical trials of interventions including at least 5 in-person visits across antenatal, perinatal, and postpartum periods to promote and support breastfeeding showed benefit, but more visits may be required, including psychosocial counseling for breastfeeding.

SOURCE: Excerpted from Women's Preventive Services Initiative, 2023, p. 20.

Since the ACA was signed into law, research has shown that its mandate to include lactation support services increased the probability of breastfeeding initiation among privately insured mothers by up to 2.5 percentage points, or approximately 47,000 more infants being breastfed than before, though the true effect may be higher (Kapinos et al., 2017). In addition, Kapinos et al. (2017) found an upward trend in breastfeeding rates of infants at hospital discharge across most payment categories in response to the ACA (see Figure 7-3).

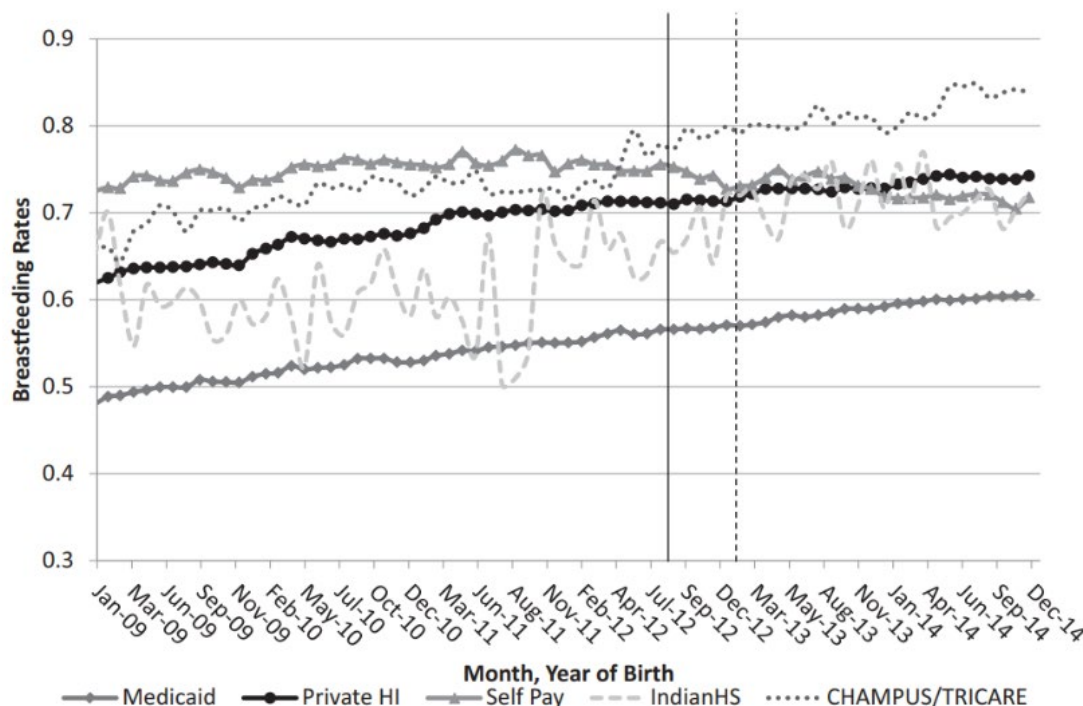


FIGURE 7-3 Trends in breastfeeding initiation rates, by source of payment (for delivery). NOTES: Vertical lines represent the legislative implementation (August 2012) and likely effective implementation at the modal plan start month (January 2013) dates. N = 24,005,896 births. CHAMPUS = Civilian Health and Medical Program of Uniformed Service; Indian HS = Indian Health Service.

SOURCE: Data from the National Vital Statistics Survey, 2009–2014; Kapinos et al., 2017.

Although breastfeeding initiation rates were consistently lower among births covered by Medicaid compared with those covered by private insurance, the trends before the ACA are parallel. This parallelism suggests that, prior to the ACA’s implementation, breastfeeding indicators were improving at similar rates across these groups, despite the existing gap in initiation levels. The mandate had the largest impact on communities with historically low rates of breastfeeding, including Black mothers, mothers with a high school education, and mothers who were unmarried (Kapinos et al., 2017).

Although the ACA has improved the likelihood of breastfeeding initiation, challenges remain within the current system. These include the complexity of insurance plans; a lack of transparency; differences in coverage for breastfeeding and lactation care; and financial barriers, such as high premiums, out-of-pocket costs, and uncovered services. The following sections address challenges specifically related to payment for breastfeeding services and coverage for breastfeeding equipment and supplies.

Private Insurance Payment for Breastfeeding Services

In a review of coverage policies in 15 state marketplaces, the NWLC (2015) found that many women were unable to access breastfeeding services. Obstacles included limitations on support and supplies, lack of available in-network providers, and administrative barriers to accessing support. Moreover, some support providers require fee for service at the time of

service (USBC, 2022), despite the ACA mandate for coverage; often, this is because of various insurer requirements, such as licensure. Such fee-for-service lactation support might be out of reach for families with economic challenges.

For instance, some insurers list maternity providers and pediatricians as in-network lactation providers, not recognizing that most physicians receive minimal training in breastfeeding (see Chapter 6). Others cover only lactation support providers who are “otherwise licensed”—for example, as a nurse or registered dietitian. This practice excludes most lactation support providers, despite their having completed breastfeeding-specific training (USBC, n.d.-b), and excludes these individuals from payment and career development. Even when a lactation support provider is recognized as in network, payment for services is complex. The WPSI notes that antenatal lactation support and counseling are considered part of routine care, so these services are often included within the global obstetric professional package, a fixed capitated rate for pregnancy and delivery calculated based on normal, healthy conditions (ACOG, 2023). After birth, some payers will reimburse visits for preventive medicine counseling in addition to the global obstetric package. Care for breastfeeding problems, such as mastitis or a breast abscess, may be billed as an outpatient problem visit (NWLC, 2015).

The WPSI Coding Guide (ACOG, 2023) outlines several pages of mechanisms for billing for services of advanced practice providers, lactation consultants, and nonclinical staff, noting, “It is advisable to check with specific payers for their specific policies and to obtain those instructions in writing” (p. 2; see Box 7-2). For example, a web page for an outpatient lactation clinic in Texas provides patients with similar advice:

The Affordable Care Act requires insurance companies to fully cover lactation services without limit and without cost sharing. However, your insurance company may apply a co-pay or co-insurance to your visit, put a portion of your visit cost toward your deductible, or limit the number of visits you may receive due to variations in their interpretations of the Affordable Care Act. (McGovern Medical School, n.d., “Important Note” section, para. 1)

BOX 7-2

Billing for Breastfeeding Services and Supplies: Women’s Preventive Services Initiative

ICD-10-CM (*International Classification of Diseases, Tenth Revision, Clinical Modification*) is a standardized coding system used to classify diseases and medical conditions. Health care providers use these codes for diagnosing patients and recording morbidity data (Centers for Disease Control and Prevention [CDC], 2024). The Women’s Preventive Services Initiative (ACOG, 2023) provides guidance related to specific billing codes to use for payment for breastfeeding or lactation support services or supplies.

Billing for Lactation Services

- Postpartum care: Lactation counseling is typically bundled into postpartum care. Only issues related to complications, illness, or disease can be billed separately.
- Antepartum counseling: Depending on the insurer, lactation counseling during pregnancy may be billed separately from the global obstetrics package.
- Breastfeeding support by physicians and nonphysician lactation support providers:
 - If both a physician and lactation counselor provide care, a single evaluation and management (E/M) code is used.
 - If only a licensed lactation counselor (e.g., nurse practitioner, physician assistant) provides care, E/M code 99211 may be used.
 - For breastfeeding complications requiring physician evaluation, codes 99202–99205 (new patients) or 99212–99215 (established patients) are used.

Group and Preventive Counseling

- Preventive medicine counseling codes 99401–99404 cover lactation support based on time spent.
- Group breastfeeding education can be billed using codes 98961–98962 or 99411–99412.

Follow-Up and Behavioral Health Services

- Nonclinical staff may provide follow-up support under health behavior assessment codes (96156–96171), though insurance coverage varies.

Billing for Breastfeeding Equipment or Supplies

- Insurers that cover lactation equipment may reimburse for breast pumps under supply codes E0602–E0604.
- Replacement parts for breast pumps are billed using A4281–A4286.

ICD-10-CM Diagnosis Codes

- Common breastfeeding-related diagnoses include infections (O91.02, O91.03), abscesses (O91.12, O91.13), mastitis (O91.22, O91.23), nipple issues (O92.03, O92.13), and lactation difficulties (O92.3–O92.79).
- The general encounter code for lactation care is Z39.1.

SOURCE: CDC, 2024; ACOG, 2023.

This patchwork of payment policies disincentivizes health care facilities from offering lactation services, removes opportunities for lactation support providers to be paid for their services, and places an undue burden on mothers and families who may be struggling to meet their breastfeeding goals. This may be because payment for obstetric and neonatal care is bundled whether or not lactation consultants are hired to provide breastfeeding and lactation support services prenatally, at the time of delivery, or during the postpartum period.

Private Insurance Payment for Breastfeeding Equipment and Supplies

Mothers may choose to express their milk for a variety of reasons (e.g., their own comfort, to reduce engorgement, to increase milk supply, or to provide human milk for their baby if they are separated) (Buchko, 1994; Chapman et al., 2001; Geraghty, 2012; Meserve, 1982; Nicholson, 1985; Rasmussen and Geraghty, 2011). Nardella et al. (2024) report that breast pump use is associated with longer duration of breastfeeding, with the greatest magnitude of this association found among non-Hispanic Black and Native American mothers. The options for families to acquire breast pumps vary by private insurer, and the number and type of breast pumps available for new families to choose from has dramatically increased, such that new families may be confused about how to discern which pump is right for their infant feeding goals and rely on online sources or their health care practitioner to choose one (Becker et al., 2016). One size does not fit all, and there is considerable heterogeneity in milk output among electric pumps (Kapinos et al., 2018). And despite having access to pumps through durable medical equipment (DME) supply companies, families may not be educated adequately on how to use the pump correctly. For example, they may have to learn through product information rather than skilled support and assistance.

Timely delivery of breast pumps through DME providers is critical to supporting successful breastfeeding initiation and continuation, particularly for mothers separated from their infants because of medical complications or returning to work soon after birth. Parker et al. (2012) and Meier et al. (2008) have noted that initiating milk expression within the first hour postpartum increases milk volume and the likelihood of exclusive breastfeeding at 6 weeks and beyond. The American Academy of Pediatrics (AAP) and the Academy of Breastfeeding Medicine (ABM) recommend early and frequent milk removal, especially when infants are unable to nurse directly (e.g., see Eglash et al., 2017). However, access barriers such as delayed DME authorization, limited supply networks, and insurance-related bottlenecks often prolong pump delivery by days, particularly for Medicaid recipients (U.S. Government Accountability Office, 2016). These delays may impact early lactation windows, especially for low-income or medically vulnerable populations.

In the United States, breast pumps are currently regulated by the Food and Drug Administration (FDA, 2023) as medical devices. However, issues with the safety and effectiveness of these devices remain, and mothers may experience adverse effects such as injury or breast tissue damage if provided with an inappropriate pump or not instructed on proper use (Becker et al., 2016). Mothers may file a voluntary report with the FDA (2018) if they become injured or experience an infection from a breast pump, but many families do not know about this mechanism.

Although not a prerequisite for breastfeeding success, the ACA mandates that single-user, double electric breast pumps be provided by insurers as DME. Breast pumps can be provided based on three criteria: the ability of the pump to mimic the infant breastfeeding directly, the stage of lactation, and the degree of pump dependency (Meier et al., 2016). However, insurers may not provide electric pumps unless deemed medically necessary² (e.g., Anthem Blue Cross, Blue Shield, 2024). Other supplies include appropriately sized flanges and storage supplies.

² An electric breast pump is not considered medically necessary in the absence of ongoing breastfeeding or when established criteria are not met.

Electric double pumps that are often used in the hospital may be referred to as “hospital grade” and can involve multiple users, can pump both breasts simultaneously, or are typically not portable and are used for mothers in hospital settings (e.g., for feeding premature infants); however, this term is not currently recognized by the FDA (2021). These pumps may be most effective for those mothers who are pump dependent and in the early stages of lactation, such as those mothers with infants in the neonatal intensive care unit (Spatz & Edwards, 2016). For mothers who have been breastfeeding directly and need to pump for separation issues such as return to work or school, a portable double electric pump is typically sufficient for milk expression. A lactation support provider can help to ensure proper fit of the flanges, appropriate pump pressures, and cycling speeds that are most effective for the person using them.

PUBLIC INSURANCE

Public insurance supports for the breastfeeding dyad described below are provided through Medicaid, the U.S. military health system, and the Indian Health Service. Breastfeeding supports may also be covered for the infant through CHIP.

Medicaid

Medicaid, administered by the Centers for Medicare & Medicaid Services (CMS), is a joint federal–state program that provides health coverage to low-income individuals. States participate voluntarily but must adhere to federal guidelines. Initially linked to cash assistance programs such as Aid to Families with Dependent Children, Medicaid eligibility criteria has evolved over time, particularly for pregnant women, children, and people with disabilities. The 1996 welfare reform law severed Medicaid eligibility from cash assistance, and in 1997, CHIP was established to cover children from low-income backgrounds above Medicaid income thresholds (Rudowitz et al., 2024).

Medicaid Expansion

The ACA significantly reshaped Medicaid, allowing states to *expand* coverage to nearly all nonelderly adults with incomes up to 138% of the federal poverty level. However, a 2012 Supreme Court ruling made this expansion optional, leading to variation in coverage across states. States are required to cover breast pumps and consultation services for Medicaid expansion beneficiaries under the ACA’s preventive services requirement. For nonexpansion states, there is no federal requirement for coverage of breastfeeding services (Ranji et al., 2021).

