

# The CDC Maternity Practices in Infant Nutrition and Care (mPINC) Survey: Using Data to Improve Hospital Breastfeeding Support

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**The Indiana Perinatal Hospital Summit:  
Linking Science with Practice  
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# Outline

**Background**

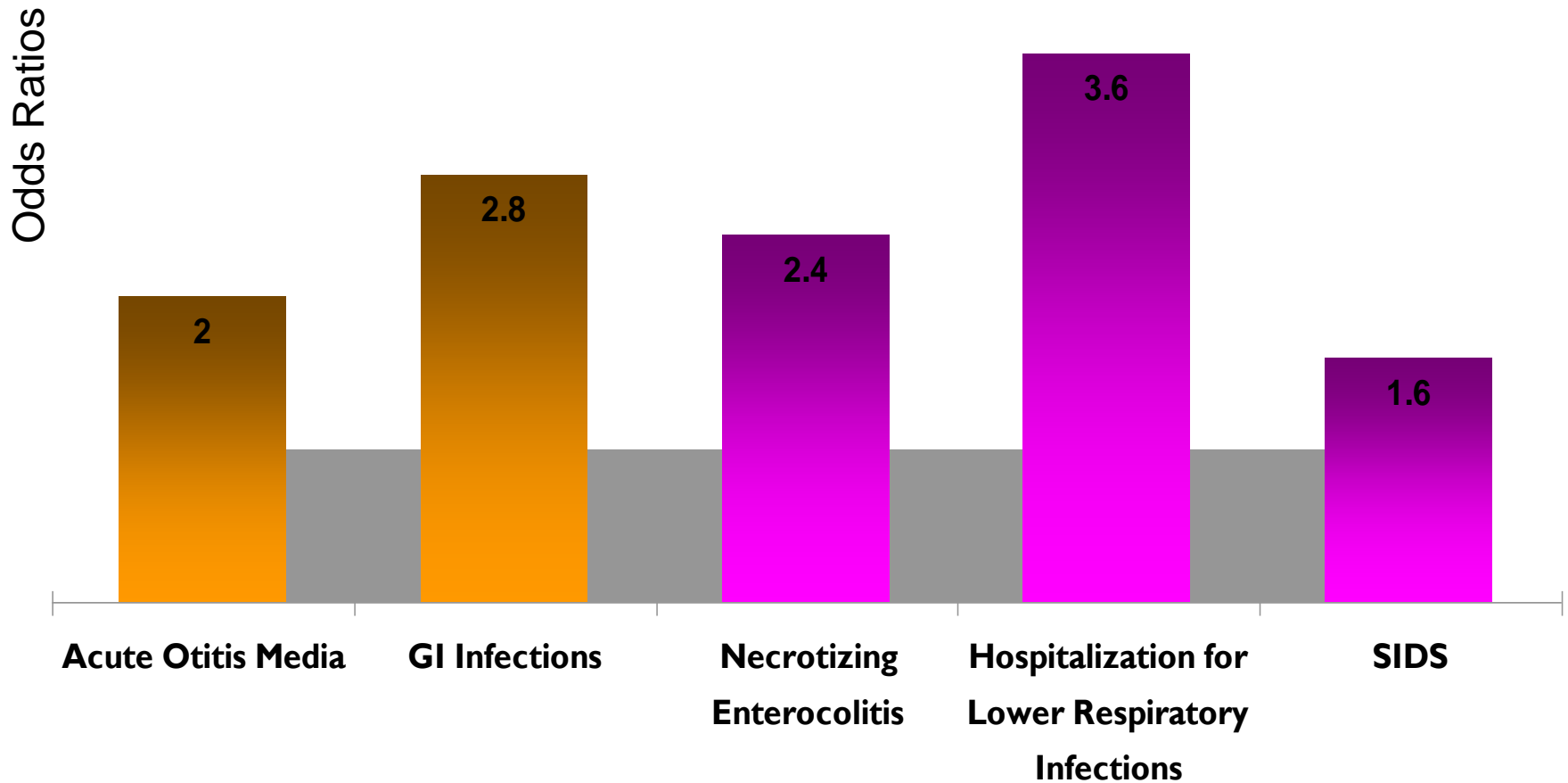
**Survey design**

**Results**

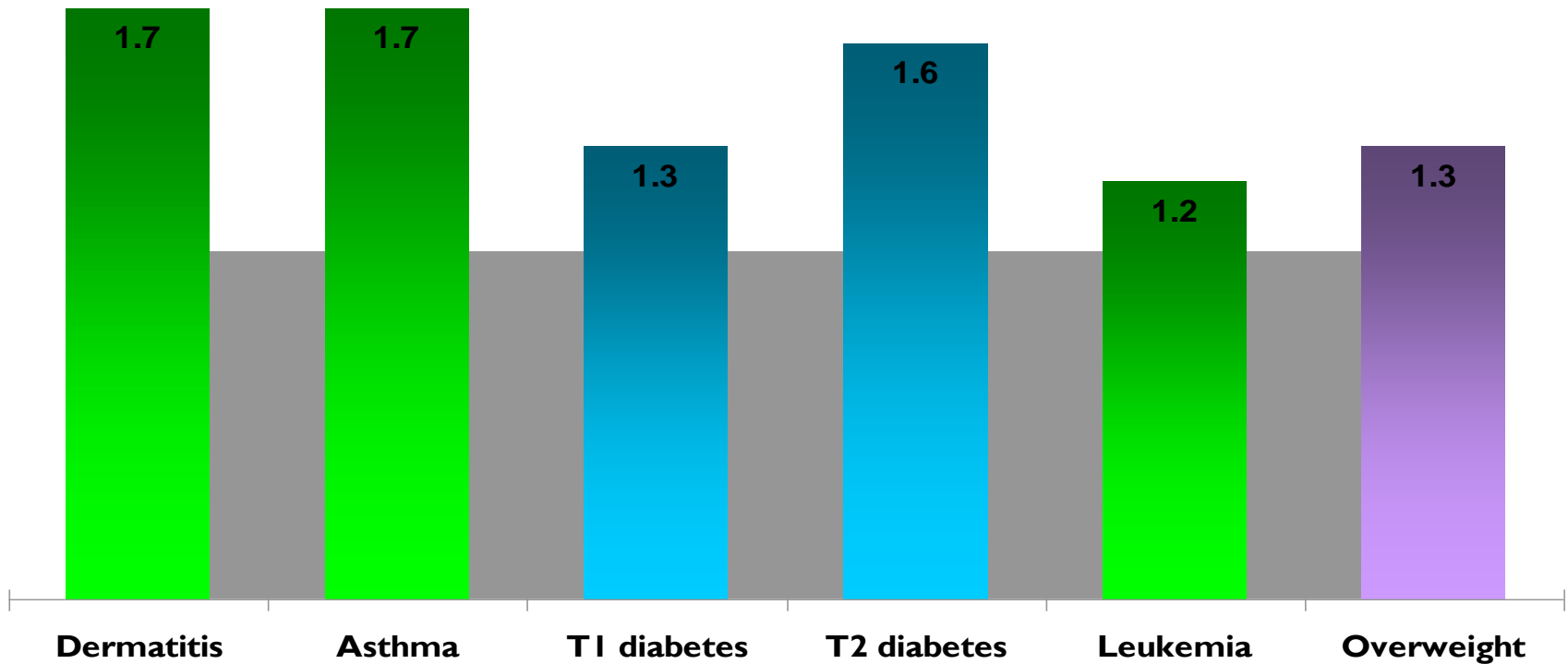
**Facility reports**

**Choosing  
priorities**

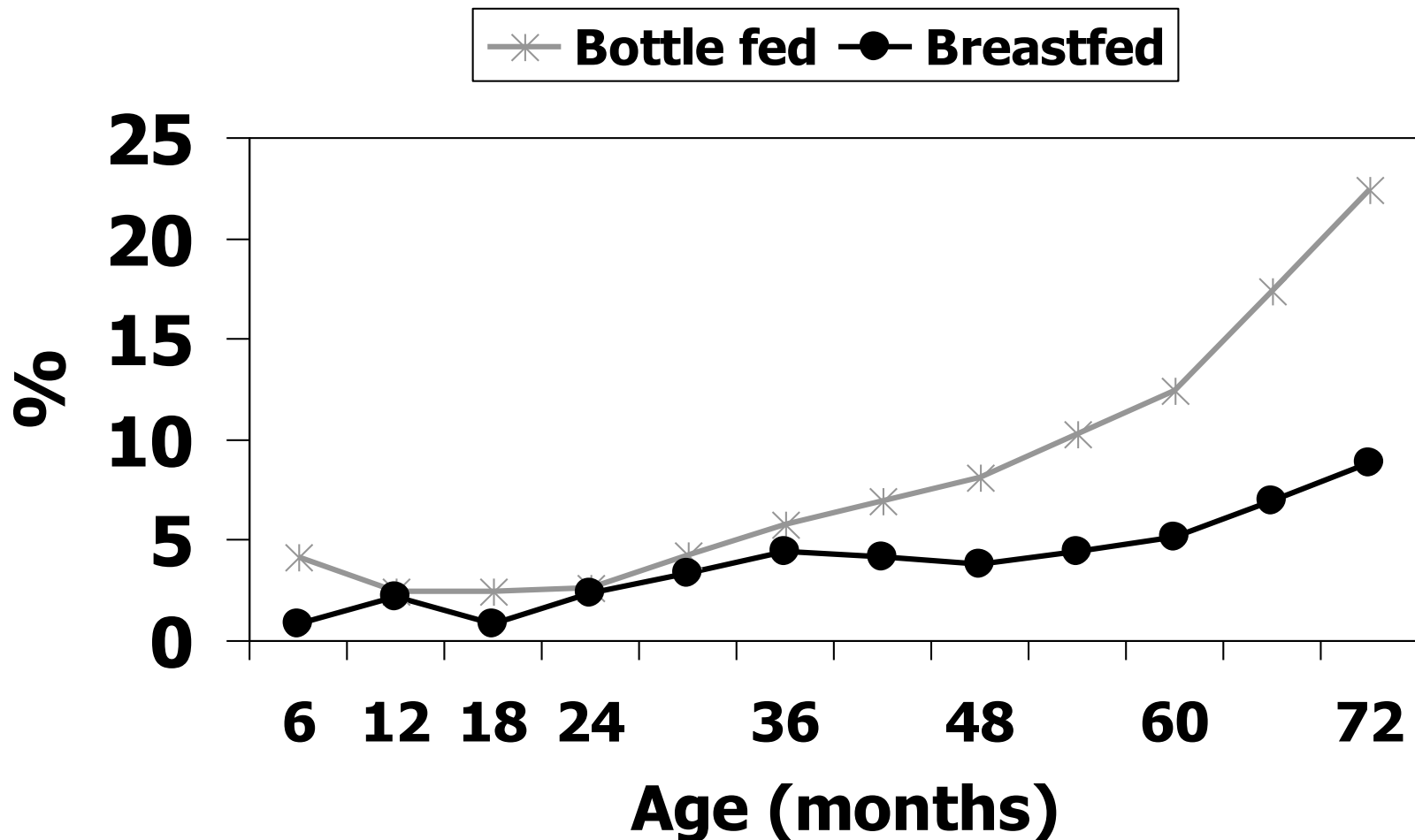
Risk for minor & major health problems is higher among babies who are not breastfed – in developed countries



# Children who were never breastfed or who were breastfed less: Higher risk of long-term health problems – in developed countries



# Prevalence of adiposity, according to triceps skin-fold thickness (>97th percentile)



# Influence of Maternity Practices on Breastfeeding at 8 weeks (%)

(Mothers interviewed at 8 wks postpartum about hospital experiences)

(Murray et al., 2007)

No	Hospital Experience	Yes
66	Breastfeeding in the 1 <sup>st</sup> hour	77
65	No supplemented feeding	81
62	Rooming-in	74
69	No pacifiers	78
64	Phone number given to mothers	75

