Breastfeeding promotion is a vital part of California’s charge to improve short and long-term maternal and child health. For more than a decade, policymakers and advocates have used publicly reported data to guide, evaluate, and monitor work to improve breastfeeding rates in our large and diverse state. Together, local and statewide education, interventions, and support efforts have steadily increased in-hospital exclusive breastfeeding rates, bringing the benefits of exclusive breastfeeding to nearly 300,000 California families. To maintain our current momentum, consistent and comparable data on breastfeeding exclusivity and duration are needed to build on the successes achieved in California hospitals and drive change in medical, workplace, and childcare environments.
Decades of research studies confirm that breast milk provides all the nutrients and other factors that a newborn needs to grow, develop, and build a strong immune system. Breastfeeding exclusively—that is, breast milk is the baby’s only food—for the first six months of life, is particularly effective in reducing unnecessary health care expenditures. Breastfeeding significantly reduces children’s risk for infections and chronic diseases such as diabetes, asthma, and obesity. Breastfeeding also reduces mothers’ risk for type 2 diabetes and breast and ovarian cancers. Breastfed children require fewer visits to the doctor and take fewer medications than children who are formula fed. Recently, it was estimated that $3.0 billion (in 2014 dollars) in medical costs would be saved if all U.S. infants were fed according to the current pediatric guidelines.

In recognition of the opportunity to improve the health of millions of Americans, the Healthy People 2020 framework includes targets for breastfeeding initiation, duration, and exclusivity as well as objectives in supporting areas. According to data collected by the National Immunization Survey (NIS) 2014-2015, (Figure 1) California has achieved the 2020 benchmarks for breastfeeding initiation, breastfeeding at 12 months, and exclusive breastfeeding at 3 months. California is within 2% of the goal for breastfeeding rates at 6 months. However, these benchmarks are interim goals, not endpoints, which will be reset to direct national efforts through the next decade.

Data show that exclusive breastfeeding during the hospital stay is one of the most important influences on how long babies are breastfed exclusively after discharge. Mothers can be prevented from achieving their infant-feeding goals by hospital practices such as separating mothers from their babies, delaying the first feeding, and routinely providing formula supplementation, even for infants whose mothers intend to breastfeed exclusively. The Centers for Disease Control and Prevention (CDC) has used data to set national goals to improve mothers’ access to optimal outcomes by tracking the proportion of babies born in facilities with supportive policies and the proportion of healthy babies receiving formula supplementation in the first 2 days. California already has exceeded the benchmark for the proportion of babies born in breastfeeding supportive facilities and is within 1% meeting the goal for reduced supplementation rates.

**Figure 1: Centers for Disease Control and Prevention: Data Sources**

<table>
<thead>
<tr>
<th>National Immunization Survey (NIS)(^1)(^2)</th>
<th>Maternity Practices in Infant Nutrition and Care Survey (mPINC)(^2)(^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>When:</strong> Every year</td>
<td><strong>When:</strong> Every 2 years</td>
</tr>
<tr>
<td><strong>Sample &amp; Contact Method:</strong> National random dial survey of more than 25,000 households with children 19 to 35 months</td>
<td><strong>Sample &amp; Contact Method:</strong> Survey sent to every hospital in the US. Key informant asked to fill out and return</td>
</tr>
<tr>
<td><strong>Reporting:</strong> State and national level</td>
<td><strong>Reporting:</strong> State and national level</td>
</tr>
<tr>
<td><strong>Related measures:</strong> Breastfeeding initiation, exclusivity, duration</td>
<td><strong>Related measures:</strong> Hospital policies and practices, early supplementation</td>
</tr>
</tbody>
</table>

*The way we work in public health is, we make the best recommendations and decisions based on the best available data.*

-Tom Frieden
Researchers have demonstrated that the policies promoted by the Baby-Friendly Hospital Initiative (BFHI) are associated with increases in breastfeeding initiation, duration, and exclusivity. Nearly all of the studies indicate that well-monitored implementation of BFHI policies results in increased breastfeeding rates during and beyond the hospital stay. The number of Baby-Friendly hospitals in California has increased dramatically, from only 12 in 2006 to more than 80 in 2016, and the proportion of babies born in these hospitals has more than tripled since 2010. Still, efforts are continuing throughout the state to promote and support hospitals moving forward to improve their policies. By 2025, all California hospitals are required by law to have the Baby-Friendly designation, or adopt similar comprehensive policies that support breastfeeding families.