Medicaid coverage for pregnant women has expanded through various policy changes. The ACA mandated benefits including tobacco cessation programs and birth center services, and some states now reimburse for doula services to improve maternal health outcomes. The COVID-19 pandemic dramatically influenced Medicaid enrollment and funding; for example, telehealth services were expanded, improving access to prenatal and postpartum care, particularly in rural areas (Hawkins, 2023). Federal legislation mandated continuous Medicaid coverage in exchange for enhanced funding, leading to significant enrollment increases and a reduction in the uninsured rate. However, the expiration of these provisions in April 2023 has led to disenrollments, likely reversing some of these gains (Rudowitz et al., 2024).

To date, 40 states and the District of Columbia have adopted the Medicaid expansion, and 10 states have not adopted the expansion. Hawkins et al. (2022) described the impacts of the ACA and Medicaid expansion on breast pump claims and breastfeeding rates among women

with different insurance. A significant increase in insurance claims for breast pumps followed the implementation of the ACA, indicating an increase in access to breastfeeding supports (Hawkins et al., 2022). In addition, the authors noted an increase in breastfeeding initiation and duration among public insurance recipients, suggesting that the policy change and expansion positively influenced breastfeeding practices across insurance type (Hawkins et al., 2022).

Given the expansion in most states and retained coverage for pregnant women and parents, breastfeeding preventive services is a natural fit through Medicaid. In states that have not expanded Medicaid, large gaps in coverage remain between income eligibility and those that qualify for marketplace subsidies, leaving millions without coverage.

Medicaid Extension

In 2021, the American Rescue Plan Act allowed states to extend postpartum Medicaid coverage from 60 days to 12 months postpartum, providing more comprehensive care for new mothers (KFF, 2025a). Before this was enacted, many low-income mothers lost their health coverage after 60 days, which significantly limited their ability to receive health care, including lactation services and supplies. This new option took effect on April 1, 2022, and was originally available for 5 years; however, the option was made permanent by the Consolidated Appropriations Act of 2023. CMS released guidance on how states could implement this option; since then, 48 states and the District of Columbia have adopted the full extension (KFF, 2025a). In addition, many professional organizations—including the AAP; American College of Obstetricians and Gynecologists; American Medical Association; Association of Women’s Health, Obstetrics, and Neonatal Nurses; American College of Nurse-Midwives; and other leading authorities—have publicly supported the extension of Medicaid coverage (Hawkins, 2022).

While direct research linking Medicaid extension to breastfeeding rates is limited because of the recency of the extension, extending postpartum Medicaid coverage to 12 months is anticipated to enhance breastfeeding outcomes by providing continuous access to essential health care services and support.

Medicaid and Breastfeeding Support

Medicaid plays a crucial role in maternity care, covering over 40% of births nationwide and the majority in several states (CMS, 2024). States have considerable flexibility in determining income eligibility, defining maternity services, and implementing utilization controls such as prior authorization and preferred drug lists. While benefits may vary based on eligibility, most states provide the full Medicaid package to pregnant individuals, often through managed care organizations that may differ in specific service coverage. Additionally, states influence access to maternity care through reimbursement policies, frequently using bundled payments that cover prenatal, labor, and postpartum care, as noted above. While bundled payments help manage costs and promote coordinated care, they can also make it challenging to track individual services such as health education or counseling.

Medicaid eligibility is based on household income, family size, and state of residence, with states in the Southeast generally setting lower income caps than those in the Northeast and California, leaving many uninsured (further discussion on uninsurance follows). Most Medicaid programs are administered through private insurance companies with negotiated rates and coverage plans, often offering benefits that are more limited than those in employer-sponsored

plans. In rare cases, mothers may qualify for Medicare if they have a permanent disability or a qualifying condition, such as end-stage renal disease.

For women with Medicaid coverage, lactation service and supply coverage are determined by each state's Medicaid policy. States cover lactation support services and breast pumps under the ACA's preventive services requirements. However, states that have not expanded Medicaid are not federally required to cover lactation support services (Ranji et al., 2022). Figures 7-4 and 7-5 present state Medicaid coverage for lactation support (i.e., breastfeeding services) and breast pumps, respectively. Data are included from responding states, and the tables do not capture coverage of all states and territories.

Service	States Covering Service	No Coverage
Breastfeeding education	31 states: AK, CA, CO, CT, DC, DE, HI, IA, ID, IL, IN, KS, MA, MD, ME, MI, MO, NC, NJ, NV, NY, OK, OR, PA, SC, UT, VA, VT, WA, WI, WY	11 states: AL, AZ, FL, LA, MS, MT, ND, RI, TN, TX, WV
Lactation consultation— inpatient	30 states: AL, CA, CO, CT, DC, DE, HI, IA, ID, IL, IN, KS, MA, MD, ME, MI, MO, MT, NJ, NV, NY, OK, OR, SC, UT, VT, WA, WI, WV, WY Separate payment: DC, HI, ID, IN, KS, MT	12 states: AK, AZ, FL, LA, MS, NC, ND, PA, RI, TN, TX, VA
Lactation consultation— outpatient	27 states: CA, CO, CT, DC, DE, HI, IA, ID, IL, IN, KS, MD, ME, MI, MO, NC, NV, NY, OK, OR, SC, UT, VA, VT, WI, WV, WY Separate payment: CA, DC, DE, HI, ID, IN, KS, MI, NC, NY, OK, OR, VA, VT, WI	15 states: AK, AL, AZ, FL, LA, MA, MS, MT, ND, NJ, PA, RI, TN, TX, WA
Lactation consultation— home visit	20 states: CA, CO, CT, DC, IA, ID, IL, IN, MD, ME, MI, MO, NV, NY, OK, OR, UT, VT, WI, WV	22 states: AK, AL, AZ, DE, FL, HI, KS, LA, MA, MS, MT, NC, ND, NJ, PA, RI, SC, TN, TX, VA, WA, WY

FIGURE 7-4 State Medicaid coverage for breastfeeding services.

SOURCE: Ranji et al., 2022. Licensed under CC BY-ND 4.0.

Service	States	Utilization Controls
Electric breast pump	37/42	Prior authorization: 9 states (CA, CO, CT, DE, HI, IA, MA, MO, MS) Quantity limits: 8 states (AZ, CT, KS, LA, MA, MI, PA, WA)
Manual breast pump	32/42	Prior authorization: 3 states (CA, IA, MS) Quantity limits: 8 states (AZ, CT, KS, MA, MI, PA, TX, WA)

FIGURE 7-5 State Medicaid coverage for breast pumps.

SOURCE: Ranji et al., 2022. Licensed under CC BY-ND 4.0.

Innovative Efforts

Some states—Massachusetts, California, and Illinois—are taking further steps to provide the Medicaid extension to mothers, regardless of their immigration status. In addition, other states report that they are considering adding doula services to covered benefits, include initiatives to address mental health services for their beneficiaries, and adopt provider performance measures (Ranji et al., 2022).

Conclusion 7-1: Medicaid expansion has positively influenced breastfeeding rates by increasing access to prenatal education, postpartum lactation support, breast pumps, and maternal health care. The extension of postpartum Medicaid coverage from 60 days to 12 months is promising, as it may help mothers with low incomes sustain breastfeeding beyond the initial few weeks postpartum. By reducing barriers to access critical services, Medicaid expansion and extension efforts not only improve maternal and infant health outcomes but also may promote higher breastfeeding initiation and duration rates among low-income populations.

Recommendation 7-1: The U.S. Centers for Medicare & Medicaid Services should continue to ensure that postpartum Medicaid extension is available to all eligible pregnant and postpartum women up to 12 months after birth, at a minimum; all states should implement this option.

In 2023, the Consolidated Appropriations Act made permanent the state plan option to provide 12 months of postpartum coverage in Medicaid and CHIP. States enacting this option are required to provide 12 months of continuous eligibility for Medicaid and CHIP enrollees under the age of 19, starting January 1, 2024. However, if states choose not to implement the extension, it could lead to coverage gaps for postpartum mothers, with negative effects.

U.S. Military Health System

The U.S. military health system comprises two arms: health care provided by active-duty providers and facilities through the military, such as in VA hospitals, and health care provided by civilian facilities and providers through the military insurance program TRICARE.

Breastfeeding counseling, breast pumps, and other related supplies are provided to TRICARE (2024a) beneficiaries at no cost. TRICARE (2024b) covers breastfeeding counseling (1) during an inpatient maternity stay, follow-up outpatient visit, or well-child visit or (2) as part of up to six separate outpatient sessions when counseling is the only service provided, deemed and billed as a preventive service or provided by an authorized provider. Mothers may select a breast pump and receive a prescription from a TRICARE-authorized physician, physician assistant, nurse practitioner, or nurse midwife; this differs from other insurance providers (TRICARE, 2024a). If they first purchase the pump through an approved provider, they must file reimbursement through a claims system, which pays a set amount of a breast pump (TRICARE, 2024a). In order to receive a hospital-grade pump, the mother must receive a referral from their health care provider and regional contractor (TRICARE, 2024a). The children of parents who are not active-duty service members but are covered by TRICARE must be registered in the Defense Enrollment Eligibility Reporting System during their first 90 days of life. If not registered, families will be denied claims after the child is 91 days old (TRICARE, 2024c).

In April 2024, the Department of Defense enacted the Extra Medical Maternal Health Providers Demonstration project, which requires the Secretary of Defense to provide an annual report on an extra medical maternal health provider demonstration, which the Department has titled the Childbirth and Breastfeeding Support Demonstration (CBSD).

The CBSD began January 1, 2022, and is set to expire on December 31, 2026, with overseas implementation beginning January 1, 2025. (DOD, 2024).

Additional outpatient visits (beyond the six traditionally covered by TRICARE with lactation consultants or additional care provided by doulas or other breastfeeding and lactation support providers may be approved depending on circumstances under the new CBSD. To date, there are no publicly available evaluations of the CBSD.

Indian Health Service

The Indian Health Service (IHS) is an HHS agency responsible for providing federal health care services to Native American individuals. After a determination of eligibility, patients can access any IHS facility and participating provider. In addition, Native American individuals or families may access health care through the tribal health system. Tribes can establish agreements with the IHS to access care in traditional facilities and by non-IHS providers within the tribal health system. In 2020, the IHS reported that it provided health care services to over 2 million members of 567 federally recognized tribes (ODPHP, 2020).

Children’s Health Insurance Plan (CHIP)

Breastfeeding care and supplies also involve pediatric services. Children are covered through health insurance independent of their parents and may sometimes be on completely different plans. In 1997, Congress enacted the States Children’s Health Insurance Act. The plan, now called CHIP, was made permanently through the ACA in 2010 (Racine et al., 2014). In 2020, 48% of all U.S. children ages 0–18 years were covered by Medicaid and CHIP (KFF, 2025b).

The 2017 fourth edition of *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents* specifically recommends breastfeeding and lactation services as required coverage by all plans (Hagan et al., 2017). *Bright Futures* is an AAP publication, supported by HRSA; it includes theory-based, evidence-driven, and systems-oriented principles, strategies, and tools for improving the health and well-being of all children, focusing on culturally appropriate interventions that address current and emerging needs at the family, clinical practice, community, health system, and policy levels. The *Bright Futures* principles acknowledge the value of each child, the importance of family, the connection to community, and that children and youth with special health care needs are children first. The AAP updates its recommendations in *Bright Futures* regularly and in collaboration with HRSA, including the recommendations for periodicity of well visits. Breastfeeding is included in the *Bright Futures* guidelines as integral to preventive health care for children.

Bright Futures recommends covering preventive care such as breastfeeding management, consultation, and support to increase the initiation, exclusivity, and duration of breastfeeding, both in the birth hospital and after discharge in the ambulatory setting (Hagan et al., 2017). It does not, however, specify the type of provider or training necessary to carry out breastfeeding management, consultation, and support. For example, *Bright Futures* assumes the pediatrician can provide the services described. But, as discussed previously, most pediatricians have inadequate education and training to do so (Feldman-Winter et al., 2017).

CONSIDERATIONS RELATED TO UNINSURED POPULATIONS

Among high-income nations, the United States has the highest percentage of individuals without health insurance: 8% of the total population (NASEM, 2024; Tolbert et al., 2024). The rate of uninsurance stands at 20.9% for Hispanic individuals, 10.4% for Black (non-Hispanic) individuals, 6.4% for White (non-Hispanic) individuals, and 6.5% for Asian (non-Hispanic) individuals; the rate for all groups categorized as “other” is 8.4% (NASEM, 2024). The experience of these vulnerable families who are unable to access care may not be reflected in overall trends and performance (Schneider et al., 2021).

In addition, administrative barriers to accessing health insurance and health services may disproportionately deter families who are historically underserved from accessing the care they need (Schneider et al., 2021). For example, mothers or families may experience difficulties navigating insurance eligibility rules and application procedures because of the complexity and high burden of these current processes. High out-of-pocket costs may also serve as a deterrent to receiving lactation support and services, or families may not have access to the information they need to access these critical services (see Figure 7-6).

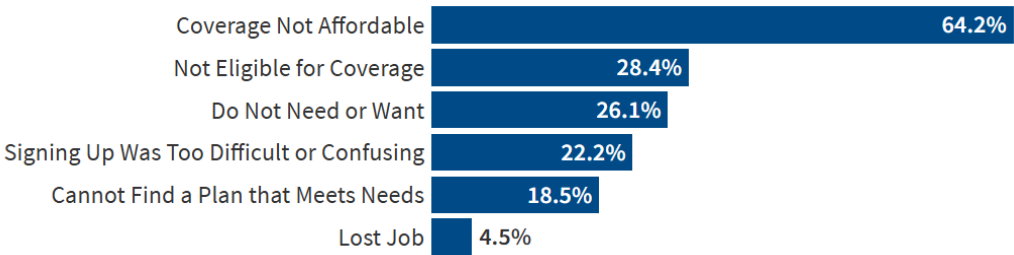


FIGURE 7-6 Reasons for being uninsured among uninsured nonelderly adults, 2022.
SOURCE: Tolbert et al., 2024. Licensed under CC BY-ND 4.0.

