

# Life Course Indicator: Breastfeeding Support - Baby Friendly Hospitals

## The Life Course Metrics Project

As MCH programs begin to develop new programming guided by a life course framework, measures are needed to determine the success of their approaches. In response to the need for standardized metrics for the life course approach, AMCHP launched a project designed to identify and promote a set of indicators that can be used to measure progress using the life course approach to improve maternal and child health. This project was funded with support from the [W.K. Kellogg Foundation](#).

Using an RFA process, AMCHP selected seven state teams, Florida, Iowa, Louisiana, Massachusetts, Michigan, Nebraska and North Carolina, to propose, screen, select and develop potential life course indicators across four domains: Capacity, Outcomes, Services, and Risk. The first round of indicators, proposed both by the teams and members of the public included 413 indicators for consideration. The teams distilled the 413 proposed indicators down to 104 indicators that were written up according to three data and five life course criteria for final selection.

In June of 2013, state teams selected 59 indicators for the final set. The indicators were put out for public comment in July 2013, and the final set was released in the Fall of 2013.

### Basic Indicator Information

**Name of indicator:** Breastfeeding Support – Baby Friendly Hospitals (LC-4)

**Brief description:** Proportion of births occurring in baby friendly hospitals

**Indicator category:** Community Health Policy

**Indicator domain:** Service/Capacity

**Numerator:** Number of births at Baby-Friendly designated hospitals for a given year

**Denominator:** Number of births in State for a given year

**Potential modifiers:** Race/ethnicity, socioeconomic status, geography, density of Baby-Friendly Hospitals in a given state, available funding for a state/hospital to pursue the designation, location/size of baby-friendly hospital, rate at which Baby-Friendly USA can move through process to award designation

**Data source:** Annual Centers for Disease Control and Prevention (CDC) Breastfeeding Report Card

**Notes on calculation:** As an alternative to Baby-Friendly designation, this indicator can be examined as the proportion of births occurring in facilities who provide recommended care for lactating mother and their babies. This can be determined by state-specific metrics, or by looking at facilities who have implemented the ten steps for successful breastfeeding. To calculate an indicator based on the ten steps for successful breastfeeding, the analyst would need to design a way to obtain information on the progress each hospital in a given geographic area has made on the ten steps; there is currently no standard source for this information other than the Baby-Friendly Hospital designation. The CDC Maternity Practices in Nutrition and Care (mPINC) Survey generates a score for each facility and state to indicate their performance regarding implementation of practices that support breastfeeding. The mPINC score ranges from zero to 100, with higher scores indicating more supportive maternity care

practices.

**Similar measures in other indicator sets:** HP 2020 Focus area MICH-24; MIECHV Benchmark Area Improved Maternal and Newborn Health: Breastfeeding; Chronic Disease Indicator

## Life Course Criteria

### **Introduction**

Breastfeeding impacts women and infants in the immediate postpartum period and infancy and confers lifelong benefits to both. It is consistent with the life course model which states that early exposures during a critical or sensitive period during childhood influence adult health outcomes. Breastfeeding can also reduce cumulative exposures to health risks over time for both the mother and infant. The Baby-Friendly hospital designation is designed to recognize facilities that offer an optimal level of care for lactation based on the WHO/UNICEF Ten Steps to Successful Breastfeeding for Hospitals. While it is a proprietary designation, today it remains one of the few standardized methods for assessing breastfeeding support in birth facilities. Maternity practices in hospitals and birth centers can influence breastfeeding behaviors during a period critical to successful establishment of lactation, in turn influencing initiation and duration of breastfeeding that can have lifelong implications for the health of the mother and the infant.

### **Implications for equity**

Baby-Friendly hospital policies reduce health disparities within an institution because all infants are born into similar environments that promote breastfeeding. However, there is the potential for inequity if the adoption of the Baby-Friendly designation is not uniform and low-income or diverse populations do not have similar access to Baby-Friendly hospital care as other populations. Because of the financial costs associated with the Baby-Friendly designation, including the fees related to the designation pathway, education/training requirements, and the requirement for institutions to purchase infant formula, there is the potential for the adoption of the Baby-Friendly designation to vary between resource-rich and resource-poor institutions. However, it is not uncommon for decision makers to overestimate the actual costs associated with the process, and after designation is achieved, the financial implications of the designation appear to be minimal. A recent study demonstrated that the cost differences between Baby-Friendly and non-Baby-Friendly for a typical acute care hospital were not statistically significant (DelliFraine et al., 2011). Literature demonstrates that among Baby-Friendly institutions, breastfeeding rates do not vary based on race/ethnicity/poverty as they do in the general population (Merewood et al, 2005).