Improvements in hospital policies have been reflected in increasing scores on the CDC Maternity Practices in Infant Nutrition and Care (mPINC) Survey (Figure 1). CDC epidemiologists collect data through the mPINC survey to monitor outcomes from national efforts to improve perinatal care. Between 2007 and 2013 (the most recent published report), the California composite score rose from 69 (ranking 11th in the US) to 85 (ranking 7th in the US). Data from the mPINC survey are also used by CDC to track changes in specific policies and practices. While improvements occurred within all dimensions of care assessed by the mPINC survey (Figure 2), data from California show the biggest improvements occurred in labor and delivery care, the removal of discharge packs containing formula samples, new staff training, and the development and dissemination of evidence-based policies. Areas needing improvement also were identified for California hospitals; less than 25% reported that they supplemented breastfed infants only rarely or allowed infants to remain in the room with their mothers for assessments and procedures.

Using 2013 data, the California Department of Public Health Maternal Child and Adolescent Health Division (MCAH) has created and posted mPINC reports for counties with at least 5 maternity facilities and each of the Regional Perinatal Programs of California (RPPC) regions.

The county reports demonstrate that local efforts have paid off, with county scores in Riverside, Sacramento, San Bernardino, San Diego and San Joaquin Counties exceeding the statewide average. Regionally, the highest scores are found in the following RPPC regions: Kaiser Permanente-Southern-California, Kaiser Permanente-Northern-California, and the Mid-Coastal region.

**Figure 2: mPINC Dimensions of Care Scores in California, 2007 and 2013**

<table>
<thead>
<tr>
<th>Dimension of Care</th>
<th>2007 Score</th>
<th>2013 Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>OVERALL</td>
<td>69</td>
<td>83</td>
</tr>
<tr>
<td>LABOR AND DELIVER CARE</td>
<td>63</td>
<td>86</td>
</tr>
<tr>
<td>FEEDING OF BREASTFED INFANTS</td>
<td>77</td>
<td>86</td>
</tr>
<tr>
<td>BREASTFEEDING ASSISTANCE</td>
<td>82</td>
<td>92</td>
</tr>
<tr>
<td>CONTACT BETWEEN MOTHER AND INFANT</td>
<td>78</td>
<td>90</td>
</tr>
<tr>
<td>FACILITY DISCHARGE CARE</td>
<td>49</td>
<td>71</td>
</tr>
<tr>
<td>STAFF TRAINING</td>
<td>61</td>
<td>72</td>
</tr>
<tr>
<td>STRUCTURAL AND ORGANIZATIONAL</td>
<td>70</td>
<td>84</td>
</tr>
</tbody>
</table>


*What gets measured, gets managed.*

-Peter Drucker
Public health agencies rely on surveillance data to plan, prioritize, and evaluate their work. Surveillance data differ from experimental data and from one-time surveys. Surveillance data, rather than local surveys, are used when health officials want to track important health indicators. Health surveillance data are collected over time, using standardized methods, and at specific intervals. Because these data typically are collected by many people, variations in data collection timing and approach are anticipated and accepted because the data are used in broad ways to look at statewide trends, rather than individual behaviors. The data collected by the California Newborn Screening Program (NBS) include breastfeeding surveillance data that help policy makers monitor how breastfeeding rates change over many years and within different target groups in a state with nearly 250 maternity hospitals (Figure 3).

In 2015, nearly 94% of California babies began life breastfeeding, yet about 27% of those babies were given formula before they were discharged from the hospital, typically 24 to 48 hours after birth. Although it is expected that some infants in each hospital will have medical conditions that require supplementation with formula, in 17 California hospitals, more than 50% of breastfed infants are given supplements during the short hospital stay. In other hospitals, supplementation rates among healthy breastfed infants are quite low. While disparities remain, changes in hospital policies and practices have resulted in increased exclusive breastfeeding rates among all California women. From 2010 to 2015, exclusive in-hospital breastfeeding rates among all California women rose by 12% (representing over 50,000 mothers). The highest increases occurred among Hispanic (15.1%) and African-American (11.8%) mothers.