Approx mean diff = 12%

# Influence of Free Discharge Packs Containing Infant Formula

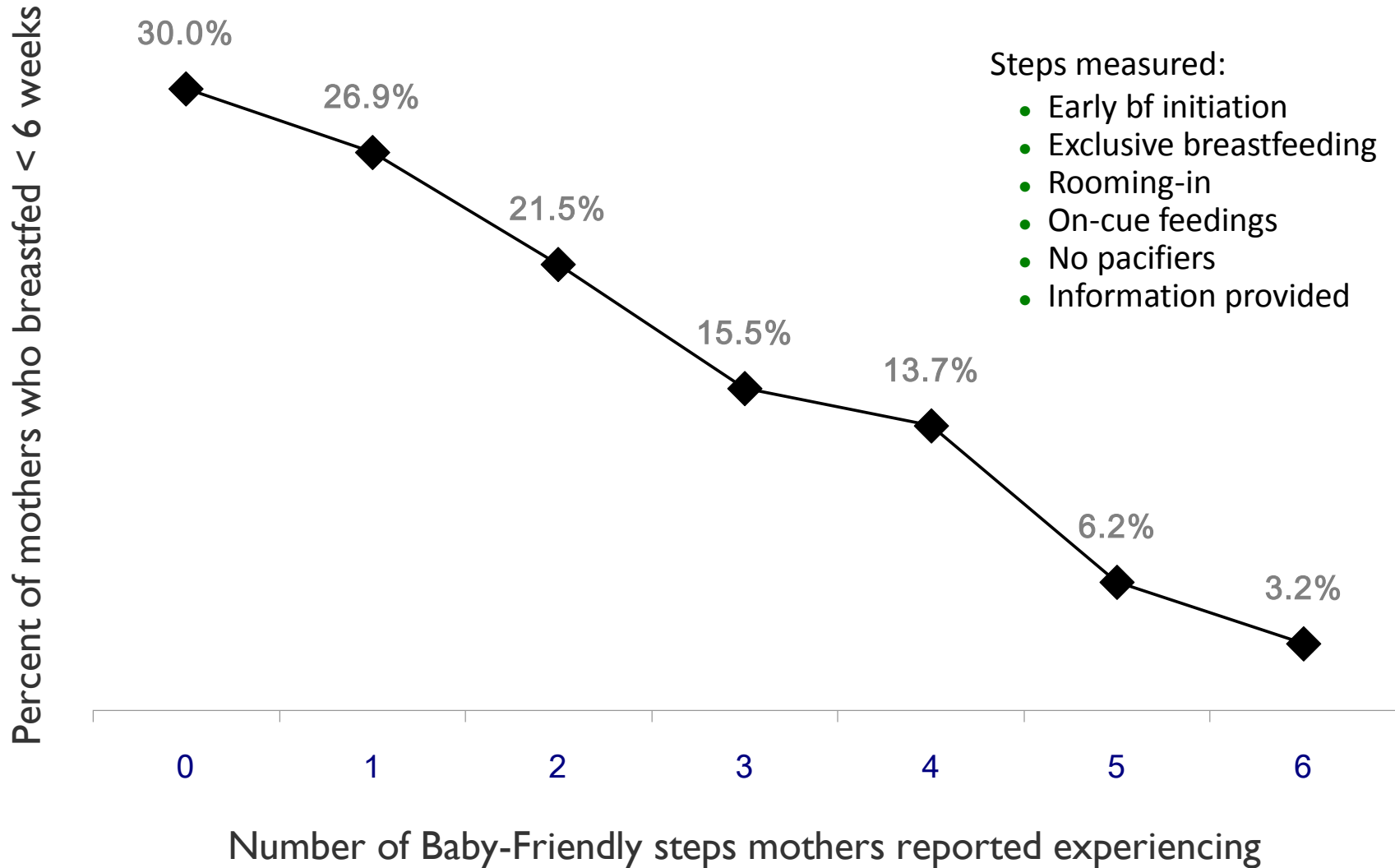
Receiving commercial  
discharge packs increases  
likelihood of supplementing  
within 10 weeks by **39%**.  
(Oregon PRAMS)



# Supplementary feeding in hospital negatively affects breastfeeding

<b>In hospital behaviors</b>	<b>Control</b> ( <i>ad lib</i> supplementing)	<b>Intervention</b> (medically indicated supplementing)
# breastfeeds/24 h on day 2	4.3 feeds	6.4 feeds
# supplem feeds/24 h on day 2	4.8 feeds	1.1 feeds
Volume of breast milk day 2	47 ml	132 ml
Volume of supplement day 2	188 ml	23 ml
Supplementing on day 2	100%	2%
Total volume supp consumed day 2	565 ml	68 ml
Nighttime breastfeeding	2%	98%
<i>Breastfeeding Rates</i>		
Exclusively breastfeeding at 3 mos	57%	75%
Exclusively breastfeeding at 6 mos	12%	22%
Any breastfeeding at 9 mos	47%	62%

# The number of *Baby Friendly* steps in place predicts risk of breastfeeding cessation before 6 weeks – among women intending to breastfeed $\geq 2$ mos





# Maternity Practices in Infant Nutrition and Care

## Survey Design

# Survey Design:

## Biennial national census

- Assessment at national, state, & facility levels
- Assess change across surveys
- Single key informant
- Confidentiality: to encourage response & honesty
- Assess ‘usual practice’
  - Among healthy, term newborns
  - WHO/UNICEF Ten Steps and other practices
- Representative of practices at all types of US maternity facilities

# Implementation

- 2007, 2009
- Key informant identified by phone screening
- Completed survey by mail or online
- ~52 questions
  - Numeric responses (% , #)
  - Checklists
  - Likert scale (e.g. Few, Some, Many, Most)

# Report Scoring

- 36 questions, scored on a 0-100 scale
  - How many mothers are encouraged to hold their healthy, term infants skin-to-skin for at least 30 minutes within 2 hours after delivery for uncomplicated cesarean births?
    - Most (90%+) 100 points
    - Many (50-89%) 70 points
    - Some (10-49%) 30 points
    - Few (0-9%) 0 points
- Questions categorized into 7 subscales
- Subscale scores: average of subscale questions
- Overall score: average of 7 subscale scores