Compared with white infants, breastfeeding initiation and continuation rates for Black infants are approximately 50 percent lower. Although the reason for this is not yet fully understood, the need to return to work earlier and lack of social support for Black women desiring to breastfeed are thought to be contributing factors to lower breastfeeding initiation and duration rates compared with White women (CDC 2007). Women living in the southeast area of the U.S. are also less likely to breastfeed to any extent (DHHS 2011). However, breastfeeding can improve food security as it is usually readily available, low cost, and requires no preparation to provide an infant feeding (Bai 2009, Guttman 2000, Neifert 1988). Breastfeeding may also reduce financial strain as families can save \$1,200-1,500 in the cost of non-specialty formula during the first year of a baby's life (Ball 1999). Breastfeeding improves infant health and has been shown to decrease direct and indirect insurance claims cost and lost days from work due to caring for a sick infant (USBC 2002). According to one review of the benefits of breastfeeding, cost savings for decreased cases of ear and respiratory infections, gastroenteritis, and necrotizing enterocolitis would have equaled an estimated \$3.6 billion annually in direct and indirect health care costs (Weimer 2001).

Additionally, the relationship of breastfeeding rates to lower income is demonstrated in the studies done by the U.S. Department of Agriculture (USDA) Supplemental Nutrition Program for Women, Infants, and Children (WIC). This study found that sociodemographic factors such as WIC participation, for which eligibility is based on income, and maternal education, are inversely related with the likelihood to have ever breastfed and similarly up to six and twelve months.

Only a small percentage of women have access to Baby-Friendly designated hospitals in the US. Currently there are only 166 birthing hospitals/centers in 41 states and the District of Columbia that are designated as Baby-Friendly. Because of the limited number, access to these hospitals/centers is based on the woman's residence. Therefore, only 6.9 percent of births occur in hospitals/centers demonstrating they provide the recommended, evidence-based care for lactating mothers

and babies through Baby-Friendly designation (Baby-Friendly USA 2013). Implementing the standards for Baby-Friendly designation in hospitals across the U.S., especially in those areas where breastfeeding rates are lowest, has the potential to put babies and mothers on a healthier trajectory and close ongoing disparities in breastfeeding rates.

### **Public health impact**

The potential life-long implications of breastfeeding through the recommended milestones for both mothers and their infants make indicators associated with improvements in breastfeeding outcomes a natural component of life course measurement and equity. The 2011 Surgeon General's Call to Action recommends the acceleration of maternity institution designations as Baby-Friendly because of the improved breastfeeding rates associated with the Baby-Friendly Hospital Initiative (BFHI). Data from the Promotion of Breastfeeding Intervention Trial (PROBIT) demonstrated links between BFHI and longer breastfeeding duration at 12 months (19.7 percent vs. 11.4 percent,  $p < .001$ ) and exclusivity at three months (43.3 percent vs. 6.4 percent,  $p < .001$ ) (Martens 2012). Maternity practices in hospitals and birth centers can influence breastfeeding behaviors during a period critical to successful establishment of lactation. Abundant literature, including a Cochrane review, document that institutional changes in maternity care practices to make them more supportive of breastfeeding increase initiation and continuation of breastfeeding (CDC 2009).

The risks of not breastfeeding include increased incidence of many common childhood infections as well as chronic pediatric conditions such as obesity, asthma and certain cancers (Stuebe 2009). Not breastfeeding is also associated with an increased risk of disease for women, including breast and ovarian cancer and type II diabetes (Stuebe 2009).

Infants who are exclusively breastfed or breastfed to any extent experience significantly fewer infections and diseases than formula-fed infants. Longer and more exclusive breastfeeding is also associated with better health outcomes. A 2010 Pediatrics study demonstrated that the United States incurs \$13 billion in excess costs annually and suffers over 900 preventable deaths per year because breastfeeding rates fall far below medical recommendations (Bartick and Reinhold 2010).

Economic effects of breastfeeding can be experienced by families, insurers, employers, schools, and society as a whole through increased health care costs, missed work and school, cost of formula for families and society, among others. It is estimated that the United States could save \$10.5 billion per year in additional health care costs associated with breastfeeding (DHHS 2011).

