Assessment and Monitoring of Breastfeeding-Related Maternity Care Practices in Intrapartum Care Facilities in the United States and Territories

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Summary Report of mPINC Findings

2007-2015

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Executive Summary

Prior to 2007, specific practices in maternity care facilities had been identified as key determinants of breastfeeding but no accurate estimates of the prevalence or distribution of these practices existed across the United States (U.S.). Effective strategies to address problems in maternity care practices could not be developed without this information. In 2007, the Centers for Disease Control and Prevention (CDC) first conducted the survey described in ICR 0920-0743, *Assessment and Monitoring of Breastfeeding-Related Maternity Care Practices in Intrapartum Facilities in the United States and Territories*. This survey came to be known as the mPINC survey, for *Maternity Practices in Infant Nutrition and Care*.

Since 2007, every hospital and free-standing birth center in the U.S. and territories that routinely provided maternity care has been eligible to participate in the biennial mPINC survey; 82–83% (n=2582–2742) of facilities have responded to each survey cycle. Overall scores, which indicate implementation of evidence-based maternity care practices in the U.S., are increasing from 63/100 in 2007 to 79/100 in 2015. Scores have also increased consistently across each of the 7 dimensions of care. While these improvements are encouraging, the mPINC data illustrate that many U.S. hospitals continue to use practices that are inconsistent with evidence-based, best-practice standards and do not support breastfeeding. In 2015, only 11.8% of all maternity care facilities were implementing the ideal standard on 9–10 practices (out of 10) described by the World Health Organization and UNICEF as the Ten Steps to Successful Breastfeeding.

Since 2007, CDC has sent more than 75,000 customized reports with hospital-specific data to leadership staff at each respondent facility. These Benchmark Reports provide empiric information about the survey as well as the facility's detailed survey data benchmarked against peer facilities by state, birth census, and among all survey respondents.

Aggregate national data are published on CDC's website as are state-specific reports. Additionally, the state-specific reports are emailed to the state health departments and other state-based stakeholders. State partners have used their states' data for quality improvement efforts. The mPINC data have also been used for multiple peer-reviewed publications. Of note, data from the mPINC surveys were the basis of two CDC Vital Signs reports: "Hospital Support for Breastfeeding: Preventing Obesity Begins in Hospitals" and "Improvements in Maternity Care Policies and Practices That Support Breastfeeding – United States, 2007-2013."

Continuation of the mPINC survey will allow for monitoring trends in evidence-based maternity care and identification of areas in need of improvement, thus enabling clinicians, hospitals, and public health leaders to carry out their work to protect and support mothers' and babies' health nationwide.

Background

Health professionals recommend exclusive breastfeeding (breast milk and any necessary medications or nutrients, but no other solids or liquids) for about the first 6 months of life, and continued breastfeeding for at least 12 months.[1] Breastfeeding is a critical preventive health measure for the newborn, reducing the risk of infections and Sudden Infant Death Syndrome (SIDS) in infancy and of obesity and diabetes later in life.[2-4] Additionally, the benefits of breastfeeding are far-reaching, including reduced risk of cardio-metabolic disease and breast and ovarian cancers for the mother and cost savings for employers and healthcare providers.[4-6] Approximately 81% of mothers initiate breastfeeding but by 7 days of life approximately 20% of those infants have already been given infant formula.[7]

For women who plan to breastfeed, experiences and support during the first hours and days after birth influence their later ability to continue breastfeeding. Improving hospital practices to support breastfeeding is a national priority. In 2011, Surgeon General Regina Benjamin included "ensuring that maternity care practices throughout the United States are fully supportive of breastfeeding" as a specific action of the *Surgeon General's Call to Action to Support Breastfeeding*.[6] Improving hospital maternity care to support breastfeeding is also a recommendation of the *National Prevention Strategy* and is a *Healthy People 2020* objective.[8, 9]

Assessing and Monitoring Maternity Care Practices across the United States

Before 2007 there was no reliable way to estimate the extent to which U.S. birth facilities were implementing evidence-based maternity care supportive of breastfeeding. State health departments, health care providers, and infant feeding experts called on CDC to address this need.

In 2007, CDC conducted the first national *Maternity Practices in Infant Nutrition and Care Survey*, often called the "mPINC survey" for short. The survey collected information on facility characteristics, maternity care policies, staff training on breastfeeding instruction, infant feeding practices, breastfeeding management and support, and facility discharge care.

The assessment was designed to provide ongoing monitoring of maternity care practices in the U.S. The selected survey methodology was the outcome of detailed input and collaboration with external experts representing the diverse stakeholder groups for whom the information is most important. The experts represented health care providers and administrators, state health departments, and infant feeding experts and researchers.