In the ten states that have not adopted the Medicaid expansion (Alabama, Florida, Georgia, Kansas, Mississippi, South Carolina, Tennessee, Texas, Wisconsin, and Wyoming), approximately 1.5 million people remain uninsured, or fall in a “coverage gap,” without options for affordable coverage (Tolbert et al., 2024). In addition, many workers may lack access to employer-sponsored health coverage and continue to face constraints related to high costs; many low-income families spend a larger proportion of their income on high premiums and medical expenses, compared with higher-income families. Lawfully present immigrants face 5-year waiting periods to qualify for Medicaid, though state coverage may cover mothers and children (Tolbert et al., 2024). And they may also experience fear that they may be deemed a “public charge” and avoid seeking coverage (Kearney et al., 2024). Therefore, while financial assistance may be available under the ACA or through programs at the state level, many families may continue to be uninsured because of these gaps in Medicaid expansion, employer coverage, or immigration status (Figure 7-7).

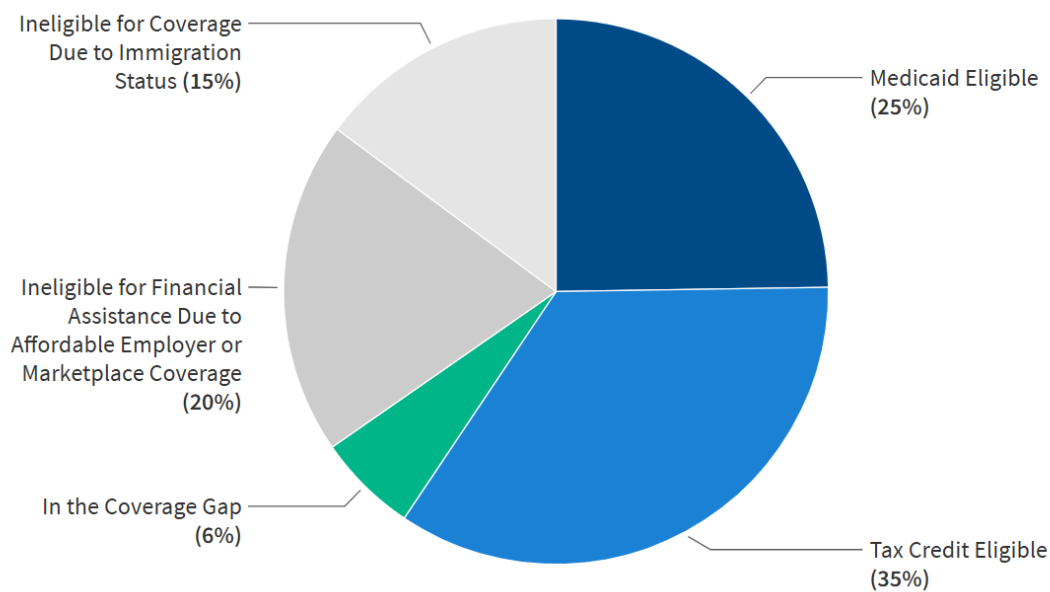


FIGURE 7-7 Eligibility for coverage among the nonelderly uninsured population, 2022.
 SOURCE: Tolbert et al., 2024. Licensed under CC BY-ND 4.0.

Many health systems offer care to uninsured mothers and families by hosting free clinics and sliding scales for payment, and even by waiving payments for certain types of care. Such health systems, often referred to as “safety net” hospitals or health systems, sometimes receive subsidies from the states where they are located for providing such care. In addition, states, including some that have no expanded Medicaid, have led efforts to broaden access to insurance. As of 2024, several states have extended fully state-funded coverage to low-income individuals regardless of immigration status; 12 states and Washington, DC, cover children regardless of status, and five states and Washington, DC, cover some adults regardless of status. Additionally, nearly all states have extended Medicaid postpartum coverage to 12 months, and many are using waivers to ensure continuous eligibility for children and some adults, allowing them to stay enrolled regardless of income changes (Tolbert et al., 2024).

PROMISING APPROACHES FOR PAYERS

In 2022, the USBC (2022) Lactation Support Providers Constellation noted that limitations of covered services, covered providers, and access to equipment and supplies have reduced the impact of the ACA’s lactation coverage. Limitations include a lack of incentive to increase breastfeeding rates at discharge or during the postpartum period, as there is no benefit tied to the provision of this care because it is not paid for separately (USBC, 2022). In addition, with the move to shift the Perinatal Care Core Measure 05a and 05 to an incentive-based system, hospitals are no longer required to monitor their rates of breastfeeding. To address these limitations, the USBC (2022) outlined key recommendations regarding duration, frequency, and site of lactation support services, as well as recommended coverage for equipment and supplies (Box 7-3).

BOX 7-3**Proposed Payer Solutions from the U.S. Breastfeeding Committee****Expand Access to Community-Based Breastfeeding Support**

- Health plan membership model: Health plans can fund memberships in community breastfeeding organizations, similar to fitness club voucher programs.
- Financial support for volunteer organizations: Families receive a voucher covering membership dues or donations, helping sustain organizations offering breastfeeding peer counseling.
- Access to flexible support: Families are not restricted to one organization, ensuring broad access to phone support, telehealth, support groups, and in-person visits.

Infant Nutrition Security Payment Model

- Streamline lactation support provider verification
 - Employ Council for Affordable Quality Healthcare (CAQH) credentialing to register and verify trained lactation support providers
 - Have training organizations assist in the verification of lactation support provider qualifications
 - Centralize verification of lactation support providers to expand access to culturally competent breastfeeding care
- Create a lactation service superbill
 - This would be a standardized billing form based on the time and complexity of the care provided.
 - Lactation support providers could submit a claim directly to health insurers for reimbursement, after they are verified by CAQH.
 - It could increase access to trained lactation support providers and ensure that appropriate referrals are made for complex issues.

SOURCE: USBC, 2022.

The USBC (2022) further notes that existing ACA coverage does not support community-based organizations that provide culturally congruent and responsive peer support. USBC (2022) instead proposes that insurers provide pregnant and parenting families with a membership voucher, which they can award to a local community-based breastfeeding organization to offset operating costs. For billing purposes moving forward, it will also be

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important to better estimate the costs associated with providing a range of services that may be required for optimal care throughout the lactation journey, using sound econometric models (e.g., Arslanian et al., 2022; Carroll et al., 2020).

Conclusion 7-2: Inconsistencies in insurance coverage can hinder mothers from receiving standard, high-quality, and timely health care, which can affect breastfeeding initiation and duration rates. Clear guidelines; uniform enforcement of coverage requirements; and communication among health care providers, insurers, and members of the public could all help to address these variances and ensure that all mothers have equal access to essential lactation support services and supplies.

Recommendation 7-2: The Centers for Medicare & Medicaid Services and the Federal Insurance Office, in collaboration with public and private payers, should create and ensure comprehensive coverage and payment of breastfeeding services and supplies to guarantee equal access to a standard package of services and durable medical equipment.

Health insurance coverage for families is critical, as it ensures that mothers and their children have access to essential medical care. This coverage before and during pregnancy and postpartum can help prevent birth complications, support breastfeeding, and provide essential newborn care, all of which set a strong foundation for lifelong health (NASEM, 2024).

CMS and the Federal Insurance Office (FIO) are key actors for collaborating with public and private payers to identify strategies for improving comprehensive coverage and payment of breastfeeding services and supplies. CMS oversees and regulates some private health insurance, along with Medicaid; within CMS (2024), the Center for Consumer Information and Insurance Oversight oversees many of the reforms in the ACA related to private health insurance. In addition, under Dodd-Frank Wall Street Reform and Consumer Protection Act, the FIO in the U.S. Department of the Treasury (n.d.) has the authority to “monitor all aspects of the insurance sector” (para. 1).

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8

Return to Work and School

Laws and policies at the federal, state, territory, tribal, and local levels play a critical role in shaping environments that support breastfeeding. This chapter begins by examining the timing of return to work, as well as unpaid and paid leave policies, which help ensure that families have the time to recover from childbirth, bond with their infant, and initiate and sustain breastfeeding. Leave policies directly affect a mother's ability to initiate and sustain breastfeeding, and evidence increasingly supports their importance for breastfeeding duration. The chapter then explores workplace accommodations that enable continued breastfeeding upon return to work, including legal requirements for break time and private spaces for milk expression, as well as additional supports offered by employers, schools (e.g., Ashby et al., 2024), and childcare settings. Additionally, state and local laws have been established to support the breastfeeding needs of incarcerated postpartum mothers (e.g., Asiodu et al., 2021). Across these domains, legal protections also address access to breastfeeding support in health care settings, insurance coverage for lactation services, and the right to breastfeed in public spaces.

Despite the breadth of these policies, navigating the complex and fragmented system of lactation support can be challenging for families, particularly in the absence of clear information, consistent enforcement of legal protections, or their comprehensive implementation. This chapter reviews the evidence on these policies and enforcement mechanisms, with special attention to promising strategies, such as paid family leave, for improving breastfeeding outcomes.

TIMING OF RETURN TO WORK

The U.S. civilian labor force has undergone significant changes over the past 7 decades, with women's participation rising substantially. According to the U.S. Bureau of Labor Statistics (BLS, 2024a), women constituted 47% of the workforce in 2023 (79,252,000 out of 168,547,000 total labor force participants), a notable increase from just 30% in 1950 (Glynn, 2019; Schaeffer, 2024). A substantial portion of working women are mothers, with participation rates varying based on their children's ages: data collected in 2023 for the Current Population Survey of the U.S. Department of Labor (DOL, 2023a) show that 68.9% of all mothers with children under age 6 years participated in the labor force, and 53.2% of all mothers with children under age 6 years worked full time. Data from BLS (2024b) show that in 2023, 62.0% of mothers with children under age 1 year were in the labor force, suggesting that a significant proportion of mothers return to work within the first year of their child's life.

Maternal employment postpartum is associated with shorter breastfeeding duration and decreased initiation of breastfeeding. In a recent review of the literature summarizing the association between the length of maternity leave and breastfeeding duration, all 23 articles meeting the authors' inclusion criteria found a positive relationship between increased maternity

leave and duration of breastfeeding in the United States (Wicklund et al., 2024). For example, Chatterji and Frick (2005) examined the relationship between the timing and intensity of returning to work after childbirth and the likelihood of initiating breastfeeding and the number of weeks of breastfeeding. Data from the National Longitudinal Survey of Youth indicate that returning to work within 3 months is associated with a reduction in the probability that the mother will initiate breastfeeding by 16–18%, and among those mothers who initiate breastfeeding, returning to work within 3 months is associated with a reduction in the length of breastfeeding of 4–5 weeks (Chatterji & Frick, 2005).

Similarly, Guendelman et al. (2009) examined the relationship between breastfeeding and maternity leave before and after delivery among working mothers in California. Drawing from a case-control study of preterm birth and low birth weight, the study recorded whether 770 full-time working mothers established breastfeeding in the first month, and for those that established breastfeeding, the duration. The authors used multivariate regression models weighted for probability of sampling to calculate odds ratios for breastfeeding establishment and hazards ratios for breastfeeding cessation. Maternity leaves of less than or equal to 6 weeks or 6–12 weeks after delivery were associated, respectively, with fourfold and twofold higher odds of failure to establish breastfeeding and an increased probability of cessation after successful establishment, relative to women not returning to work, after adjusting for covariates. The relationship between short postpartum leave (i.e., quicker return to work or school) on breastfeeding cessation was stronger among nonmanagers, women with inflexible jobs, and with high psychosocial distress (Guendelman et al., 2009).

Mirkovic et al. (2014) assessed the relationship between prenatal plans for maternity leave duration and return to full-time/part-time status and plans for exclusive breastfeeding. Their study included 2,348 prenatally employed women from the Infant Feeding Practices Study II (2005–2007) who planned to return to work in the first year postpartum. Bivariate analysis and logistic regression were used to describe the association of maternity leave duration and return status with plans for infant feeding. Overall, 59.5% of mothers planned to exclusively breastfeed in the first few weeks. Mothers planning to return to work within 6 weeks had 0.60 times (95% confidence interval [CI]: 0.46–0.77 times) and mothers planning to return between 7 and 12 weeks had 0.72 times (95% CI: 0.56–0.92 times) the odds of planning to exclusively breastfeed compared with mothers who were planning to return after 12 weeks (Mirkovic et al., 2014). Prenatal plans to return full-time (≥ 30 hours/week, vs. part-time) were also associated with lower odds of planning to exclusively breastfeed (adjusted odds ratio = 0.61; 95% CI: 0.51–0.77). Mirkovic et al. (2014) also found that mothers who planned to return to work within 12 weeks postpartum were less likely to start breastfeeding and more likely to stop breastfeeding earlier than those who returned later or not at all.

While not all the included studies in Wicklund et al. (2024) adjusted for potential confounders such as race, education, or income, the consistent patterns across studies suggest that policies that support parental leave following the birth of a child have the potential to increase breastfeeding prevalence. This finding reinforces work by Berger et al. (2005), who found that early return to work by mothers (within 12 weeks of giving birth) is associated with reductions in breastfeeding as well as regular checkups and immunizations. These results are corroborated with survey responses, which indicate that a leading reason mothers stop breastfeeding is that they need to return to work (Kirkland & Fein, 2003; Thulier & Mercer, 2009).