Healthy People 2020, has included initiation, continuation, and exclusivity as national breastfeeding priorities. Under the health objectives for Perinatal Care, MICH-24: Increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies. The baseline is 2.9 percent and target is 8.1 percent (HP 2020, 2013).

### **Leverage or realign resources**

This indicator presents opportunities for leveraging and realigning resources in sectors such as health care, employers, accrediting organizations, childcare facilities, and government programs (WIC, State perinatal programs). Breastfeeding success while in the birthing hospital/center is critical in determining the duration of breastfeeding following discharge. By not having the support needed during the early postpartum period, the rates for successful breastfeeding are decreased and therefore affect the lifelong health outcome for the child (DiGirolamo 2008). Hospitals are recognizing that achieving Baby-Friendly designation indicates they are following a set of evidence-based practices that promote, protect and support breastfeeding. The Joint Commission, the organization that accredits and certifies U.S. hospitals, added exclusive breast milk feeding in the hospital as a new quality of care measure in the Perinatal Care Core Measure Set in 2010 (Joint Commission 2013).

Securing Baby-Friendly designation requires both traditional and non-traditional partnerships at the institutional level, from obstetric, pediatric and nursing professionals to the marketing, purchasing, IT, compliance and quality improvement departments. Marketing teams are engaged to promote the improved hospital experience associated with the Baby-Friendly environment as well as to set expectations for parents for upcoming hospital stays. Purchasing departments become involved due to the required shift from receiving free formula from companies to purchasing it. IT departments are engaged with requirement changes to MIS systems in order to comply with the required data collection associated with the Baby-Friendly designation. Compliance teams may become involved as some of the Baby-Friendly requirements are

well aligned with hospital directives around conflict of interest. Lastly, the quality improvement teams typically engage with the processes behind achievement of each of the ten Baby-Friendly steps. There is some interest in investigating Medicaid pay for performance initiatives related to the implementation of Baby-Friendly policies based on the evidence that maternity practices that facilitate successful breastfeeding positively impact the incidence of newborn readmission, costly infection, and morbidities later in childhood. Community-based health care providers and organizations are also tied into successful efforts to secure and support the Baby-Friendly designation, as prenatal breastfeeding education by physicians and post-discharge community-based breastfeeding support must be in place in order for a facility to achieve Baby-Friendly status.

Breastfeeding is considered to have many health benefits including obesity prevention; promoting, protecting and supporting breastfeeding is very much a focus among health care professionals, insurers, communities, government groups, employers, hospitals, and others, including but not limited to:

- The worldwide Baby-Friendly Hospital Initiative launched in 1991 by World Health Organization (WHO) and United Nations Children’s Fund (UNICEF) (WHO 2013)
- The CDC, The CDC Guide to Breastfeeding Interventions (Shealy 2005)
- National Initiative for Children’s Healthcare Quality (NICHQ), Best Fed Beginnings (NICHQ 2013)
- American Academy of Pediatrics (AAP 2012)
- Academy of Breastfeeding Medicine – Protocols (ABM 2007)
- WIC: Breastfeeding Peer Counseling Program (USDA 2013)
- US Surgeon General – Call to Action to Support Breastfeeding 2011 (DHHS 2011)
- Baby-Friendly USA (Baby-Friendly USA 2013)

The *Patient Protection and Affordable Care Act (ACA)* women’s preventive services include “breastfeeding support, supplies, and counseling” without copayment (HRSA 2013). Employers have a responsibility to provide support to breastfeeding employees since studies show that employed breastfeeding women have lower breastfeeding initiation and shorter duration rates than those who are not employed while breastfeeding (DHHS 2011). On Mar. 23, 2010, the break time for nursing mothers requirement included in the ACA was signed into law. The law requires “employers to provide a nursing mother reasonable break time to express breast milk after the birth of her child.” The law also requires that employers 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 breast milk.” The duration of this requirement applies to breastfeeding employees up to the time the child is 12 months of age and applies to employers with 50 or more employees (DOL 2013).

Also under the ACA, women’s preventive services are covered by health plans without cost sharing. Included in these services are “comprehensive lactation support and counseling, by a trained provider during pregnancy and/or in the postpartum period, and costs for renting breastfeeding equipment” (HRSA 2013).