Stakeholders unanimously urged CDC to survey every facility in the U.S. and territories that routinely provides maternity care, regardless of size, ownership, payer status, or other selection criteria. The resulting census design allows CDC to provide state-specific data and to create facility-level reports utilizing individual facilities' data benchmarked against facilities of similar size, facilities within the same state, and all facilities participating in the survey.

The mPINC survey was sent to every hospital (n=2917 in 2015) and free-standing birth center (n=254 in 2015) in the U.S. and territories that routinely provided maternity care and agreed to survey participation. Eligibility was determined with a screening telephone call to verify the facility had registered maternity beds.

CDC Survey Documents National Need for Action

Fully 82–83% (n=2582–2742) of all hospitals and birth centers responded to the CDC mPINC survey in each of the five cycles that the survey has been administered. These facilities vary broadly by size and type. Facility types include urban/rural; private/public/government/military; teaching/non-teaching; and serving economically disadvantaged/advantaged populations.

To facilitate reporting on the findings, results were scored on a 0–100 scale. Each facility's mPINC Total Score comprised the mean of their score on the following dimensions of care:

- Labor and Delivery Care
- Feeding of Breastfed Infants
- Breastfeeding Assistance
- Contact Between Mother and Infant
- Facility Discharge Care
- Staff Training
- Structural and Organizational Aspects of Care

Facility mean Total and subscale scores vary by facility location, type, and size. Across survey years, hospitals had lower Total scores than birth centers and larger facilities had higher Total scores than smaller facilities. Scores varied widely across states, ranging from 60 in Mississippi to 96 in Rhode Island in 2015. The states in the Pacific and New England census regions had the highest scores while states in the West and East South Central census regions had the lowest. See the following pages for Total and subscale scores from 2007-2015 (Figure 1) and the distribution of state scores in 2015 (Table 1).

Figure 1. Mean total and dimensions of care mPINC scores by survey year, 2007-2015