However, the relationship between breastfeeding duration and occupation type may vary. Kimbro (2006), using data from the Fragile Families and Child Wellbeing Study (a sample of mostly low-income, unmarried U.S. mothers) conducted a logistic regression analysis to determine the relationship between the expectation of work and breastfeeding initiation, and discrete-time logit models to examine breastfeeding duration, the timing of the return to work, and occupation type.¹ Kimbro (2006) found that expecting to work in the year after birth did not impact breastfeeding initiation. The timing of weaning or ceasing breastfeeding and return to work are closely linked, however. Mothers with administrative and manual occupations are more likely to cease breastfeeding than stay-at-home moms, with 34% and 35% higher odds, respectively. The author explained that this relationship could indicate a lack of flexibility in their working environment. Mothers with professional jobs and service occupations did not differ from stay-at-home moms in terms of breastfeeding duration. Kimbro (2006) suggested that this finding could reflect the fact that mothers with these types of jobs have flexibility in scheduling, so are better able to incorporate breastfeeding into their daily routines. Overall, Kimbro's (2006) research suggests that low-income women have difficulty combining work and breastfeeding: the results of the discrete-time logit models indicate that women are ceasing breastfeeding or weaning right before or right after returning to work (Kimbro, 2006).

Moreover, studies have also found variation by race and ethnicity. Spencer and Grassley (2013) and Johnson et al. (2015) found that Black women are more likely to return to work earlier and work in environments that are not conducive to breastfeeding (Johnson et al., 2015; Spencer & Grassley, 2013).

In sum, earlier return to work is associated with shorter breastfeeding duration, plausibly linked to the challenging situations women face in balancing work with the demands of pregnancy and postpartum care (Arena Jr. et al., 2023; Grandey et al., 2020; Shockley et al., 2017). Global literature also aligns with these findings (e.g., Pérez-Escamilla et al., 2023). These impacts are likely felt most by workers with less flexible work employment, low-income workers, and Black and Hispanic workers (Beauregard et al., 2019). For parents returning to work, a lack of supportive policies and environments can lead to early cessation of breastfeeding (Kozhimannil et al., 2016). Consistent with this, the American Academy of Pediatrics, World Health Organization, International Labor Organization, and Centers for Disease Control and Prevention, among others, include policies such as guaranteed adequate paid parental leave in their calls for societal and workplace policies that support breastfeeding parents.

SUPPORTING BREASTFEEDING THROUGH LEAVE POLICIES

As described above, early return to work is negatively associated with breastfeeding initiation and duration. The federal government, states, and employers have supported a variety of leave policies to assist working mothers in delaying their return to work (see Box 7-1). However, the United States is the only high-income country in the world without a national paid family leave entitlement.

BOX 8-1

¹ The author used census codes for each job to create four job categories: Professional, Administrative, Manual, and Service, with the omitted category "Stay-at-Home Mom."

Leave Policies and Supports

- **Unpaid leave:** The Family and Medical Leave Act provides up to 12 weeks of *unpaid*, job-protected leave for eligible employees. It covers only about 60% of private-sector workers, excluding many part-time and new employees. Eligibility requires 12 months of employment and 1,250 hours worked in the past year (Department of Labor [DOL], 2023b). Unpaid leave disproportionately affects low-income workers and contributes to health variances (Kling et al., 2024; Nandi et al., 2018).
- **Paid family leave:** As of 2025, thirteen states and the District of Columbia have enacted mandatory paid family leave systems; ten states have voluntary systems that provide paid family leave through private insurance. These policies are associated with longer breastfeeding duration, improved maternal mental health, and reduced infant hospitalizations. For example, California's program doubled maternity leave use from 3 to 6 weeks on average (Bipartisan Policy Center [BPC], 2024; Goodman, 2022; Rossin-Slater et al., 2013).
- **Paid maternity leave:** As of 2025, United States has no federal requirement for paid maternity leave. On average, new mothers take 10 weeks, with only 4 weeks paid through sick or personal time (BPC, 2022; Nandi et al., 2018).
- **Paid parental leave:** Paid parental leave in the United States is not guaranteed at the federal level. As of 2025, 13 states and the District of Columbia have enacted mandatory paid family leave systems, while an additional ten states have voluntary systems, providing varying levels of coverage and benefits. Federal employees are now entitled to up to 12 weeks of paid parental leave under the Federal Employee Paid Leave Act of 2019, but many workers in the private sector, especially those at smaller companies or in part-time positions, remain without access to paid parental leave (BPC, 2025; DOL, 2023b; Livingston & Thomas, 2019; OPM, n.d.)

SOURCES: BPC, 2021; DOL, 2023; Goodman, 2022; Kling et al., 2024; Livingston & Thomas, 2019; Nandi et al., 2018; OPM, n.d., Rossin-Slater et al., 2013.

Unpaid and Paid Family and Medical Leave

Current federal policy provides eligible employees with up to 12 weeks of unpaid, job-protected leave for the care of a newborn child through the Family and Medical Leave Act (FMLA) (enacted in 1993). To be eligible for FMLA, employees must have worked for their employer for at least 12 months, and for at least 1,250 hours in the prior 12 months. They must also work in a location where their company employs 50 or more workers within 75 miles. Because of these criteria, many new mothers do not qualify. According to a 2018 survey commissioned by the DOL (Brown et al., 2020), FMLA covered only 56% of employees. Moreover, eligibility rates vary by education (~60% for workers with at least some college vs. 50% for those whose highest level of education is a high school diploma and 42% for those who have not graduated from high school), family structure (63% for workers in dual-parent families vs. 43% for those in single-parent families), and ethnicity (57% for non-Hispanic workers vs. 52% for Hispanic workers) (Brown et al., 2020).

Even among the subset of mothers eligible for unpaid leave under the FMLA, many cannot afford the financial implications of taking time away from work (Brown et al., 2020). Unpaid leave is often most feasible for high-income or two-parent families (Han et al., 2009). According to the results of a DOL (Brown et al., 2020) survey in 2018, 15.3% of the workforce

takes leave for an FMLA-qualifying reason annually, and 6.9% of workers reported needing FMLA-type leave but not taking it, with 66% of those citing inability to afford unpaid leave as the primary reason.

Because the FMLA does not provide for wage replacement, paid leave is generally available only to those whose employers provide coverage voluntarily (Congressional Budget Office, 2021). Only about 19% of all U.S. workers have access to such leave through their employer (Pac et al. 2023). Access to paid family leave in the United States shows significant variances across wage levels, with only 6% of private industry workers in the lowest decile of the wage distribution having access, compared with 43% in the highest 10% (BLS, 2022). Overall, these statistics confirm that higher-wage workers are much more likely to have access to employer-provided paid family and medical leave than their lower-earning counterparts, consistent with previous research findings (Bartel et al., 2019; Gault et al., 2014).

Since the 1978 Pregnancy Discrimination Act, which mandated that states with existing temporary disability insurance (TDI) programs allow women to take leave to prepare for and recover from childbirth, employed residents in a few states (California, Hawaii, New Jersey, New York, and Rhode Island) have been able to take approximately 6 weeks of paid leave through the TDI program. Many of these same states (and a few others) have also recently enacted laws that entitle new parents to paid family leave. For example, California has provided eligible workers with 55% of their normal earnings (up to a maximum benefit) for up to 12 weeks postpartum; the state recently extended this to 14 weeks. California was the first state to enact a paid family leave law in 2004. As a result, much of the evidence on the impacts of paid family leave is based on analyses of California. As of January 2025, comprehensive paid family and medical leave programs have been enacted in 13 states and the District of Columbia, with 10 of these programs currently providing benefits (see BPC, 2024).

Evidence on Leave-Taking

Studies suggest that adopting both unpaid and paid job-protected leave policies and implementing and extending programs increase leave-taking among new parents with follow-on impacts for breastfeeding (Rossin-Slater, 2017). Studies on the impacts of family leave in the United States have typically investigated the impacts of the (unpaid) FMLA by observing changes in outcomes pre- and postenactment of the law in states that had existing leave policies (and were, therefore, unaffected) and comparing those outcomes with changes in states that did not have preexisting leave policies. Using this approach, Waldfogel (1999) found that the introduction of FMLA increased leave-taking by about 23% between the years of 1992 and 1995. Han et al. (2009) also found that the implementation of FMLA in 1993 and subsequent state-level maternity leave policies increased maternal leave-taking by 13% during the birth month, 16% during the month following birth, and a marginally significant 20% during the second month after birth (see also Rossin-Slater, 2011).

More recent information suggests that the impact of paid family leave policies has been even more substantial on leave-taking. Focusing on the effects of paid leave, there is consistent evidence that the enactment of California's paid family leave in 2004 had large positive impacts on mothers' leave-taking (e.g., Bailey et al., 2025; Bartel et al., 2018; Baum & Ruhm, 2016; Rossin-Slater et al., 2013). Rossin-Slater et al. (2013) found that California's policy doubled maternity leave usage among new mothers and had particularly large impacts on less-advantaged groups, such as mothers who are unmarried or have low incomes. Bailey et al. (2025), Baum and Ruhm (2016), and Bartel et al. (2018) also found that California's policy increased leave-taking

among fathers. Additionally, studies of other countries' policies demonstrate that paid leave increases mothers' leave-taking (e.g., Baker & Milligan, 2008; Carneiro et al., 2015; Lalive & Zweimüller, 2009).

In sum, data from numerous studies suggest that paid leave programs provide more access and increases in leave-taking compared with unpaid leave policies such as the FMLA. In addition, Wang et al. (2024) estimated that a national paid family leave program in the United States may yield substantial net social benefits, ranging from \$7,275 to \$29,406 per \$1,000 invested.

Evidence of Paid Family Leave's Impacts on Breastfeeding Outcomes

Several causal studies find that paid leave increases the duration of breastfeeding. Investigating the impacts of the introduction of paid family leave in California in 2004, Pac et al. (2023) found that the likelihood of breastfeeding exclusively for at least 6 months increased by at least 15%. Analysis of data from the 1993–1994 and 2005–2006 Infant Feeding Practices Study by Huang and Yang (2015) also showed that implementation of California's paid family leave was associated with increased breastfeeding rates by 10–20 percentage points, 3, 6, and 9 months after the child's birth. Examining the effects of both California and New Jersey's paid family leave programs, Hamad et al. (2019) found that paid family leave was associated with an increase in exclusive breastfeeding at 6 months, particularly among advantaged mothers. In earlier findings from Canada, Baker and Milligan (2008) found that a 25-week expansion in paid maternal leave (from 25 to 50 weeks) was associated with an extended duration of any and exclusive breastfeeding.² Taken together, these results suggest that extending paid family leave to families in states that do not currently provide this type of coverage would have a positive impact on breastfeeding duration. In addition, based on the findings of Baker and Mulligan (2008) in Canada, states with 12 weeks of paid leave might be able to increase duration by increasing the length of paid leave.

Most studies examining the effect of paid leave policies on breastfeeding outcomes are unable to consider heterogeneous effects because they are based on small samples. However, the Pac et al. (2023) analysis of California's 2004 paid family leave is based on a large representative sample of over 314,000 children born between 2000 and 2013 (drawn from the restricted use versions of the 2003–2014 National Immunization Survey). They concluded that the impact of paid family leave on breastfeeding duration is generally larger among historically underserved populations (Pac et al., 2023). This is consistent with the evidence described above indicating that paid family has bigger effects on disadvantaged mothers' leave-taking.

Taken together, these findings show that paid family leave is an important vehicle to reduce differences in breastfeeding rates. The evidence above provides compelling evidence of the effect of paid family leave policies on increasing breastfeeding duration, particularly among disadvantaged populations.

² The authors did not find a significant impact on breastfeeding initiation. This result is not unexpected as paid family leave is targeted at breastfeeding duration and exclusivity, which are most affected by return to work (Baker & Milligan, 2008).

Evidence on Outcomes Related to Child Health and Well-Being

There is evidence that both paid and unpaid family leave lead to improvements in infant health. Using variation in the timing of unpaid FMLA introduction, together with the timing of similar leave policies that were adopted in some states before the FMLA and making use of variation in mothers' access to leave across counties based on counties' share of firms with at least 50 employees, Rossin (2011) found that the implementation of the FMLA led to a 10% reduction in the infant mortality rate. Importantly, the effects of federal job protected leave were only present for children of highly educated mothers and/or married mothers. These groups were most likely to be eligible for FMLA and able to afford to take time away from work (Rossin, 2011).

Evidence to date also suggests that paid parental leave improves a number of infant health measures, including birth weight, infant mortality, hospitalizations for vaccine-related illnesses, regular checkups and immunizations, and asthma (e.g., Bullinger, 2019; Chen, 2023; Choudhury & Polacheck, 2021; Montoya-Williams et al., 2020; Pac et al., 2023; Pihl & Basso 2019; Ruhm, 2000; Stearns, 2015). In contrast to Rossin's (2011) findings for unpaid leave, most studies that consider heterogeneous effects have shown that the impacts of paid leave on infant health are largest among historically disadvantaged groups.

The handful of studies that examine longer-term effects of paid and unpaid leave on children also point towards positive impacts. For example, Lichtman-Sadot and Pillay Bell (2017) found that the introduction of California's paid family leave program was associated with later childhood reductions in obesity, attention deficit hyperactivity disorder, and hearing-related problems. A striking new working paper by Flores et al. (2023) discusses the long-term impacts of job-protected family leave on mothers and children using variation in the timing of 18 states' unpaid job-protected leave policies. Focusing on the 2-decade period before the implementation of the FMLA, Flores et al. (2023) compared differences in outcomes between children born before and after the implementation of job-protected leave to the difference in outcomes for children born in states with no such policies. They found that children born in states and in years where job-protected leave was available completed 0.23 more years of education, were 4.1 percentage points less likely to drop out of high school, and had average hourly wages that were almost \$4.00 higher in adulthood. The positive effects of the policies were concentrated on children born to mothers who had less education (Flores et al., 2023). Similarly, Carneiro et al. (2015) found that a change in maternity leave entitlements in Norway from 12 weeks of unpaid leave to 4 months of paid leave and 12 months of unpaid leave, led to a 2 percentage point decline in the high school dropout rate and a 5 percent increase in affected children's wages.