# mPINC Subscales

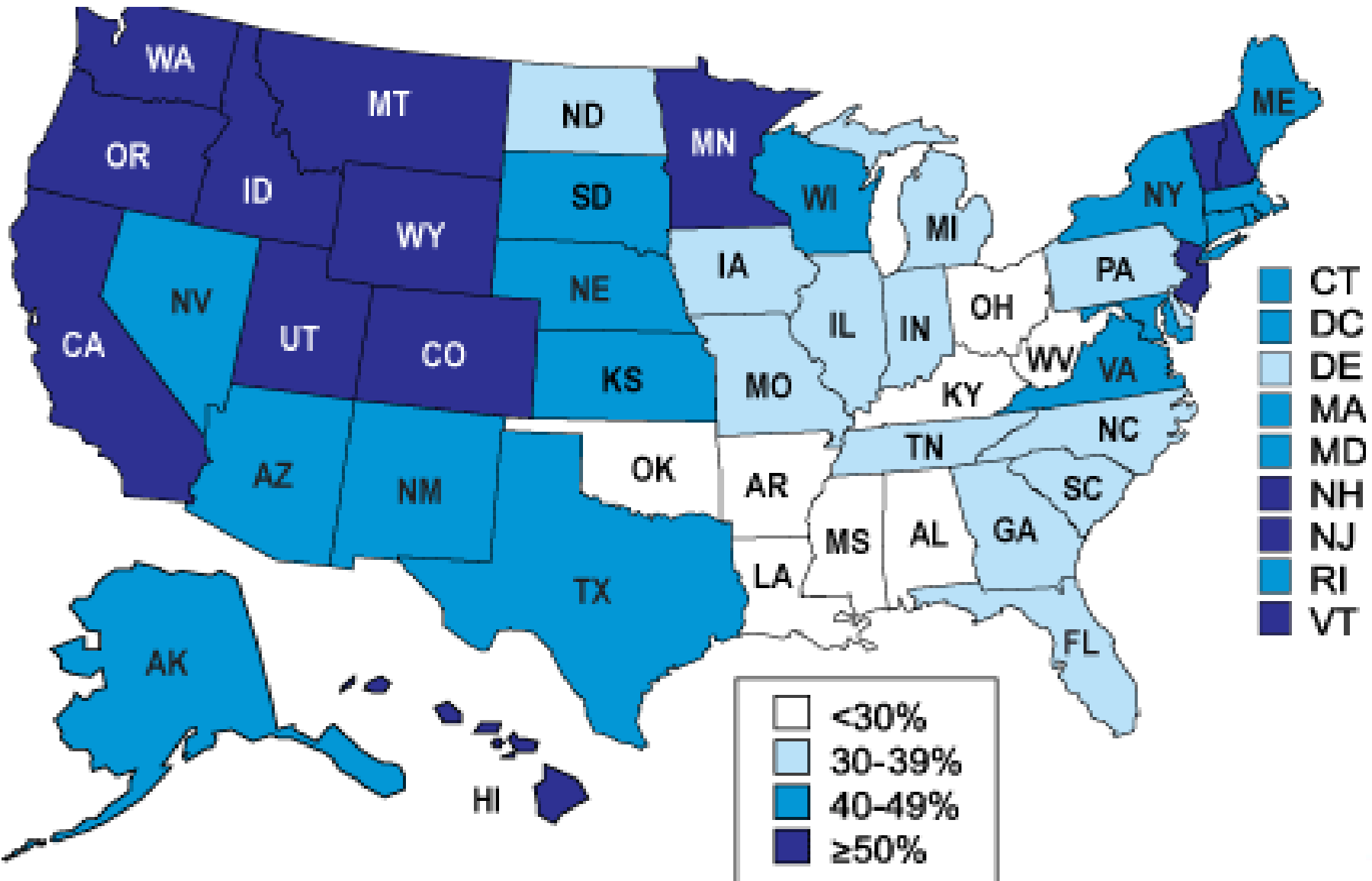
- **Labor and delivery care** (Skin-to-skin, initial breastfeeding)
- **Feeding of breastfed infants** (Prelacteal feeds, supplementation)
- **Breastfeeding assistance** (Documentation, advice/counseling, feeding assessment, pacifiers)
- **Contact between mother and infant** (Early separation, Rooming-in, Reasons for separation)
- **Discharge care** (Follow-up care, Marketing discharge packs)
- **Staff training** (New staff, existing staff, competency assessment)
- **Structural and organizational aspects of care delivery** (Policies, tracking rates, employee support, free formula, prenatal education, lactation coordinator)