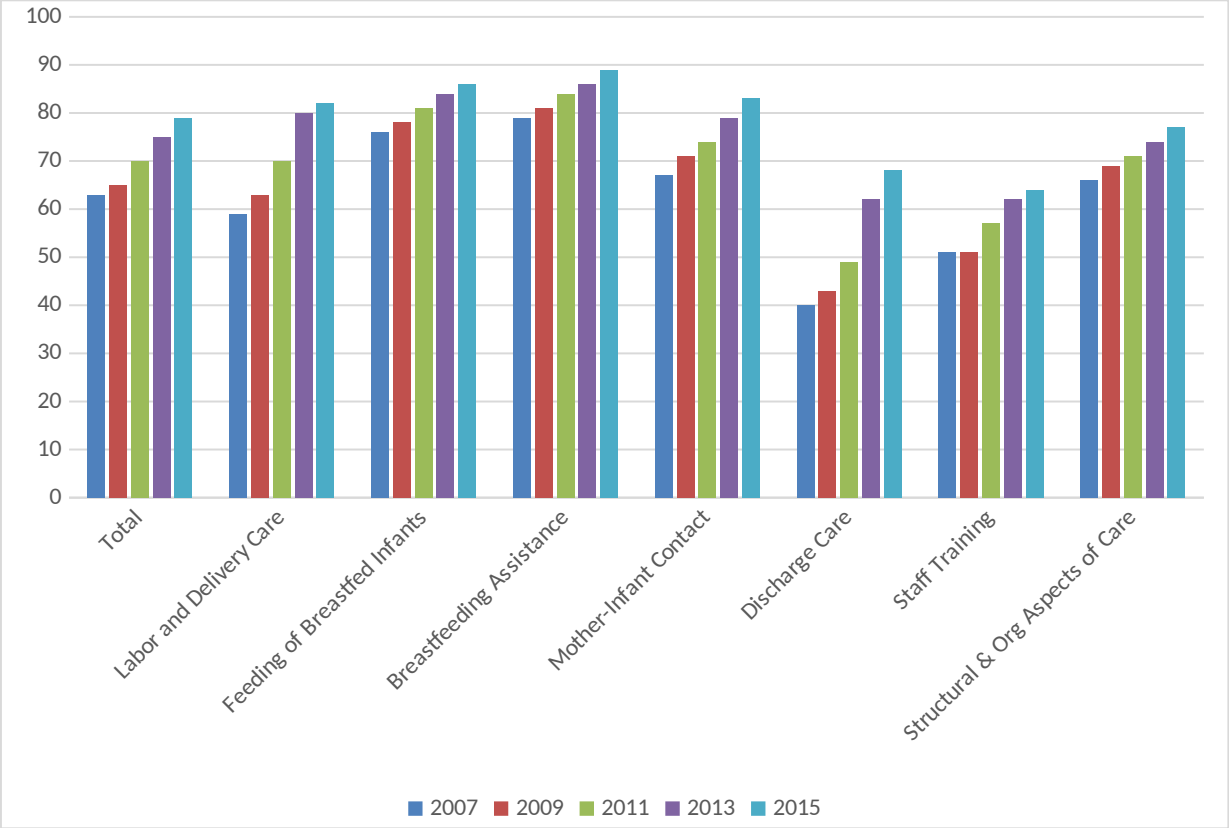

Table 1: Mean total and dimensions of care 2015 mPINC scores by state/territory

	Total score	Labor & delivery care	Feeding of breastfed infant	Breast-feeding assistance	Mother/ infant contact	Discharge care	Staff training	Structural & Organizational Aspects
All States	79	85	86	89	83	68	64	77
Alaska	82	90	92	88	91	88	58	67
Alabama	72	76	81	83	69	52	69	75
Arkansas	67	68	74	80	71	52	57	63
Arizona	79	86	87	88	92	67	56	74
California	85	90	89	93	92	74	72	85
Colorado	85	91	90	93	93	74	70	82
Connecticut	83	91	89	92	83	66	71	86
District of Columbia	82	76	78	85	86	83	79	90
Delaware	90	91	96	99	90	80	77	97
Florida	80	86	86	89	90	65	65	77
Georgia	75	80	86	87	79	61	65	70
Hawaii	80	89	89	91	85	69	62	75
Iowa	75	85	88	88	75	64	55	72
Idaho	78	90	90	89	89	63	50	73
Illinois	81	85	84	90	86	65	75	80
Indiana	80	88	87	90	80	70	66	79
Island Territories	72	71	83	86	84	65	48	69
Kansas	76	88	90	83	86	69	47	66
Kentucky	73	88	79	88	71	52	63	72
Louisiana	76	80	83	89	72	66	65	77
Massachusetts	87	94	90	95	88	82	74	86
Maryland	82	86	86	90	86	74	71	84
Maine	84	94	91	90	85	85	63	76
Michigan	78	86	86	86	85	67	60	76
Minnesota	82	91	88	90	85	85	56	81
Missouri	75	87	87	87	79	57	56	74
Mississippi	60	65	76	81	62	36	42	60
Montana	82	90	91	88	92	71	65	74
North Carolina	78	80	82	89	84	68	66	76
North Dakota	73	84	85	85	72	60	51	75
Nebraska	71	83	87	83	84	57	35	68
New Hampshire	90	94	95	94	89	91	78	86
New Jersey	83	89	85	94	77	68	81	85
New Mexico	81	88	86	90	95	75	58	72
Nevada	75	72	86	85	84	59	64	75
New York	82	83	83	91	78	81	73	85
Ohio	80	85	86	88	79	70	69	81
Oklahoma	78	85	87	91	86	62	68	70
Oregon	86	94	95	94	95	77	68	82
Pennsylvania	78	80	89	88	77	68	65	77
Puerto Rico	69	67	68	81	65	67	73	62
Rhode Island	96	98	97	100	96	98	91	95
South Carolina	78	82	85	88	78	71	66	78
South Dakota	74	83	84	86	81	55	51	74
Tennessee	72	79	80	85	73	51	63	74
Texas	77	81	84	87	85	68	65	71
Utah	75	86	89	86	82	59	52	70
Virginia	80	87	89	92	80	68	69	77
Vermont	88	96	93	94	91	90	76	79
Washington	83	91	91	91	96	75	57	78
Wisconsin	82	90	92	92	83	77	62	80
West Virginia	73	84	81	83	77	72	46	71
Wyoming	77	92	91	87	91	70	47	62

*State abbreviation 'IT' is Island Territories, and includes American Samoa, Guam, Northern Mariana Islands, and US Virgin Islands.

Maternity Care Practices Vary Widely

Scores on the 7 dimensions of care ranged from 40 to 79 in 2007 and from 64 to 89 in 2015.

Discharge support is inadequate:	Progress has been made in reducing distribution of formula **marketing samples** to breastfeeding mothers, from 73% in 2007 to 21% in 2015, but this practice is **still pervasive** in many geographic areas.
Staff training is inconsistent:	**Fewer than half** of facilities and only **one-tenth of small** facilities **provide ≥8 hours of training** to new staff.
Better policies are needed:	Although breastfeeding **policies** commonly exist in hospitals, most **are limited in scope**. In 2015, only 32% of hospitals had a model breastfeeding policy.
Unnecessary separation is common:	Progress has been made in reducing **separation** of mothers and infants, which interferes with establishing breastfeeding, but many infants are still **not staying with their mothers** at least 23 hours a day as recommended.
Feeding supplementation is excessive:	**One-fifth** of all facilities routinely **supplement** normal, healthy, full-term **breastfed infants**.