It is important to note that most of these studies examined outcomes resulting from state or federal adoption of family leave programs. While there is evidence from the United States that short paid and unpaid leave improves children's outcomes, studies that examine the impacts of extensions to existing leave policies in countries with longer baseline leaves have found little evidence of improvements in child well-being (Rossin-Slater, 2017). For example, Baker and Milligan (2008, 2010, 2015) found that while an extension of paid maternity leave in Canada from 6 to 12 months increased maternal time at home and breastfeeding rates, it had much more limited impacts on measures of children's health and cognitive and behavioral development in early childhood. Studies of leave extensions in Sweden, Denmark, Austria, Norway, and Germany demonstrate similarly weak evidence of large improvements in measures of older children's academic success (Dahl et al., 2016; Danzer & Lavy, 2018; Dustmann & Schonberg, 2012; Liu & Skans, 2009; Rasmussen, 2010). These results suggest that, for the outcomes that

have been analyzed to date, the benefits to children of subsidizing family leave that lasts more than 6–12 months are likely to be limited. However, existing leave policies in the United States currently fall far short of this window.

Evidence on Maternal Outcomes

Several studies have also examined the impacts of family leave policies on maternal health and labor market outcomes. Causal evidence on health impacts among U.S. mothers is limited, and additional research is warranted, but two studies by Chatterji and Markowitz (2005, 2012) have shown that mothers living in states with more generous family leave policies take longer maternal leaves and have fewer depressive symptoms in the months after childbirth. Similarly, Bullinger (2019) found suggestive evidence that California’s adoption of paid family leave led to improvements in mothers’ mental health.

Bütikofer et al. (2021) provided some of the most convincing evidence on maternal health effects to date. Using large-scale registry data on a wide variety of health indicators, the authors compared outcomes for mothers who gave birth in the months right before and right after Norway adopted paid maternity leave (in 1977) (Bütikofer et al., 2021). They found strong evidence that paid maternity leave improves many measures of maternal health and health behaviors, including body mass index, blood pressure, chronic pain, mental health, exercise, and smoking. They also found that women who had their first child after paid leave was adopted experienced fewer health problems during their next pregnancy (Bütikofer et al., 2021).

As with the evidence on later childhood outcomes, studies of policies that increased the length of paid parental leave in Canada, Denmark, and Germany have found little evidence of improvements in maternal physical or mental health (e.g., Baker & Milligan, 2008; Beuchert et al., 2016; Guertzgen & Hank, 2018).

Conclusion 8-1: There is consistent causal evidence that state mandates providing 12 weeks of paid family leave have positive effects on the duration of breastfeeding.

Therefore, 12 weeks should be the minimum threshold for a federal paid family leave policy. Moreover, compelling evidence from Canada suggests that providing for longer periods of paid family leave will generate even bigger increases on breastfeeding duration.

Conclusion 8-2: Consistent with the scientific consensus on the health benefits of exclusive breastfeeding for the first 6 months postpartum, several studies show that paid family leave policies of up to 6 months in other high-income countries confer health benefits to mothers and infants.

Recommendation 8-1: Congress should enact national paid family and medical leave for all postpartum mothers. In the absence of a national plan, states and employers should enact this coverage.

FEDERAL RETURN TO WORK PROTECTIONS FOR BREASTFEEDING

This section reviews federal protections for breastfeeding in the workplace, including amendments to the Fair Labor Standards Act (FLSA) through the Break Time for Nursing Mothers Act, and the PUMP Act. Evidence of the impacts of these policies is focused on breastfeeding initiation, duration, and exclusivity outcomes.

Break Time for Nursing Mothers Act

Lack of adequate break time may be an obstacle to continued breastfeeding, particularly for hourly workers or those in inflexible work environments (Izumi et al., 2024). The Break Time for Nursing Mothers Act, which was signed in 2010 as part of the ACA (DOL, 2023b), amended the FLSA to require employers to provide (1) reasonable break time for employees to express human milk for up to 1 year after the child's birth and (2) a private, nonbathroom space for pumping at work. The lactation space must be shielded from view and free from intrusion by others. Of note, however, employers with fewer than 50 employees may be exempt from the break time requirement if they can demonstrate that compliance with the provision would impose an undue hardship (DOL, 2023b).

One study found that workplace requirements related to the Break Time for Nursing Mothers Act increased the likelihood of exclusive breastfeeding at 6 months for mothers who gave birth in 2011 and 2012, but only 40% of the study population reported access to time and space accommodations (Kapinos et al., 2017). This highlights the ongoing need for comprehensive support for breastfeeding mothers in the workplace, particularly for those from historically underserved communities.

With respect to federal enforcement, the DOL Wage and Hour Division is responsible for enforcing the break time for nursing mothers' provision under the FLSA. Employers who fail to provide reasonable break time and a private space for breastfeeding employees can face civil penalties for each violation and may be required to pay back wages if the violation results in unpaid work time. The Equal Employment Opportunity Commission enforces laws against pregnancy discrimination, which can include discrimination against breastfeeding mothers. The Pregnancy Discrimination Act and Title VII of the Civil Rights Act protect against such discrimination. Employers who discriminate against breastfeeding employees may be required to pay compensatory and punitive damages.

PUMP for Nursing Mothers Act

The federal Providing Urgent Maternal Protections for Nursing Mothers Act (PUMP Act), which was signed into law in 2022, updates the Break Time for Nursing Mothers Act by including millions more employees, such as agricultural workers, nurses, teachers, truck and taxi drivers, home care workers, and managers (Providing Urgent Maternal Protections [PUMP] for Nursing Mothers Act, 2022).

The PUMP Act does not require employees to be paid during pump breaks, but if the employee is not completely relieved from their work duties, the time must be considered hours worked. The act makes it possible for workers to file a lawsuit to seek monetary remedies if their employer fails to comply (see Box 8-2).

BOX 8-2 **Impacts of the PUMP Act**

Expanded Coverage

- **Broader Coverage for Employees:** The Providing Urgent Maternal Protections for Nursing Mothers Act (PUMP Act) expands protections to cover all employees, including those who were previously excluded under the Fair Labor Standards Act, such as salaried employees, agricultural workers, and certain other categories. This ensures that more working mothers have the right to break time and a private space to express milk.

Break Time for Nursing Mothers

- **Reasonable Break Time:** Employers are required to provide reasonable break time for an employee to express human milk each time such employee has need to express milk for 1 year after the child's birth.
- **Private Space:** Employers must provide a place, other than a bathroom, that is shielded from view and free from intrusion from coworkers and the public, which may be used by an employee to express human milk. This space must be functional as a space for expressing breastmilk.

Compensation

- **Paid break time if still on duty:** If the employee is not completely relieved from duty during the break, the break time must be compensated as work time. This ensures that employees do not lose pay while taking necessary breaks to express milk while still working.

Employer Exemptions and Size Considerations

- **Small business exemption:** Employers with fewer than 50 employees may be exempt from the break time requirement if they can demonstrate that compliance with the provision would impose an undue hardship. However, this exemption is intended to be applied narrowly.

The PUMP Act covers almost all employees for a year after a child's birth except for airline pilots and flight attendants. Members of other transportation industries (e.g., train crews, rail carrier employees, motorcoach employees) will not receive the protections from the PUMP Act until December 2025. In railway industries, employers will not be required to make accommodations if they require a significant expense (e.g., removing seats from the carriers). Airline flight crewmembers and others in the transportation industry may be able to receive break time and space as a reasonable accommodation under the Pregnant Workers Fairness Act (PWFA), which was signed into law in 2022 and applies to employers with 15 or more employees. This law is for employees who have limitations related to pregnancy or pregnancy-related conditions, such as childbirth and lactation/breastfeeding.

STATE-LEVEL RETURN TO WORK PROTECTIONS FOR BREASTFEEDING

At the state level, three categories of workplace laws impact breastfeeding or pumping in the workplace: break time and space, reasonable accommodation, and antidiscrimination laws. The federal PUMP Act provides the minimum requirements related to break time and space and reasonable accommodation, but some states provide additional protections in these areas. Break

time and space laws require employers to allow employees to express milk during existing breaks at work and/or require employers to provide additional break time for that purpose. Laws in this category may also require employers to provide a space for expressing milk. Some laws include additional requirements, such as requiring that the space have a sink or be located near the lactating employee's workstation. Reasonable accommodations require employers to adjust how, when, or where the employee works or to make other changes that accommodate the employee's lactation-related needs. It may include break time space for expressing milk, the ability to breastfeed at work, temporary transfers to light duty or less-hazardous positions, or other modifications that accommodate the employee's individual needs.

Antidiscrimination laws prohibit employers from discriminating against an employee because of breastfeeding or lactation—for example by firing, demoting, refusing to hire, harassing, or taking other adverse action because the employee is breastfeeding. Some antidiscrimination laws also require employers to treat employees who are affected by conditions related to pregnancy and childbirth the same as other employees who are similar in their ability to work.

In some cases, state laws provide additional protections beyond federal requirements for pumping in the workplace. In these instances, state laws remain in effect and are not changed by federal policies. This means that when it comes to workplace lactation or breastfeeding policies, employers are required to follow whichever requirement—federal or state policies—is stricter. About 20 states and the District of Columbia have laws related to breastfeeding in the workplace; many have policies with stronger protections than federal policies (National Conference of State Legislatures [NCSL], 2021). For example, California, Indiana, Oregon, New York, and Vermont all provide lactation protection for more than 1 year. In New York, employers must provide nursing employees with 30 minutes of paid break time to express milk as needed (New York State Senate, 2024).

California has some of the most comprehensive laws for lactating employees in the workplace. However, its state laws are not uniformly stricter than the PWFA and PUMP Act. California law is stricter in that it provides breaks and a place to pump near work areas for all employees; includes exempt employees with no time limit; specifies a penalty of \$100 for each violation; and applies to companies with five or more employees (whereas the federal laws apply to companies with at least 50 employees). In these instances, state law is more favorable to the employee and must be followed. On the other hand, California law provides that an employer is not required to provide lactation break time if doing so would seriously disrupt the operations of the employer. In this instance, federal law is more favorable to the employee and must be followed.

Many states have their own labor departments or agencies that enforce state-specific breastfeeding laws. Some states, such as New York, Illinois, and Minnesota, have human rights divisions or departments that handle complaints related to discrimination, including discrimination against breastfeeding mothers. These agencies can investigate complaints and ensure compliance with state regulations. For example, in California the Department of Industrial Relations, through its Division of Labor Standards Enforcement (DLSE), is responsible for enforcing labor laws, including those related to breastfeeding accommodations. Employers who violate California's lactation accommodation laws can face civic penalties of up to \$100 per violation. Also in California, the Department of Fair Employment and Housing (DFEH) enforces laws against discrimination, including pregnancy and breastfeeding discrimination. Employees

can file complaints with DLSE or DFEH if they believe their rights have been violated or if they face discrimination related to breastfeeding.

EMPLOYER-LED RETURN TO WORK SUPPORTS FOR BREASTFEEDING

Employers can play a role in supporting working mothers as they return to work and continue breastfeeding and pumping (Litwan et al., 2021). Qualitative and survey literature suggests that employers can find value in supporting breastfeeding employees in the workplace (see Box 8-3).

BOX 8-3

Return on Investment for Supporting Breastfeeding

Bartel et al. (2021) surveyed small businesses—employers with 10–99 workers—in the state of New York, where a paid family leave policy was implemented in 2018, and in Pennsylvania, where there was no such program. The authors surveyed businesses in 2016 and 2017, 2 years before the policy went into effect and then again in 2018 and 2019 after it went into effect. Over this 4-year period, Bartel et al. (2021) found that, compared with employers in Pennsylvania, employers in New York experienced an increase in average ratings of employee commitment and cooperation, as well as an increase in their rating of the ease of handling lengthy worker absences. These impacts appeared to be driven by employers who had at least one employee use leave (Bartel et al., 2021).

Companies that support breastfeeding employees may report increased productivity and improved morale among their workers. For instance, the Cigna Corporation implemented a lactation support program that resulted in an annual savings of \$240,000 in health care expenses, 62% fewer prescriptions, and \$60,000 savings in reduced absenteeism rates (Haviland et al., 2015; Office on Women's Health [OWH], 2025). Moreover, Mutual of Omaha found that health care claims for newborns averaged \$1,269 for each mother in the lactation support program compared with \$3,415 for each mother not in the program (Harvard Law School Mississippi Delta Project, 2016).

Moreover, qualitative literature shows that supporting breastfeeding employees contributes to the overall success of the business, resulting in more satisfied and loyal staff members. A survey study by McCardel and Padilla (2020) assessed workplace breastfeeding support among working mothers and found that 78.8% of participants reported access to private spaces for breastfeeding, while 65.4% reported access to break times for breastfeeding. However, fewer had access to breast pumps, lactation consultants, and support groups, indicating areas for potential improvement (McCardel & Padilla, 2020).

Furthermore, businesses that prioritize breastfeeding support often enhance their public image, attracting top talent and demonstrating their commitment to family-friendly policies (OWH, n.d.a). For example, a 2013 evaluation of The Business Case for Breastfeeding Implementation in Virginia found that 14 out of 17 engaged businesses significantly increased lactation support programs, with improvements seen in written policies and physical/social environment changes (Garvin et al., 2013). Importantly, these programs were maintained 8 months after the intervention ended, suggesting long-term benefits for both employees and employers.

SOURCE: Bartel et al., 2021.

The sections that follow describe the emerging literature related to employer-led supports for breastfeeding. While growing, this literature is small and largely comprises qualitative studies with samples of working mothers in professional jobs with middle to high incomes.

It is important to consider both the supports provided to women during pregnancy itself, as well as the supports and challenges that exist when working women reenter the workforce. For example, providing support to workers who are pregnant can come in the form of organizational leaders helping women navigating the human resources infrastructure within their organization (Chawla et al., 2024). This can include sharing knowledge surrounding leave (e.g., combining leave available via FMLA with additional vacation or sick leave time); information about policies and how to utilize them and/or file for them correctly; and providing early information surrounding how to pump when women return to work (Chawla et al., 2024). Signaling the importance of support, Spitzmueller et al. (2016) found that women who perceived that their organizations were going to be supportive of their breastfeeding journey postpartum (e.g., “In your opinion, how supportive of breastfeeding is your place of employment?” [p. 699]) were more likely to report positive breastfeeding goal intentions before the baby was born (e.g., “How old do you think your baby will be when you completely stop breastfeeding?” [p. 698]). Critically, these intentions contributed to a significant decrease in the cessation of breastfeeding after returning to work, such that these women with stronger intentions to breastfeed—as a function of perceived support from their job—were less likely to stop breastfeeding within the first 12 months of their child’s life (Spitzmueller et al., 2016). Thus, having knowledge that one’s organization will support breastfeeding prior to giving birth can be one way for organizations to promote the initiation of breastfeeding—though, as reviewed by Vilar-Compte et al. (2021) and Litwan et al. (2021), different sources of support may have mixed effects (or may operate indirectly, as found by Spitzmueller et al. [2016]).