Another far-reaching program that supports breastfeeding women and families is the WIC program. The number of women, infants, and children receiving WIC benefits in 2011 was nearly nine million per month (USDA About WIC 2013). Since 1996, the USDA Food and Nutrition System has allocated a minimum expenditure for breastfeeding promotion and support activities equal to \$21 multiplied by the number of pregnant and breastfeeding women in the WIC Program, based on the average of the last three months for which USDA has final data. State agencies must spend a specified amount of the total funding for breastfeeding promotion and support. Efforts to increase and support the number of women breastfeeding have also included enhanced food packages for women breastfeeding up to 12 months and the implementation of the Peer Counseling Program (USDA WIC Benefits and Services 2013).

### ***Predict an individual’s health and wellness and/or that of their offspring***

Breastfeeding falls under the “timing” component of the MCH Life Course Model as it is a behavior that can affect one’s health trajectory during a critical or sensitive period. Research studies have documented known risks of not breastfeeding for an individual child including an increase in the incidence of several diseases and conditions, including ear infections, gastrointestinal infection/diarrhea, respiratory infection, necrotizing enterocolitis, SIDS, allergic disease, asthma, celiac disease, obesity, diabetes, and childhood leukemia and lymphoma (Ip 2007, DHHS 2011). As children progress into adolescence, they are more likely to be overweight or obese, develop type II diabetes, and experience other chronic

diseases even into adulthood. Because human milk contains valuable antibodies, hormones, and enzymes that are not found in breast milk substitutes, infants who are not breastfed do not receive the same protection against all of these illnesses and diseases throughout their lifetime (ABM 2008).

Breastfeeding also impacts women’s health. Women who do not breastfeed are at higher risk for breast cancer, ovarian cancer, cardiovascular diseases and type II diabetes. In women with a cumulative duration of breastfeeding more than 12 months there is a 28 percent decrease in the incidence of breast cancer and ovarian cancer and a four percent to 12 percent decreased risk of type II diabetes for each year of breastfeeding (AAP 2012). The longitudinal Nurses’ Health Study noted an inverse relationship between the cumulative lifetime duration of breastfeeding and the development of rheumatoid arthritis. If cumulative duration of breastfeeding exceeded 12 months, the relative risk of rheumatoid arthritis was 0.8 (95 percent CI: 0.8–1.0), and if it was longer than 24 months, the relative risk of rheumatoid arthritis was 0.5 (95 percent CI: 0.3–0.8) (Karlson, 2004). Further, women who breastfeed experience a more rapid return to pre-pregnancy weight and a decreased risk of bleeding postpartum.

The table below from the 2011 Surgeon General’s call to action highlights the impact of not breastfeeding on infant and maternal morbidity:

Additionally, research has shown that the rate of abuse and neglect was significantly increased for mothers who did not

breastfeed as opposed to those who did (OR: 2.6; 95 percent CI: 1.7–3.9) (Strathearn 2009). Data from the Women’s Health Initiative has demonstrated an association between cumulative lactation experience and the incidence of adult cardiovascular diseases (AAP, 2012). Women with a cumulative lactation history of 12 to 23 months had a significant reduction in hypertension (OR: 0.89; 95 percent CI: 0.84–0.93), hyperlipidemia (OR: 0.81; 95 percent CI: 0.76–0.87), cardiovascular diseases (OR: 0.90; 95 percent CI: 0.85–0.96), and diabetes (OR: 0.74; 95 percent CI: 0.65–0.84) (AAP, 2012). In conclusion, breastfeeding has implications for the health of both the mother and the child across their lifespan. Baby-Friendly hospitals improve

breastfeeding rates, and therefore the proportion of births that occur at Baby-Friendly hospitals is an important life course indicator.

## Data Criteria

### Data availability

Data on the percent of live births occurring at Baby-Friendly facilities are available each August from CDC for the United States and by state for all 50 states and the District of Columbia.