Differences in breastfeeding rates have persisted in different parts of the state, with the highest exclusive breastfeeding rates found among hospitals in the northern part of the state, particularly in mountain and coastal communities. The lowest exclusive breastfeeding rates occur in the Central Valley and in southern California. However, ongoing efforts have resulted in dramatic increases in counties with historic low rates (Figure 4).

Our ability to do great things with data will make a real difference in every aspect of our lives.

-Jennifer Pahlka
Increased Breastfeeding Rates Beyond the Hospital Stay: California WIC

Policy improvements in California hospitals have resulted in greater numbers of women throughout the state still breastfeeding exclusively as they leave the hospital. Accordingly, the California Department of Public Health WIC Division has expanded breastfeeding support services, outreach, and education to meet the needs of participants. While the percentage of participants who self-report that they are “fully breastfeeding” varies widely, rates have increased 2% to 5% over the last 5 years among participants in nearly all regions.\(^{26}\) For many low-income women, WIC is the only source of breastfeeding support once they have left the hospital.\(^{27}\) However, WIC cannot act alone. Greater support is needed among medical organizations and employers. Data are needed from these environments to promote and monitor institutional change.

Data are Needed to Build on California’s In-hospital Success

Once mothers leave the hospital, both data collection and access to breastfeeding support vary widely. Figure 5 lists 12 examples of surveys and organizations that collect infant feeding data, nationally or only in California. Because of differences in the way questions about infant feeding are asked, the timing of those questions, and the populations chosen, it is not possible to meaningfully compare the outcomes obtained by one source to another. As an example, according to the NIS, 88.3% of women initiated breastfeeding in California based on their telephone survey of 335 women in the state (out of nearly 15,000 women surveyed nationwide) in 2012.\(^{12}\) During the same year, the rate of “any breastfeeding” in California based on Newborn Screening data (including 433,828 women), was 92.2%.\(^{25}\) An even greater difference was seen in 2012 between data sources for the exclusive breastfeeding rates at 3 months. According to the NIS, the rate was 56%.\(^{12}\) The rate from the Maternal Infant Health Assessment (based on a sample of about 7000 women) was 26.5%.\(^{28}\) The lack of consistent and comparable post-discharge data makes it more difficult for advocates and policy makers to identify best practices and track trends. In our large and diverse state, timely data are needed to ensure that the positive impact of changing hospital policies is not diminished by decision-makers’ lack of information about local and regional needs of new mothers returning home.

Figure 5: Examples of Breastfeeding Data Sources

<table>
<thead>
<tr>
<th>National Data</th>
<th>California/Programmatic Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>- National Immunization Survey(^{12})</td>
<td>- CDPH WIC Division(^{26})</td>
</tr>
<tr>
<td>- Infant Feeding Practices II (and follow-up)(^{29})</td>
<td>- Maternal Infant Health Assessment(^{28})</td>
</tr>
<tr>
<td>- National Health and Nutrition Survey (NHANES)(^{30})</td>
<td>- California Perinatal Quality Care Collaborative(^{34})</td>
</tr>
<tr>
<td>- Joint Commission - National Quality Measures - Perinatal Core Measures(^{31})</td>
<td>- CDPH Genetic Disease Branch – Newborn Screening Program(^{26})</td>
</tr>
<tr>
<td>- Early Head Start(^{32})</td>
<td>- Comprehensive Perinatal Services Program(^{35})</td>
</tr>
<tr>
<td>- WIC Infant and Toddler Feeding Practices Survey 2(^{33})</td>
<td>- Black Infant Health (BIH)(^{36})</td>
</tr>
</tbody>
</table>

A Policy Update on California Breastfeeding and Hospital Performance
The term “collective impact” refers to long-term commitments from institutions, advocates and community organizations to work together toward solving complex problems. Strategies developed and implemented using collective impact methodology often focus on changes across sectors described in the Socio-Ecological model. Figure 6 represents how the Socio-Ecological Model may be applied to breastfeeding support. To increase breastfeeding exclusivity and duration, mothers and infants need support from providers, family, friends, workplaces, and the broader society around them.