Indeed, as noted earlier, during this “fifth trimester” (the months in which mothers return to the workforce, often encompassing the first 3 months [Brody, 2018]), mothers who are employed and transitioning back to the workforce after having a child may feel as though they are violating “ideal worker norms” and “ideal mother norms,” not being fully available 24/7 to either their work role nor their motherhood role (Ladge & Greenberg, 2015; Little & Masterson et al., 2021). It is likely for these reasons that organizational scholars have advocated for more flexible return to work practices (Chawla et al., 2024; Little & Masterson, 2021), a benefit of which can be ensuring that women have time not only to heal from pregnancy and childbirth beyond the standard 12 weeks offered by FMLA programs, but also have more sufficient time to dedicate to breastfeeding and caregiving without the added stress of work (Gabriel et al., 2020).

Upon return to work, several job characteristics and/or experiences may contribute to women’s ability to continue breastfeeding and/or pumping (e.g., Humphrey et al., 2007). Following research conducted by Spitzmueller et al. (2018) examining the intersection of breastfeeding and work, three classifications of factors may affect breastfeeding continuation once women return to the workplace: (1) job autonomy/schedule flexibility; (2) physical (i.e., hazardous) work conditions; and (3) job-related supports (i.e., formal policies and/or practices, interpersonal supports); for similar themes, see also Thomas et al. (2022).

Job Autonomy

Job autonomy focuses on the extent to which employees “are able to make independent decisions about how to do their work and what tasks and methods to use” (Spitzmueller et al., 2018, p. 460; see also Parker et al., 2001). Particularly post-COVID-19 pandemic, another aspect

of having job autonomy relates to where the work is done, as well as having flexible work schedules that can aid in the juggling of work and family demands (Shockley et al., 2021). In any job—regardless of whether one is breastfeeding and/or pumping or not—job autonomy is a core predictor of employee well-being and performance (Hackman & Lawler, 1971; Parker et al., 2017). Particularly when it comes to breastfeeding and/or pumping at work, research has demonstrated the importance of having flexibility in one’s schedule and/or location where they work, as this can correlate with the ease with which women are able to take lactation breaks or easily breastfeed their child (i.e., during work-from-home arrangements or being able to see a child who may be in a nearby daycare facility [Chawla et al., 2024; Litwan et al., 2021; Thomas et al., 2022; Vilar-Compte et al., 2021]).

Flexible work arrangements, such as telecommuting or flexible schedules, can make it easier for parents to balance work and breastfeeding, but these benefits are not applicable across all sectors or job types. Murtagh and Moulton (2011) found that mothers with flexible work arrangements were more likely to continue breastfeeding. Workplace education programs that inform both employees and employers about breastfeeding benefits and support needs can also create more supportive environments (Dinour & Szaro, 2017).

More specifically, increased levels of job autonomy can allow for individuals to more easily find time to breastfeed or pump throughout the workday (Thomas et al., 2022). Indeed, breastfeeding continuation may be more likely when employees can work from home and more easily connect with their baby, and when employees have less-rigid schedules and can easily build in pumping breaks (Jacknowitz, 2008; Spitzmueller et al., 2018; Vilar-Compte et al., 2021). Such sentiments are reflected in emerging research highlighting that during the lockdowns associated with the COVID-19 pandemic, women reported some “silver linings,” in the sense that remote work afforded easier facilitation of breastfeeding and bonding with their child (e.g., Devi et al., 2024).

However, remote work and teleworking benefits are not equally distributed across all sectors or job types, with many essential workers unable to access remote work options (Dey et al., 2020; NCSL, 2021). Dingel and Neiman (2020), using surveys that describe the typical experience of U.S. workers in nearly 1,000 occupations, classified each occupation as able or unable to be done entirely from home; they found that only 37% of workers had jobs that could be performed entirely from home, underscoring the variances in access to flexible work arrangements (DOL, 2022).

Educational attainment significantly influences access to telework opportunities for mothers. The 2023 American Time Use Survey by the BLS (2024b) indicates that mothers with higher levels of education are more likely to engage in telework than those with lower educational attainment; 52% of those with a bachelor’s degree or higher performed some work at home on days they worked, while only 22% of those with a high school diploma and no college performed some work at home on days they worked. This lack of remote work access can exacerbate existing variances, as lower-income workers are more likely to be employed in essential roles or on an ad hoc basis and cannot work remotely (Friedland & Balkin, 2023; Gaitens et al., 2021); it also highlights the need for targeted interventions to support breastfeeding in these sectors.

Moreover, Spitzmueller et al. (2018) found that job autonomy—conceptualized as an occupational characteristic (i.e., having a job with generally more or less autonomy as classified by O*NET [Occupational Information Network])—was positively related to breastfeeding intentions as well as breastfeeding initiation. Perhaps surprisingly, Spitzmueller et al. (2018) also

found that higher job autonomy related *negatively* with breastfeeding duration. While inconsistent with some of the aforementioned results, a possible post hoc explanation the authors provided is that higher levels of autonomy can naturally come with higher levels of job demands and work-related stressors (e.g., increased time pressure that interferes with pumping breaks, having direct reports that need to be managed and may encroach on flexible time for pumping). Alternatively, the authors noted that this negative effect could be due to statistical suppression (attributed to the control variables in their model, such as age, education, ethnicity, marital status, income, and birth history), as the correlation itself between job autonomy and breastfeeding duration was positive ($r = .09, p < .05$) (Spitzmueller et al., 2018). Thus, on the whole, autonomy—and particularly having autonomy with time and one’s work location—can be an impactful predictor of the extent to which women initiate and continue to breastfeed after returning to work. Such findings also underscore the importance of communicating to employees how to flexibly implement breaks for pumping.

As a final caveat, more research is needed to understand how more extreme forms of job autonomy and flexibility may impact women’s breastfeeding. For instance, the gig economy provides increasing levels of autonomy (for reviews, see Ashford et al., 2018; Cropanzano et al., 2023). Goods et al. (2019) found that gig work was a way for individuals to navigate demands tied to the family domain. While gig work may provide increased autonomy in choosing when, where, and how much to work (Augustine et al., 2024), it often lacks traditional workplace protections and benefits, potentially impacting the ability to maintain consistent breastfeeding schedules (Zipperer et al., 2022). Moreover, gig work can be financially unstable and precarious, coming with unpredictable cash flows and little-to-no paid benefits (Cropanzano et al., 2023; Wu & Huang, 2024). This makes the likelihood of parental leave seemingly implausible; it also makes the likelihood of paid breaks to support pumping or subsidized childcare costs nonexistent. As the gig economy continues to grow, it becomes increasingly important to address the unique challenges faced by breastfeeding parents in nontraditional work arrangements. Ensuring access to adequate support and resources for balancing work, education, and caregiving responsibilities will be crucial in mitigating potential negative impacts on breastfeeding outcomes and overall worker well-being. Future research is needed to develop innovative solutions to support breastfeeding parents in the evolving landscape of work, recognizing the diverse needs of those engaged in gig economy employment.

Physical Work Conditions

Physical work conditions may be another factor that impact the extent to which women are able to continue their breastfeeding journey. Based again on classifications within O*NET, Spitzmueller et al. (2018) defined physical work conditions as those that are hazardous, encompassing repeated exposure on the job to noise, extreme temperatures, and/or chemicals. Past research has found that physical job demands such as these can be significant predictors of employees’ burnout on the job (e.g., Bakker & Demerouti, 2017), with significant physiological consequences (e.g., increased blood pressure, cortisol, and norepinephrine; Ganster & Rosen, 2013; Tafalla & Evans, 1997). Spitzmueller et al. (2018) found that those working in occupations with higher classifications of hazardous physical work conditions were less likely to both intend to breastfeed and initiate breastfeeding, though there was no relationship between work conditions and breastfeeding duration. Still, as posited by these authors, women who work in jobs with hazardous conditions may elect to not breastfeed at all given concerns associated with their working conditions harming the quality of their breastmilk produced (e.g., chemical

exposures). Supporting this, Spitzmueller et al. (2018) found that hazardous work conditions related indirectly and negatively to breastfeeding duration via reduced breastfeeding initiation rates.

Job-Related Supports

Lastly, job-related supports may be important for breastfeeding mothers (Bakker & Demerouti, 2017). Such supports can of course include the formal policies and practices that exist within the organization to support employees (e.g., paid family medical leave, subsidized childcare, spacious and private lactation facilities). Support also can be more social, or interpersonal, in nature, capturing the extent to which employees perceive that they are advocated for and supported by their supervisors and their coworkers (e.g., Chawla et al., 2024; Cohen & Willis, 1985; Gabriel et al., 2020). Spitzmueller et al. (2016) focused on three aspects of breastfeeding support (stemming from supervisors, coworkers, and formal policies) that employees can experience: (1) negative remarks from supervisors and coworkers pertaining to breastfeeding, (2) instrumental forms of support tied to formal policy (i.e., having sufficient break time, a convenient place to pump, a refrigerator to store breastmilk), and (3) perceived workplace breastfeeding support (i.e., “In your opinion, how supportive of breastfeeding is your place of employment?”). Interestingly, neither negative remarks tied to breastfeeding, nor instrumental support, predicted breastfeeding continuation upon returning to work postpartum. Yet, in predicting exclusive breastfeeding (i.e., without supplementing with formula), negative remarks from supervisors hindered this outcome, and perceived workplace breastfeeding support enhanced this outcome (Spitzmueller et al., 2016). Follow-up research by Spitzmueller et al. (2018), also using coding from O*NET, found limited relationships between job-related supports and breastfeeding—there was only a marginal positive relationship between occupation-level supports and breastfeeding duration. However, this could be because support was highly perceptual—occupation-level coding may miss some benefits that exist. To unpack this further, both formal and informal supports need to be considered.

Overall, additional research is warranted to better understand these factors and continue to add to the existing evidence base.

Formal Supports

The Break Time for Nursing Mothers Act, discussed above, requires the designation of a place other than a bathroom that is shielded from view and free from intrusion from coworkers and the public, which may be used by an employee to express human milk. There are many important features of lactation facilities or spaces (Bostick et al., 2016; Froh et al., 2018; Henry-Moss et al., 2018, 2019; Spatz et al., 2014), and it may be ideal to provide more than the minimum legal requirements. Parents need time and space to express milk or nurse. Box 8-4 outlines some essential features of a lactation room. Gabriel et al. (2020) found that having lactation spaces that were appraised as comfortable, relaxing, spacious, quiet, and private on a daily basis (likely reflecting features of lactation rooms that go beyond the elements required by law) related positively to breastfeeding women feeling more content and calm on a daily basis; while not directly tied to production daily at work, this was tied to increased feelings of work–family balance satisfaction (e.g., “I was satisfied with the balance I achieved between my work and family life”; Gabriel et al., 2020, p. 1353). Given that conflict between work and breastfeeding demands can significantly hinder women’s breastfeeding continuation (Gabriel et

al., 2020; Thomas et al., 2022), such findings underscore the importance of having positive experiences in the lactation areas that are provided to women.

BOX 8-4
Features of a Lactation Room

Elements Required by Federal Law

- Shielded from view
- Free from intrusion by the public and coworkers (e.g., have a door that can lock)
- Available whenever a mother needs to pump or express milk
- Not a bathroom
- Electrical outlets for electronic breast pumps

Elements to Improve Pumping Experience Beyond Legal Requirements

- Lockers or storage for personal belongings
- Comfortable seating
- Breast pump (hospital-grade pump)
- A white noise machine for common areas
- Small refrigerator or cooler for milk storage
- A sink with running water to clean breast pump attachments
- A mirror
- Cleaning supplies to clean the space after use

SOURCE: Office on Women's Health, 2023.

Informal (Social) Supports

More recent work from Gabriel et al. (2020) continued to unpack the social environment and cues that may affect breastfeeding mothers on a day-to-day basis at work. They initially found that women who felt that their work and breastfeeding demands were in balance (i.e., low interference between responsibilities associated with pumping breastmilk and their responsibilities with work) reported lower fatigue, which helped benefit the daily production of ounces of breastmilk. Feelings of enrichment between work and breastfeeding (i.e., feeling as though the responsibilities fit together and were not hindering work or breastfeeding) further benefited ounces of breastmilk produced directly (Gabriel et al., 2020).

In addition, acts of *breastfeeding compassion*—defined as recognition from coworkers about the challenges and trials associated with breastfeeding on a daily basis—helped improve mood but offered more limited effects on breastmilk production itself (Gabriel et al., 2020). Mothers navigating pumping at work who experienced acts of compassion from coworkers reported feeling more positive emotions within their work environment, with the quality of the breastfeeding space provided by the organization also having beneficial affective effects (e.g., lower fatigue, higher positive emotions) (Gabriel et al., 2020). Such findings dovetail with those of Chawla et al. (2024), who studied postpartum allyship—acts of allyship to support and advocate for mothers during the return to work—and the impacts that this allyship can have to help working mothers understand the human resources infrastructure (e.g., policies associated with breastfeeding/pumping) and the physical breaks available for pumping. Overall, creating daily work conditions where work and breastfeeding demands can work in balance with each

other, versus in conflict, can benefit daily human milk production. Others have found that psychological support from members of one's organization can help contribute to longer rates of exclusive breastfeeding and lactation duration (e.g., Bai & Wunderlich, 2013; Smith et al., 2023; Spitzmueller et al., 2016).