## Appendix 2. Excess Health Risks Associated with Not Breastfeeding

Outcome	Excess Risk* (%) (95% CI) <sup>†</sup>	Comparison Groups
<i>Among full-term infants</i>		
Acute ear infections (otitis media) <sup>‡</sup>	100 (56, 233)	EFF <sup>§</sup> vs. EBF <sup>¶</sup> for 3 or 6 mos
Eczema (atopic dermatitis) <sup>  </sup>	47 (14, 92)	EBF <3 mos vs. EBF ≥3 mos
Diarrhea and vomiting (gastrointestinal infection) <sup>‡</sup>	178 (144, 213)	Never BF <sup>¶</sup> vs. ever BF
Hospitalization for lower respiratory tract diseases in the first year <sup>‡</sup>	257 (85, 614)	Never BF vs. EBF ≥4 mos
Asthma, with family history <sup>‡</sup>	67 (22, 133)	BF <3 mos vs. ≥3 mos
Asthma, no family history <sup>‡</sup>	35 (9, 67)	BF <3 mos vs. ≥3 mos
Childhood obesity <sup>‡</sup>	32 (16, 49)	Never BF vs. ever BF
Type 2 diabetes mellitus <sup>‡</sup>	64 (18, 127)	Never BF vs. ever BF
Acute lymphocytic leukemia <sup>‡</sup>	23 (10, 41)	Never BF vs. >6 mos
Acute myelogenous leukemia <sup>‡</sup>	18 (2, 37)	Never BF vs. >6 mos
Sudden infant death syndrome <sup>‡</sup>	56 (23, 96)	Never BF vs. ever BF
<i>Among preterm infants</i>		
Necrotizing enterocolitis <sup>‡</sup>	138 (22, 2400)	Never BF vs. ever BF
<i>Among mothers</i>		
Breast cancer <sup>‡</sup>	4 (3, 6)	Never BF vs. ever BF (per year of breastfeeding)
Ovarian cancer <sup>‡</sup>	27 (10, 47)	Never BF vs. ever BF

\* The excess risk is approximated by using the odds ratios reported in the referenced studies.

<sup>†</sup> CI = confidence interval.

<sup>‡</sup> EFF = exclusive formula feeding.

<sup>§</sup> EBF = exclusive breastfeeding.

<sup>¶</sup> BF = breastfeeding.

The numerator, the number of births occurring in Baby-Friendly facilities (which through Baby-Friendly designation means they provide lactation support services), is calculated and published by Baby-Friendly USA (Baby-Friendly USA 2013). Data may also be obtained for the numerator from state vital records birth certificate data and assessed against the Baby-Friendly Hospital Directory at [www.babyfriendlyusa.org](http://www.babyfriendlyusa.org), which is updated more regularly (as hospitals achieve designation, they are placed in the directory). The denominator, number of live births in all birthing facilities, can be obtained from the National Vital Statistics report (Hamilton 2012).

Baby-Friendly USA calculates the percent of births occurring at a Baby-Friendly facility. The assumption is that CDC will be able to access the state-level data to put on their annual Breastfeeding Report Card, which will be readily available to the public. The 2013 Breastfeeding Report Card reported data on live births from 2011, indicating a two year lag from this data source. Accessing this data source does not require special permission.

### ***Data quality***

Data quality appears to be good. The list of currently designated hospitals on the Baby-Friendly Hospital Directory is updated regularly, usually once a hospital is awarded Baby-Friendly status according to Baby-Friendly USA staff. Hospitals cannot be mischaracterized given the rigor required to be designated as a Baby Friendly hospital. Although there is no set schedule for updates or awards, the list of designated hospitals is updated in a timely enough manner to calculate percentages based on state vital records and the National Vital Statistics data. Data are reported consistently across states.

Data in the National Vital Statistics report is based on 100 percent of the births from the state vital statistics offices reported on an annual basis. In a 2007 study, Reichman and Schwartz-Soicher reported that birth certificates are a valuable resource for tracking and analyzing infant health at the state and national levels. Although a comprehensive validation study of birth certificate data has never been conducted at the national level, researchers have conducted a number of validation studies from different states and years that indicate that birth certificates have highly accurate reporting of birth weight, demographic characteristics, and most methods of delivery (Reichman and Schwartz-Soicher, 2007).

### ***Simplicity of indicator***

There is a low level of complexity in calculating this indicator since it is a basic percentage calculation. The numerator is a number that is commonly recorded in all birthing facilities and reported to state vital statistics. Baby-Friendly USA is accurate in identifying those hospitals that are designated and obtaining annual statistics.

Although the steps in achieving Baby-Friendly status can be complicated, the notion of certification for hospitals that provide an optimal level of care for lactation is accessible and conceptually simple to understand. The Baby-Friendly designation is designed to recognize facilities that offer an optimal level of care for lactation based on the WHO/UNICEF Ten Steps to Successful Breastfeeding for Hospitals. Baby-Friendly USA maintains the guidelines and the minimum standard criteria on their website. The guidelines and evaluation criteria for hospital/birthing center implementation include ten steps predicated on eight principles (Baby-Friendly USA, 2013).

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