Quality Assessment and Reporting Supports Local Autonomy

One of the goals of the mPINC survey is to provide data to empower stakeholders to improve maternity care practices in the way that best meets their needs. Diverse reporting maximizes data utility for hospitals and birth centers, clinical health professionals, public health professionals, advocacy groups, and ultimately mothers and babies.

Interest in the survey is unprecedented:

- The response rate has consistently remained >80%.
- Respondents were interested in the survey, eager to participate, and appreciated CDC providing them with urgently needed information.
- National organizations and experts that have been underrepresented in the work to improve maternity care practices related to breastfeeding have sought out more information about the mPINC survey:
  - The Institute for Healthcare Improvement (IHI)
  - The Indian Health Service (IHS)
  - The American Hospital Association (AHA)
  - The National Quality Forum (NQF)
  - The National Association of County and City Health Officials (NACCHO)
  - The American Medical Association (AMA)

The census design is essential:

- Assessing *all* facilities allows for authentic, localized comparisons between different states, regions, and types of facilities.
- Universal reporting allows CDC to provide meaningful data back to facilities and states through a formalized benchmarking process.

Data are used by multiple stakeholders::

- Independent researchers use the data to answer their research questions.
- Many state health departments use their data to improve maternity care within their states. For example, the California Department of Health has used the mPINC data to create California regional Benchmark Reports to provide Regional Perinatal Programs of California Coordinators and other breastfeeding stakeholders with local data to facilitate their work in improving breastfeeding support. http://www.cdph.ca.gov/data/statistics/Pages/CaliforniamPINCSurveyData.aspx

- Baby-Friendly USA, the organization responsible for overseeing the World Health Organization/UNICEF Baby-Friendly Hospital Initiative in the U.S., uses mPINC scores as a part of helping hospitals identify areas for improvement and achieve Baby-Friendly designation.

CDC Provides Quality Improvement Action Tools

CDC maintains a set of coordinated, multifaceted activities to generate better awareness and interest in the issues assessed in the mPINC survey.

- mPINC scores are incorporated into the annual CDC Breastfeeding Report Card that highlights policy and environmental support for breastfeeding at the state level. http://www.cdc.gov/breastfeeding/data/reportcard.htm

- CDC maintains a dedicated web site www.cdc.gov/mpinc to facilitate access to information about the survey and findings for the broader public. This has provided a venue for CDC to efficiently update and expand information sharing efforts.

- CDC maintains a dedicated email box (mpinc@cdc.gov) to respond to facility and public inquiries about the mPINC survey. Typical inquiries include facilities looking for their current or previous Benchmark Reports and questions about survey methodology.

Hospital-specific Benchmark Reports

Since 2007 CDC has mailed more than 75,000 individualized reports to facilities that responded to the survey. These were created to help hospital leadership better understand the areas in most need in their facility, provide data and scientific rationale for each area, and enable them to develop quality improvement activities on issues in their facility. The Benchmark Reports also provides an opportunity for CDC to thank facilities for participating in the survey.

State-specific Reports

Data from the survey are also used to create customized state-specific reports for key decision-makers (i.e., state health departments, health professional and hospital administrator organizations, medical boards, etc.). These reports are structured specifically to respond to the challenges this diverse audience has identified and meet their unique needs in improving care at the state level.

National Web Tables

Aggregated national data are posted on CDC's website. Data are presented by hospital characteristic (e.g., size, teaching status) and by state.

The Need for Continued Assessment and Reporting

CDC's mPINC activities underscore the need for regular and continued national assessment and monitoring of hospital infant feeding practices. This demonstrates CDC's responsiveness to the audiences' needs and enables them to maintain quality improvement efforts.

The survey instruments were designed to capture incremental changes that CDC anticipates will be taking place at the hospital level. Most facilities have abundant opportunities to improve the quality of the care they provide to mothers and babies during the maternity stay.

The two-year timeframe for follow-up is ideal because it allows enough time for these changes to be implemented based on feedback from the prior survey, while being close enough to capture progress in changes as they are being made.

Publications and Resources

Publications (select):
Kahin SA, McGurk M, Hansen-Smith H, et al. Key Program Findings and Insights from the Baby-Friendly Hawaii Project. *J Hum Lact.* 2017. DOI: 10.1177/0890334416683675.

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Edwards RA, Phillips BL. Using maternity practices in infant nutrition and care (mPINC) survey results as a catalyst for change. *J Hum Lact*. 2010;26(4):399-404.

DiGirolamo A, Manninen D, Cohen J et al. Breastfeeding-related maternity practices at hospitals and birth centers--United States, 2007. *Morb Mortal Wkly Rep.* 2008;57(23):621-5.

CDC Web Resources:
mPINC Survey: www.cdc.gov/mpinc

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