A brief summary of opportunities, identified by the Office on Women's Health, for employers to support breastfeeding employees is provided below (Table 8-1).

TABLE 8-1 Opportunities for Employers to Support Employees Who Are Lactating

Industry	Space Solutions	Time Solutions	Other Supports
Agriculture	• Mobile lactation pods/tents • Retrofitted portable restroom • Portable privacy screens • Unused office spaces	• Flexible scheduling/breaks • Job-sharing arrangements • “Floaters” to cover breaks	• Coolers for milk storage • Written and well-communicated policies • Education on pumping in outdoor settings
Hotels	• Vacant guest, conference, or hospitality rooms • Clean storage areas • Employee break area	• “Floaters” to cover breaks • Coordinated scheduling • Extended meal periods	• Refrigerators/personal coolers/insulated bags for expressed milk • Signage for privacy • Written and well-communicated policies
Manufacturing	• Converted offices or storage rooms • Mobile lactation stations • Partitioned areas/curtains • On-site clinic	• Extra break time during shifts • Adjusted work schedules	• Anticontamination protocols • Breast pump equipment provided • Written and well-communicated policies
Restaurants	• Manager’s office • Clean storage rooms/areas • Partitioned spaces • Shared space with nearby businesses	• Split shifts • Extended meal periods • Flexible scheduling/breaks	• Refrigerated storage for expressed milk • Flexible uniform policies • Door locks and signage for occupied spaces

Retail Stores	• Converted fitting rooms • Back offices • Clean storage area • Break room • Shared space with nearby businesses	• “Floaters” to cover breaks • Extended meal periods • Flexible scheduling/breaks	• Signage for occupied spaces • Employee education on pumping rights • Refrigerators/personal coolers/insulated bags for expressed milk • Signage for privacy • Written and well-communicated policies
Transportation	• Indoor office space/storage area • Flexible space in office or employee break room • Lactation rooms at terminals/stations • Mobile privacy screens/portable tent • Shared space with nearby businesses	• Route adjustments • Flexible scheduling • Adjusted work schedules	• Refrigerators/personal coolers/insulated bags for expressed milk • Written and well-communicated policies

NOTE: It is possible to support nursing women working across industries, through various creative and flexible space solutions for all staff levels. These accommodations are typically inexpensive to implement, easy to establish, and highly valued by employees, resulting in improved productivity and morale across the organization. Individual fact sheets for the industries above are available (see Office on Women’s Health, n.d-c).

SOURCE: Office on Women’s Health, n.d.-c.

BREASTFEEDING SUPPORTS FOR STUDENTS RETURNING TO SCHOOL

Dabritz et al. (2009) reported that women returning to school likely face similar challenges as women returning to work (e.g., a quick return to work postpartum “within a few weeks or months of delivery” [p. 182]); they face additional challenges due to the lack of breastfeeding supports for students that (salaried) employees may have access to (e.g., Patient Protection and Affordable Care Act). These challenges highlight the need for interventions that support mothers as they return to school.

Supporting breastfeeding mothers when they return to school involves a combination of federal laws, state policies, and school-specific practices. These school or education settings may include K–12 public or private schools, as well as universities, colleges, community colleges, or trade schools. Title IX of the Education Amendments of 1972 prohibits discrimination based on sex, including pregnancy and parental status, in educational programs and activities. This means that schools must provide reasonable accommodations for pregnant and parenting students, which can include time and space for breastfeeding or pumping.

Some states—such as California, Illinois, Minnesota, Oregon—have specific laws that support breastfeeding in schools (NCSL, 2021). For example, California has implemented comprehensive laws to support breastfeeding students in educational settings: AB 302, signed into law in 2015, reaffirms and expands the rights of parenting students to reasonable lactation accommodations in schools. This law requires all California schools with lactating students to provide:

- A private, secure room (not a restroom) for breastfeeding or expressing milk
- Permission to bring breast pumps and other necessary equipment to school
- Access to a power source and safe storage for expressed milk
- Reasonable break time for lactation without academic penalties
- Opportunity to make up any work missed during these breaks

These accommodations apply to all levels of education, from K–12 to higher education institutions (California Department of Public Health, n.d.). For instance, California Community Colleges and California State University must provide similar accommodations, including access to a private room with a comfortable seat and table, and permission to bring necessary equipment on campus (California Department of Public Health, n.d.). The law also establishes a complaint process under the Uniform Complaint Procedure, allowing students to report noncompliance, with schools required to investigate and respond within 60 days (American Civil Liberties Union of Northern California, 2015). This comprehensive approach ensures that breastfeeding students can continue their education without sacrificing their choice to breastfeed, promoting both educational equity and public health.

To assess the implementation of these policies, the California Women’s Law Center (CWLC, 2021) conducted a comprehensive audit of 414 school districts across 57 counties in California. This audit impacted nearly 3.7 million students and 356,633 employees. Initially, the average grade for California districts was a C, indicating inadequate support for breastfeeding women. However, through CWLC’s (2021) efforts to create tools and training to assist in policy implementation, 84% of the districts in California now have a grade of A or B, improving the state’s average grade to B. The audit evaluated districts based on five key criteria: lactation accommodation policies for employees and for students, complaint procedures, Title IX coordinator presence, and website information accessibility (CWLC, 2021). This work highlights

the importance of not only implementing laws but also actively monitoring and supporting their execution to ensure that breastfeeding students and employees have equal access to educational and employment opportunities (CWLC, 2021).

Colleges and universities can also offer supports to breastfeeding students. The Society for College and University Planning (SCUP, 2019) study on lactation policy and facilities across higher education campuses revealed significant findings regarding the availability and standardization of lactation spaces in these institutions (see Box 8-5). The study, conducted in collaboration with the University of Pennsylvania, surveyed representatives from 105 colleges and universities across the United States (Henry-Moss et al., 2019; SCUP, 2019); it found that nearly all surveyed institutions had at least one dedicated lactation space on campus, indicating a growing awareness of the need for such facilities. Approximately two-thirds of the institutions reported having a policy for creating lactation spaces, demonstrating a commitment to supporting breastfeeding mothers. However, only about a quarter of the surveyed schools included lactation spaces in their campus construction standards, suggesting room for improvement in institutionalizing these facilities (Henry-Moss et al., 2019; SCUP, 2019).

The research highlighted populations that may require access to lactation spaces on college campuses, including graduate students, faculty, staff, and visitors. This underscores the importance of considering lactation support as more than just an employee benefit. The study also examined the proximity of lactation spaces to campus populations, the features of these spaces (e.g., locking mechanisms and hospital-grade pumps), and the involvement of various campus stakeholders (including campus and physical planners and women's health experts) in designing and funding these facilities. As a result of this research, SCUP (2019) created a resource page to assist campus administrators in improving lactation support, emphasizing the need to view this issue as part of a broader, health-promoting campus environment. The initiative aims to streamline the process for breastfeeding mothers. Spatz, one of the study's authors, emphasizes the need for systemic support, stating: "I've said this before. I've said it a million times. All the onus is on the woman to figure it out herself. Moms shouldn't have to work so hard to be able to meet their personal breastfeeding goals. We need to make it easier" (Berger, 2019, p. 2).

BOX 8-5

A Breastfeeding Initiative to Support Expecting and Parenting Students with Lactation

The Education Leading to Employment and Career Training (ELECT) Program, an initiative administered through the Pennsylvania Department of Human Services and Education (2024), has the goal of helping pregnant or parenting students attain a diploma or high school equivalency certificate, as well as transition to the workforce, while learning parenting practices. Under the auspices of ELECT, the School District of Philadelphia, along with the University of Pennsylvania School of Nursing, provided breastfeeding education and access to electric breast pumps and other breastfeeding supplies to ensure that students are encouraged and supported as they initiate and sustain a lactation journey (Spatz, 2019). This was implemented in tandem with a revision to and adoption of the School District of Philadelphia's (2018) Policy No. 234 Pregnant/Parenting/Married Students, which expanded the legal protections of students and teen parents enrolled in area schools. This partnership among a state department of education, city school district, and research institution demonstrates a novel, cross-sector approach to protecting, supporting, and sustaining breastfeeding by teen parents or those who are students.

SOURCE: Pennsylvania Department of Education, 2024; School District of Philadelphia, 2018; Spatz, 2019.

CHILDCARE

Childcare facilities can support continued breastfeeding of infants in their care. While no federal policy mandates breastfeeding accommodations in childcare centers, at least four states have laws related to childcare facilities and breastfeeding (NCSL, 2021). Louisiana prohibits any childcare facility from discriminating against breastfed babies. Mississippi requires licensed childcare facilities to provide breastfeeding mothers with a sanitary place that is not a toilet stall to breastfeed their children or express milk, to provide a refrigerator to store expressed milk, to train staff in the safe and proper storage and handling of human milk, and to display breastfeeding promotion information to the clients of the facility. Maryland requires childcare centers to promote proper nutrition and developmentally appropriate practices by establishing training and policies promoting breastfeeding. Nevada instructs childcare facilities to provide an appropriate, private space on the premises of the childcare facility where a mother may breastfeed.

Other states promote breastfeeding-friendly childcare designation programs. For example, New York State’s Department of Health’s (n.d.) Child and Adult Care Food Program (CACFP) encourages childcare centers and family day care homes to actively support breastfeeding families. To be recognized as breastfeeding friendly, these facilities must complete an assessment demonstrating their support for breastfeeding families. Key aspects of supporting breastfeeding in childcare settings under the program include providing a designated place for breastfeeding, not offering solids to infants younger than 4 months, and not giving formula to breastfed infants without parental permission (Child Care Aware of America, 2021). Moreover, meals containing human milk are reimbursable through CACFP, providing financial benefits to the childcare facilities (New York State Department of Health, n.d.). Similar initiatives exist in other states, such as North Carolina’s Breastfeeding-Friendly Child Care Designation Program, which further highlights the growing recognition of the importance of breastfeeding support in childcare settings (North Carolina Department of Health and Human Services, n.d.).

Table 8-2 presents information from Child Care Aware (a national research organization supporting childcare providers) as to common barriers or concerns with supporting breastfeeding in childcare facilities and potential solutions for overcoming these challenges.

TABLE 8-2 Supporting Breastfeeding in Childcare Settings: Barriers, Concerns, and Solutions

Barriers/Concerns	Solutions
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Childcare providers who are also new mothers do not have time or space to pump milk or feed their children.	Create a breastfeeding-friendly workplace for new mothers on staff: • Figure out coverage or find a floater so that a program can maintain adult–child ratios while mothers go into infant rooms to pump and store human milk. • Offer private, comfortable spaces for staff to pump or breastfeed. • Offer proper storage and breaks as needed. • Ensure coverage is provided consistently.
Parents do not have space to feed their children on-site.	Create a private, comfortable space for parents to breastfeed and pump (comfortable chair with arms, small table, electrical outlet, signage indicating “room in use”) and/or support a norm of breastfeeding in the infant classroom or where the rest of the children are.
Not all providers know how to handle human milk properly. Early care and education providers often find it difficult to attend training.	Give all staff breastfeeding support training. It can be incorporated into other professional development or continuing education opportunities. Information about breastfeeding support can also be included in other annual training.
Not all providers know how to store human milk properly.	Provide proper refrigeration and space for human milk.
Policies assume families will feed formula unless they ask about breastfeeding.	Make it a policy to ask all families if they will provide human milk, rather than assuming they will use formula or ask about breastfeeding policies themselves.
Formula is the message they see.	Remove formula messaging and images of kids with bottles and replace with images of mothers breastfeeding. Make sure that images of infant feeding reflect the families who attend the programs.
Complementary feeding is begun too early.	Work with parents of infants from the beginning to develop an infant feeding plan and revisit every month (accompanied by recommendation that complementary feeding not begin until the infant is age 6 months); be clear that just because the child is eating solid foods does not mean that the child cannot breastfeed anymore.

SOURCE: Child Care Aware of America, 2018.

Conclusion 8-3: Systems of support provided by governments, employers or schools can be opaque and hard to navigate, and it is typically left to the individual to navigate various complexities while also experiencing significant shifts in their identity as a parent and worker or student.

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Conclusion 8-4: Several laws protect lactation accommodations for employees and students in the United States, but enforcement mechanisms vary across workplaces and educational institutions. While federal laws establish baseline protections, enforcement depends largely on complaints, legal action, and oversight by government agencies—and accountability systems remain weak, leaving many parents without the support they need.

Recommendation 8-2: Federal, state, territorial, tribal, and local governments, in collaboration with the public and private sectors, should (a) strengthen and enforce existing laws and legislation that guarantee that lactation accommodations and spaces are available in all workplaces, schools, colleges, universities, and childcare centers and (b) ensure that they comply with federal and state legal requirements.

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9

Exploring Research Needs and Future Implementation

The committee identified throughout their report that conducting innovative breastfeeding and human milk research requires a range of investments to ensure high-quality, impactful studies. These investments span financial resources, infrastructure, workforce development, policy support, and technology integration. This chapter outlines the committee's priorities for future research to better understand the efficacy of interventions that support breastfeeding initiation, duration, and exclusivity. It then describes implementation considerations, including opportunities to better integrate implementation research and cost-benefit analysis into evaluations of breastfeeding initiatives.

PRIORITIES FOR FUTURE RESEARCH

The means to improve breastfeeding outcomes in the United States, as reflected in the recommendations throughout the report, are multiple and intertwined, and they involve many actors. The committee's consensus is that central and continuous leadership is necessary to make consistent progress in this area. In addition, to guide the development and implementation of a national breastfeeding strategy, the committee's proposed strategy focuses on (1) strengthening national coordination efforts, (2) expanding effective community and public health interventions, (3) ensuring access to high-quality health care for all, (4) adopting and enacting breastfeeding-friendly policies to support paid leave and return to work and school, and (5) investing in research capacity and community-driven approaches.