# Select Results - 2007 & 2009



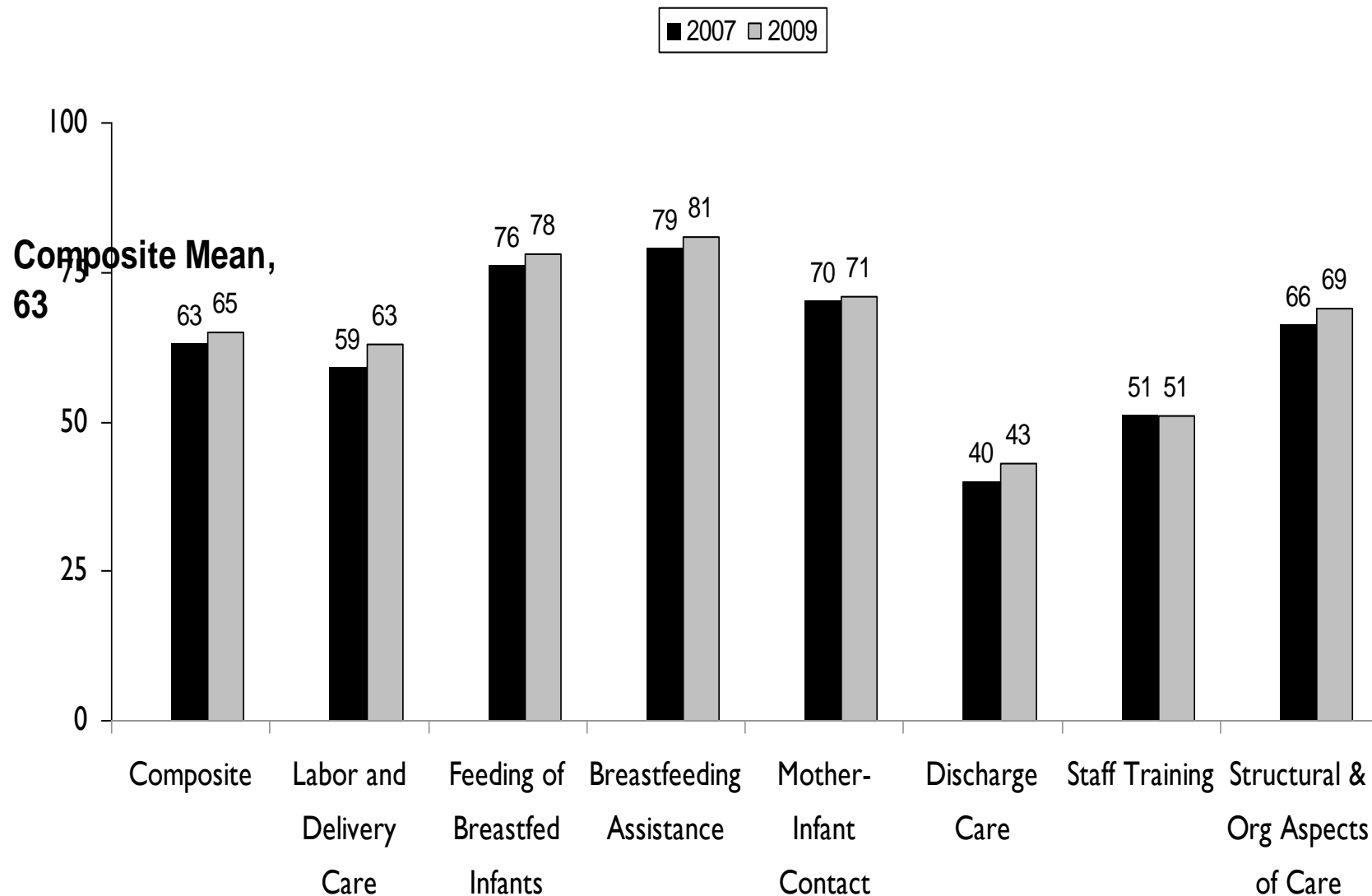


# Percent Breastfeeding at 6 Months Among Children Born in 2006

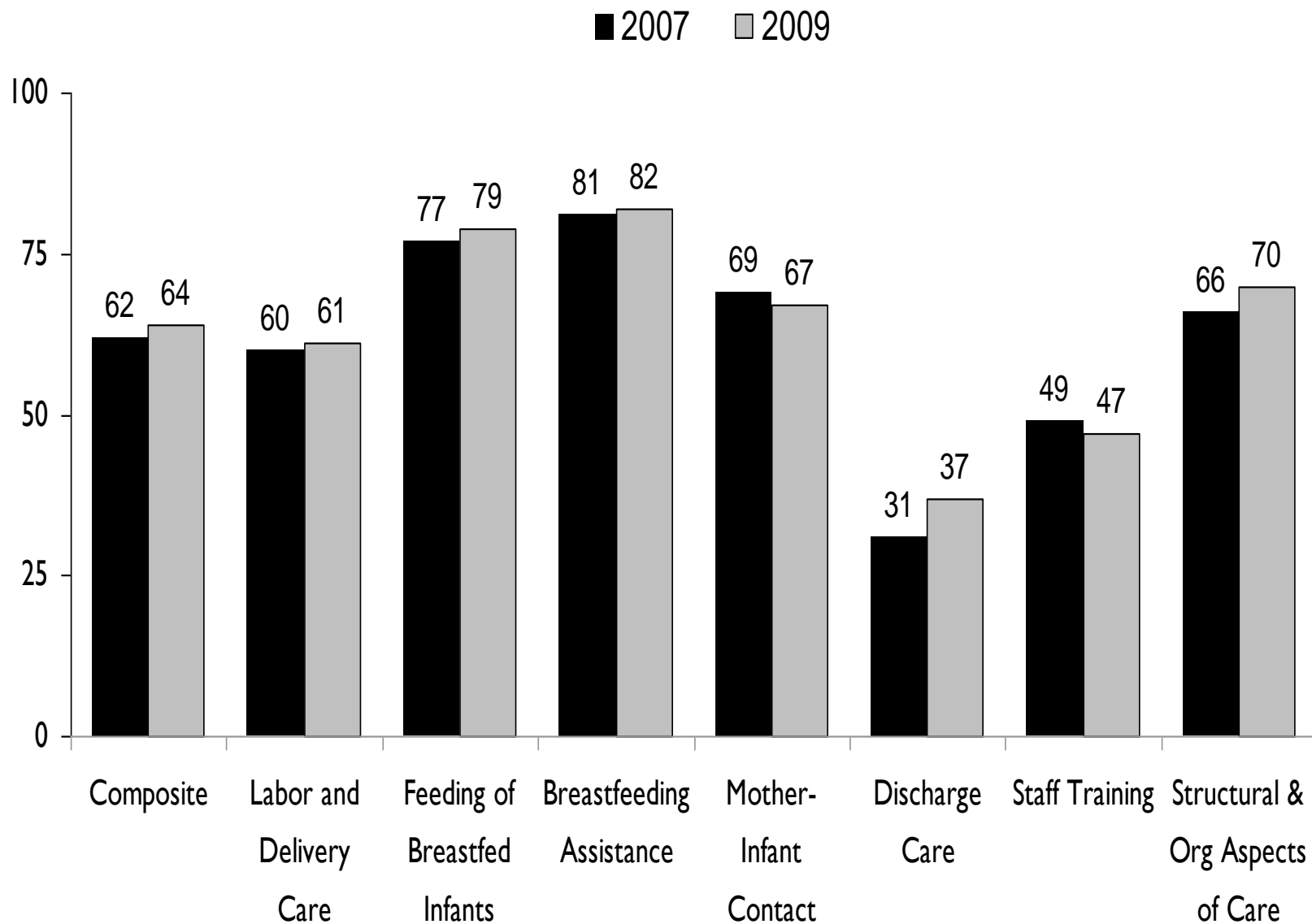


Source: [http://www.cdc.gov/breastfeeding/data/NIS\\_data/2006/map\\_2.htm](http://www.cdc.gov/breastfeeding/data/NIS_data/2006/map_2.htm)