Collective impact efforts require 5 elements:

1. A common agenda: Using the available evidence, partner organizations can clarify issues and create a shared vision for steps needed to address the issues. Example: Using local data, a regional breastfeeding coalition determines that lack of workplace support is a primary barrier to increasing breastfeeding duration and that working with major employers will create momentum for other businesses to make needed change.

2. Mutually reinforcing activities: Partner organizations create a plan for interventions, programs, and actions that will work synergistically toward solving major issues. Example: Using data from supervisors and employees in larger organizations, coalition members, health plans, and advocates develop a strategy to educate managers about breastfeeding.

3. Continuous communication: Partner organizations create schedules and systems for meaningful communication to share challenges, successes and solutions. Example: Participating organizations are assigned major employers to target for education and support. Group members meet regularly with other groups to address successes and challenges they encounter.

4. A support organization: Partner organizations identify or create a core organization with staff and resources to handle the administrative and logistical details associated with coordinating multiple organizations and activities. Example: A non-profit coalition is formed to supply staff and services to ensure the sustainability of the collective effort.

5. Shared data: Partner organizations identify measures and standardize data collection methods to insure that comparable outcomes and process data are generated. These data are then used to understand which interventions are important contributors to group success and to monitor outcomes. Example: Employers’ policies and practices are assessed and documented in a standardized way; data related to employees’ breastfeeding duration and exclusivity are collected using common methodologies.

While collective impact describes methodologies and resources used by organizations to create synergistic impacts on many issues, the model can be applied to efforts to increase breastfeeding rates among all California women. If medical organizations, public health organizations, and insurers agreed upon measures and methodologies, breastfeeding data could be used to identify the policies and practices that increase duration and exclusivity.
Most of the nearly 250 maternity hospitals in California continue to make changes to improve breastfeeding support for the mothers and infants they serve. As a result, statewide increases in in-hospital exclusive breastfeeding rates have benefited families throughout the state, including those at greatest risk for poor health outcomes. Public health agencies and community partners must work together to ensure that staff, administrators, policy-makers, and advocates have the consistent and comparable data on breastfeeding exclusivity and duration needed to expand their work to better support breastfeeding families.

1. The California Department of Public Health (CDPH) must continue to make in-hospital breastfeeding rates available to the public, to continue to drive quality improvement within hospital systems and to monitor the effects of legislation requiring all hospitals to adopt policies aligned with the 10 Steps to Successful Breastfeeding by 2025.

2. Surveillance systems should be developed to obtain consistent and comparable data on breastfeeding duration and exclusivity throughout the infant’s first year of life. These data should be made available to the public at a local and regional level annually.

3. The Department of Health Care Services, Insurance and Managed Health Care should work with CDPH and state epidemiologists to identify breastfeeding data that health plans should be required to collect and report on an annual basis.

4. Whenever possible, data obtained from publicly funded breastfeeding-related evaluation and quality improvement projects should be disseminated to expand the use of best practices.

5. Electronic medical records (EMR) should track breastfeeding rates and infant-feeding data.

6. Relevant data from multiple sectors should be used to reduce health disparities among women and children across the state.

7. Resources and coordinated data systems are needed to ensure that breastfeeding support at WIC is better integrated with health systems serving low-income families.

8. WIC should continue to partner with other state and local agencies to assess needs and implement infant-feeding interventions for all mothers and infants.

9. Data should be collected to track process indicators to monitor implementation outcomes related to lactation accommodation, school-based support, policy changes in pediatric environments, and breastfeeding training for child care providers.

10. Policy makers and advocates should use data to guide and implement collective impact initiatives to promote optimal infant-feeding practices into the first year and beyond.
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Photograph Sources: United States Breastfeeding Coalition, R. Gonzalez-Dow, Istockphoto.com