The fifth and final theme is necessary for improving breastfeeding outcomes and rates, as investment in both research capacity and community-driven approaches can address gaps in knowledge and differences across groups. For example, a robust research capacity enables the development, testing, and evaluation of policies and practices that support breastfeeding. In addition, programs that are co-designed with communities may improve their relevance, uptake, and sustainability, as well as continuity of support.

Based on its deliberations, the committee identified two recommendations for future research: expanding funding for breastfeeding and human milk research and developing an action plan to prioritize community, clinical, and translational breastfeeding and human milk research. This chapter's recommendations do not have corresponding conclusions because they are not derived from a single body of evidence or a specific intervention. Instead, they reflect the committee's overarching assessment that sustained investment in research infrastructure is essential to support and scale the full range of breastfeeding initiatives outlined throughout the report. These recommendations are structural and enabling in nature, intended to strengthen the national research system, guide future inquiry, and support strategic alignment across agencies

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and sectors. Rather than responding to a discrete finding, they set a forward-looking agenda to close persistent knowledge gaps, improve evaluation capacity, and ensure that effective interventions can be scaled and adapted across diverse settings. As such, they are synthesized from broad, cross-cutting themes that emerged across the committee's deliberations and serve as foundational supports for the implementation of the report's broader conclusions.

Recommendation 9-1: The National Institutes of Health, along with other federal and nonfederal agencies, should expand funding and prioritize key breastfeeding research and implementation questions geared toward scaling up supports to achieve the Healthy People 2030 infant feeding goals.

This may also include additional cost-benefit analysis research, which is critical for understanding how effective breastfeeding support interventions can be scaled and sustained across varied settings.

Recommendation 9-2: The National Institutes of Health should develop an action plan for prioritizing community, clinical, and translational breastfeeding research across its institutes and centers; this plan should build on existing initiatives.

For example, the National Institutes of Health could build on current efforts, such as the Breastmilk Ecology: Genesis of Infant Nutrition (BEGIN) Project. While BEGIN would be best complemented by additional clinical and community breastfeeding and lactation research, it provides an example relevant to this report and would support the emerging evidence base evaluating community-led breastfeeding programs. More research could help identify some of the key features of these programs that influence positive breastfeeding outcomes, as well as structural limitations that prevent them from being more impactful (e.g., sustainability of funding, administrative burden of grant management, a lack of payment for services). Further research and evaluation of existing programs and organizations could also provide exemplar models of support and care across community contexts.

Ultimately, investment in research and community-driven approaches could create a feedback loop, in that research may inform policy and practice, and community-led programs may inform research by surfacing emergent needs or contextual nuance. Together, strategic investment can identify promising programs and approaches, which could be scaled and adapted for other families and communities.

In implementing Recommendations 9-1 and 9-2, the committee emphasizes specific research priorities related to breastfeeding and human milk; see Box 9-1. Such research can be guided by principles such as:

- Fund research that is focused on specific communities that experience ongoing differences in breastfeeding initiation, duration, and exclusivity rates and access to lactation care and support, and include increased sampling of groups most burdened by poor maternal and infant outcomes
- Fund community-led efforts and include resources for robust evaluation in partnership with community groups

- Fund studies that measure the cost and benefits of scaling up and sustaining effective interventions to support breastfeeding
- Measure a consistent range of metrics of success, including initiation, duration, and exclusivity, as well as meeting desired breastfeeding goals and mental, relational, and physical health of the breastfeeding dyad

BOX 9-1

Research Priorities for Improving Breastfeeding Rates, by Setting

The committee encourages funding breastfeeding research in multiple domains:

Community

- Identify funding needs of different community-led breastfeeding support programs, including an exploration of the sustainability of such initiatives.
- Further quantify the extent to which community-based breastfeeding support enables mothers to meet their infant feeding goals to better understand the unique needs of different communities.
- Evaluate the effectiveness of the Breastfeeding Family Friendly Community initiative to increase initiation and continuation of breastfeeding, improve maternal and infant health outcomes, and advance community well-being.
- Develop and validate a community-aligned, patient-centered breastfeeding experience measure.
- Study current differences in compensation in the lactation support workforce and impacts on historically underserved communities.

Marketing, Media, and Regulation

- Conduct additional research on how commercial milk formula (including infant formula) is manufactured, distributed, marketed, and paid for in the United States and how it is distributed through the U.S. Department of Agriculture's Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).
- Conduct rigorous evaluations of breastfeeding promotion support campaigns in the United States (e.g., Loving Support, WIC Breastfeeding Support, the National Breastfeeding Campaign).
- Explore opportunities and challenges related to compliance with the World Health Organization's *International Code of Marketing of Breast-Milk Substitutes*.

- Design and conduct research on the role of social media and the current information and marketing environment on breastfeeding attitudes, beliefs, and behaviors.
- Rigorously evaluate current and future breastfeeding promotion and support media campaigns to inform future efforts and build a stronger evidence base.
- Measure the effects of commercial milk formula marketing on families' breastfeeding journeys and the impact of interventions that address this influence.

Public Health

- Study the impact of the implementation of the Provisions of the Revisions in the WIC Food Packages Final Rule, including changes in participant rates of breastfeeding initiation, duration, and exclusivity, as well as the amount of commercial milk formula issued.
- Evaluate the cost savings of increased breastfeeding for WIC participants (both for the WIC program and for parents).
- Evaluate the extent to which local and state health department initiatives can protect, promote, and support breastfeeding.
- Evaluate the role of the public health workforce, including public health nurses, community health workers, and health educators, in initiating and sustaining breastfeeding and supporting infant feeding goals.
- Support research on best practices for disaster preparedness and responses related to infant and young child feeding in emergencies (IYCF-E), with a focus on breastfeeding practices, safe infant feeding, breastfeeding outcomes, and the role of breastfeeding in enhancing family resilience during disasters in the U.S. context.

Health Care

- Quantify the comparative effectiveness of state regulations, national accreditation standards, and Baby-Friendly USA certification to ensure that maternity hospitals fully implement and sustain to the World Health Organization Baby-Friendly Hospital Initiative's Ten Steps for Successful Breastfeeding.
- Evaluate the comparative effectiveness of different models of lactation care within various settings (e.g., inpatient, outpatient, primary care).
- Test approaches to establishing a medical home for the breastfeeding dyad, such as co-locating care for mothers and infants in the "fourth trimester."
- Measure the efficacy and comparative effectiveness of approaches to diagnose and treat common lactation and breastfeeding problems, including mastitis, breastfeeding-associated

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pain, insufficient glandular tissue, low milk production, insufficient milk transfer, infant latch difficulties, ankyloglossia, food protein–induced allergic proctocolitis, and dysphoric milk ejection reflex.

- Measure the distribution of and access to the lactation support workforce across the United States.
- Test the effectiveness of tuition support and other assistance programs for education and certification for lactation support providers.
- Develop a robust database that allows research into the association between breastfeeding and reduced infant mortality.
- Better evaluate and communicate the potential benefits and risks of maternal medications and impacts on human milk.
- Test the efficacy and effectiveness of strategies for supporting provision of donor human milk for sick and vulnerable infants (including critically ill infants).

Insurance and Payment

- Evaluate the effectiveness of options presented in the U.S. Breastfeeding Committee's *Payer Policy Guidance: Innovative Approaches to Coverage of Breastfeeding Support, Equipment, and Supplies*.
- Develop and test Consumer Assessment of Healthcare Providers and Systems measures to quantify the accessibility, timeliness, and patient centeredness of lactation and breastfeeding care and coverage for support and supplies.
- Assess the cost(s) of implementing all levels (primary, secondary, tertiary) of breastfeeding care services that women need across their lactation journey.

Return to Work or School

- Quantify the effects of different family leave durations and payment levels on breastfeeding outcomes.
- Evaluate the costs of paid family leave mandates and their effects on small employers, including strategies for mitigating cost burden.
- Measure the impacts of the child tax credit, cash transfers, universal basic income, and other poverty-remediation measures on breastfeeding outcomes.
- Evaluate features of breastfeeding-friendly childcare and identify best practices for families returning to work or school (e.g., on-site childcare).

- Quantify the extent to which investments such as paid parental leave and flexible workplace accommodations affect long-term employment, workplace well-being, and productivity and health.

IMPLEMENTATION CONSIDERATIONS

Additional research is needed to support effective implementation of interventions to support breastfeeding across all levels and sectors. Increased investments in the research and public health workforce are also needed (Eyler, 2020; McPake et al., 2023; Pérez-Escamilla, 2022; 2023a). Sustained investments are needed to build capacity, reimagine and grow the workforce, and ensure that research institutions and public health agencies can effectively conduct high-quality, innovative, and ethical research studies. Meeting the research goals and priorities outlined in this chapter requires a research and public health workforce that is highly skilled, well trained, and representative of all the communities being served (Asiodu et al., 2021; Lett et al., 2022; Valantine & Collins, 2015).

The sections below briefly discuss the need for research to better support the scaling up of effective programs, measuring the benefits and costs of effective interventions, and additional data needs to monitor outcomes and quality improvement opportunities.

Scaling Up Effective Programs

Scaling up effective programs and policies, such as those recommended throughout this report, requires implementation research to learn how to effectively adapt breastfeeding interventions to the local context (Litwan et al., 2021; Hernández-Cordero et al., 2022), systematically taking the input from key actors into account (Litwan et al., 2023). Conducting pilot and feasibility trials prior to large-scale implementation may also be important for successful implementation and maintenance of breastfeeding support programs (World Health Organization & UNICEF, 2021).

For example, Pérez-Escamilla et al. (2023b) identified key components of national programs that had been successful at scaling up effective policies and programs in low- and middle-income countries. The review identified breastfeeding programs located in 28 countries in Africa, Latin America and the Caribbean, and Asia. The authors mapped a total of 22 enabling factors and 15 barriers into a scale-up framework that they then used to build a breastfeeding gear model (BFGM). According to Pérez-Escamilla et al. (2023b), the BFGM indicates the need for several key “gears” to be working in synchrony and coordination.

The BFGM visualizes national breastfeeding programs as a complex engine or system that requires eight gears or elements to function properly (Figure 9-1). Research and evidence-based guidance are needed to inform decision-making and implementation of policies that support interventions and programs to improve breastfeeding outcomes. Resources are also needed for implementing behavior change communication campaigns and to conduct operational research on implementation and maintenance barriers and facilitators of the national program. At the center of the BFGM lies the master gear that is needed to coordinate goals, policies, and programs across the peripheral gears, using a multilevel management information system that facilitates decision-making from the local to the national levels. The model offers an opportunity to understand the strengths and weaknesses of each gear (Pérez-Escamilla et al., 2023).



FIGURE 9-1 The breastfeeding gear model.

SOURCE: Pérez-Escamilla et al., (2023). Licensed under CC BY-ND 4.0.

Measuring the Benefits and Costs of Interventions to Support Breastfeeding

Adopting effective programs and interventions also requires an accurate assessment of the costs of implementation and maintenance of breastfeeding policies and programs and corresponding monitoring and evaluation systems (Carroll et al., 2020). Recent work has applied this approach for understanding the cost of expanding paid maternity leave duration among women working in the formal sector (Vilar-Compte et al., 2020) and for providing a cash transfer to women working in the informal economy, especially in lower-income countries (Carroll et al., 2022; Siregar et al., 2021; Ulep et al., 2021; Vilar-Compte et al., 2019). Likewise models that estimate the training cost for implementing the Baby Friendly Hospital Initiative have been applied to the United States and Mexico (Arslanian et al., 2022). This work is essential for providing cost-effectiveness estimates to inform breastfeeding investment decisions.

While the committee was not asked to provide in-depth regulatory impact or cost analyses for approaches to improving breastfeeding experiences and rates in the United States, it recognizes that it is useful to outline cost analyses that would provide well-informed, educated estimates for the costs of scaling up high-impact policies, programs, and investments that have made demonstrated improvements in breastfeeding measures. However, such data are largely unavailable in the U.S. context. As an example, analysis of scaling up of breastfeeding peer counseling in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) requires data that are not currently available; this is especially true for detailed information on coverage rates and ratios of peer counselors to WIC participants. Scaling up includes providing services where they are not currently offered and achieving service levels at all sites that allow all WIC participants to access peer counseling. Data on the ratios of counselors to participants—and thus of this measure of access to services—are limited. It is also not known how many mothers who formula feed their infants might switch to breastfeeding if

more peer counselors were available. Overall, the committee emphasizes the need for research studies to estimate the full set of benefits and costs of scaling up breastfeeding programs and interventions, particularly for the Baby Friendly Hospital Initiative, WIC breastfeeding peer counseling, and paid family and medical leave. Such cost analyses of proven approaches would need to focus on measuring the entire population of mothers and infants, how far their breastfeeding experience falls short of meeting the standard of care, and the cost of improving care and outcomes.

Data Needs

Finally, implementing breastfeeding supports and interventions requires high-quality data and monitoring of outcomes. Chapter 4 discusses routine national monitoring systems that track breastfeeding outcomes and notes that additional data collection to capture the wide variety of public health supports for breastfeeding would be useful for identifying gaps and opportunities. It recommends that the U.S. Centers for Disease Control and Prevention continue to coordinate the surveillance of breastfeeding outcomes and expand the current data collection systems to ensure continuity, coordination, and collaboration across federal, state, territory, tribal, and local programs. By expanding the scope of data collection, strengthening current systems, and enhancing community-level data gathering, public health agencies can improve breastfeeding support services and address differences in rates among populations.

Improving breastfeeding outcomes in the United States will require sustained investment in research and community-driven solutions that are practical, effective, and grounded in real-world experiences. Strengthening research capacity across clinical, community, and public health settings will support the development, evaluation, and scaling of interventions that help families initiate and sustain breastfeeding. At the same time, partnering with communities ensures that programs are responsive to local needs and thus may be more likely to succeed. By expanding funding, prioritizing implementation science, measuring costs and benefits, and improving data systems, federal and nonfederal stakeholders can identify what works, support its adoption, and build a stronger foundation for infant feeding policy and practice nationwide.

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