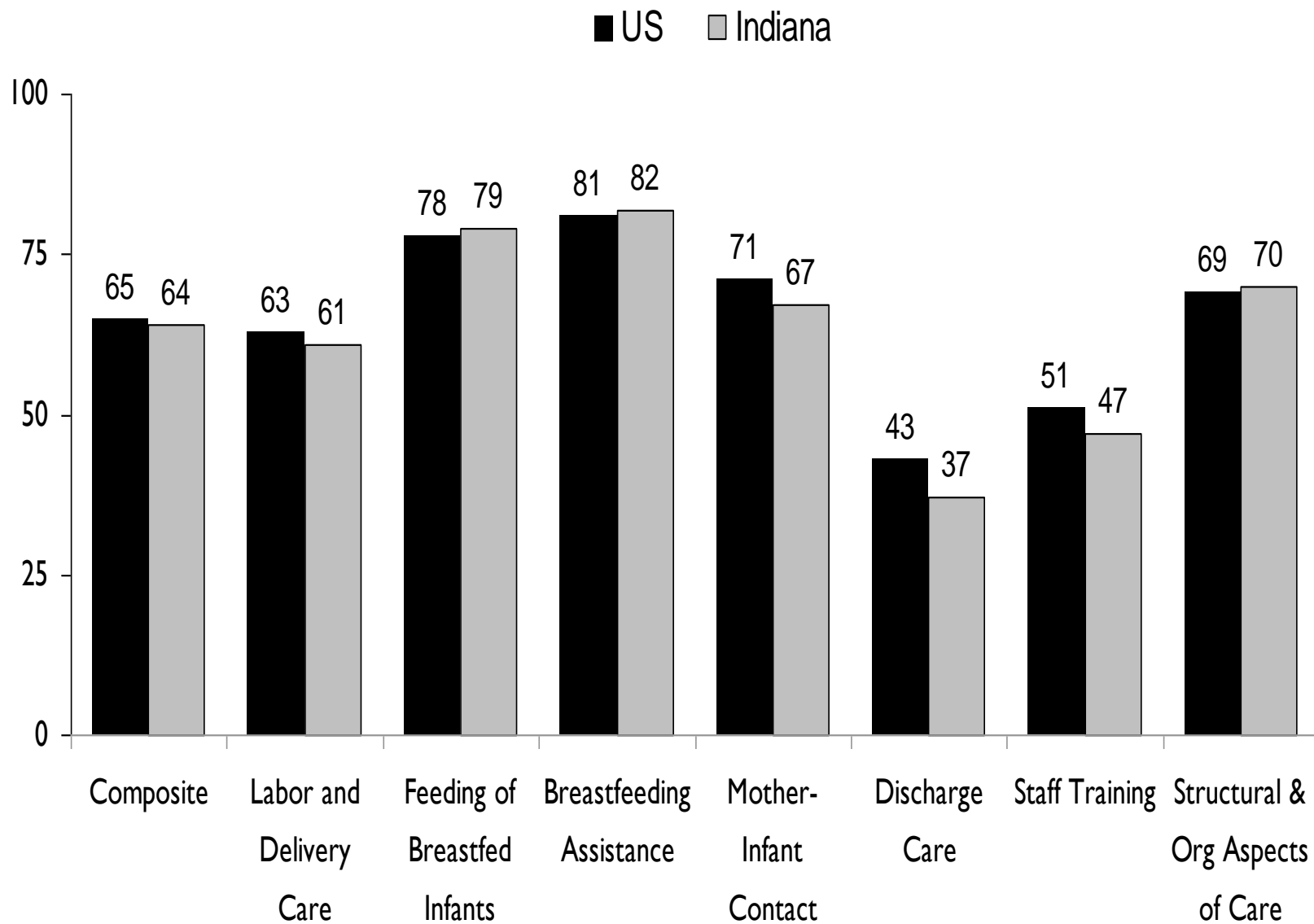
# US mPINC Scores, 2007 & 2009 – Many practices are unsupportive of bf'g



# Indiana mPINC Scores, 2007 & 2009



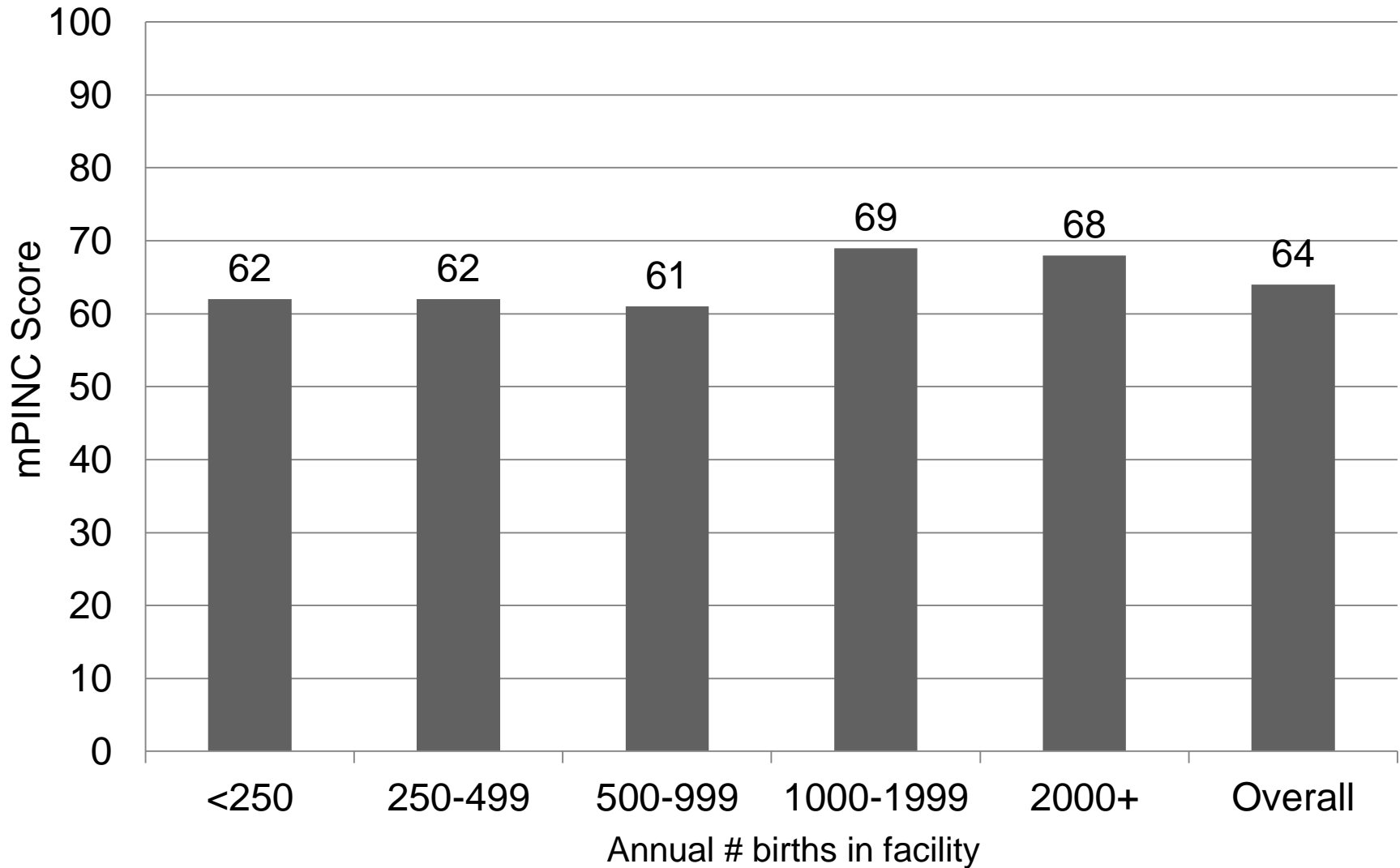
# 2009 mPINC Scores: US & Indiana



Estimate mPINC scores by  
number of births / year?

- Does facility “size” influence  
ability to support  
breastfeeding through  
maternity practices?

# Indiana: mPINC Scores by Number of Annual Births, 2009





# Labor and Delivery Care

# Skin-to-skin contact is not standard of care.

**Most patients experience skin-to-skin contact (vaginal birth)**



Indiana, 39%

**Most patients experience skin-to-skin contact (cesarean birth)**



Indiana, 27%

**Routine infant procedures almost always performed while mother & infant are skin-to-skin**



Indiana, 19%

# Feeding of Breastfed Infants



# Breastfeeding Assistance



# Most mothers receive some kind of breastfeeding instruction.

## Pacifiers are frequently provided.

**Infant feeding decisions are almost always documented**

Indiana, 100%

**Most breastfeeding patients receive breastfeeding advice and instructions**

Indiana, 86%

**Few breastfed infants are provided pacifiers**

Indiana, 21%

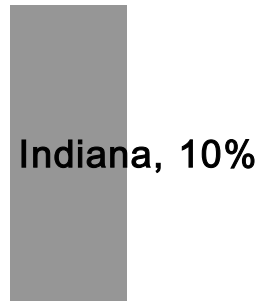
Percent of facilities reporting each practice



# **Mother-Infant Contact**

# 24 h rooming-in is not standard practice at most Indiana facilities

**At least 90% of mothers and infants room together at least 23h/day**

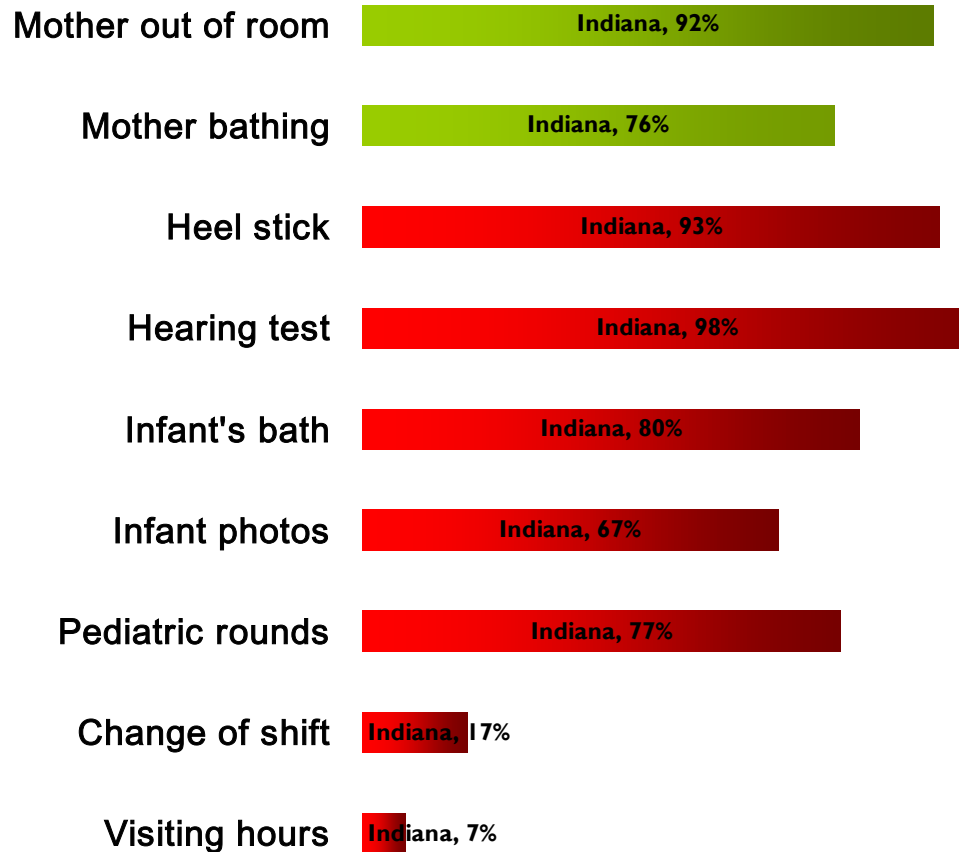


**Mothers and infants are not separated at night**



**Percent of facilities reporting each practice**

# Most Indiana maternity facilities separate mothers and infants for a variety of (unnecessary) reasons

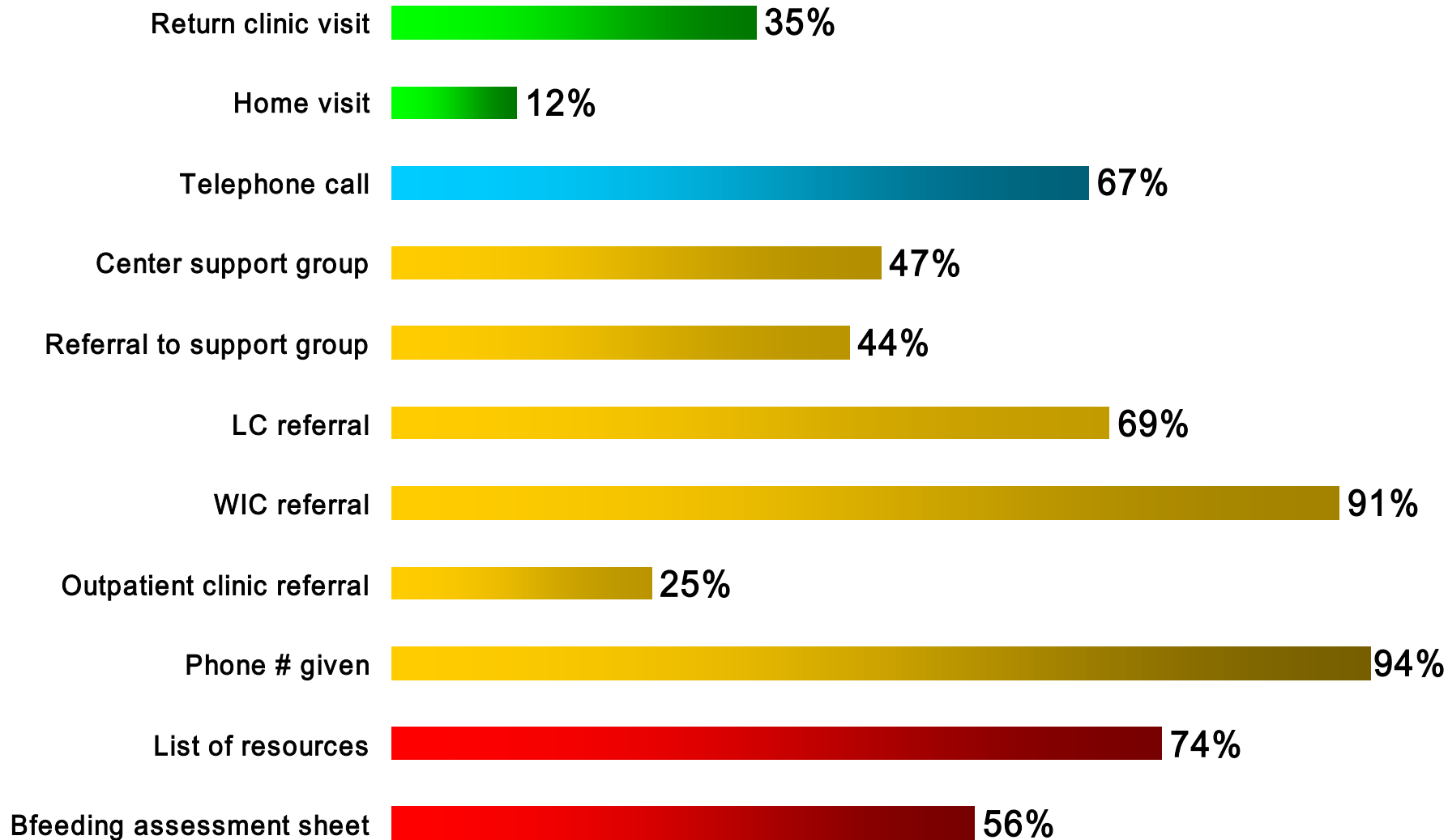


Percent of facilities reporting each practice

# Discharge Support



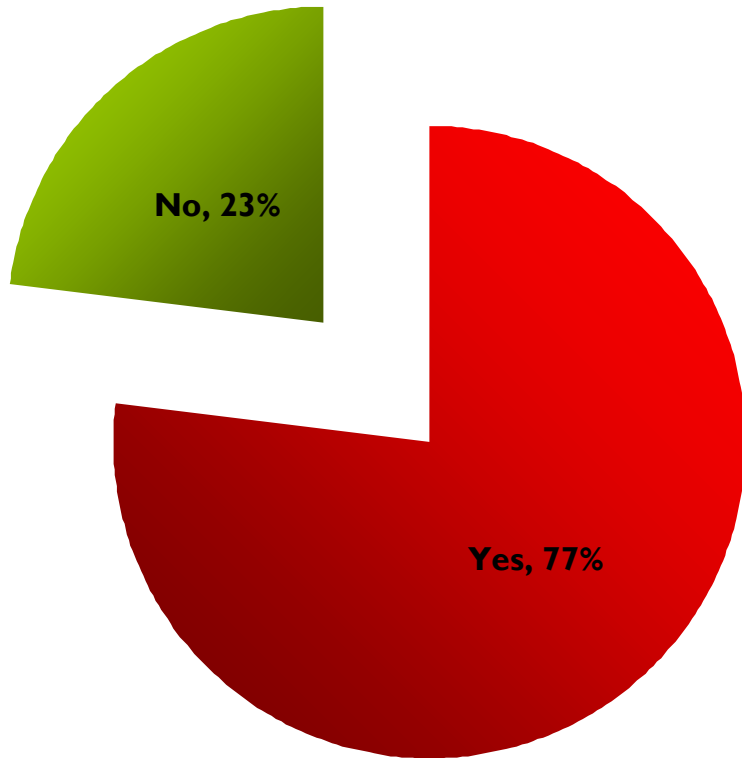
# Most Indiana facilities provide referrals, but the most effective discharge care is the least common



Percent of facilities reporting each practice

## Indiana:

Over 3/4 of Indiana facilities provide infant formula samples to breastfeeding mothers, which is detrimental to breastfeeding



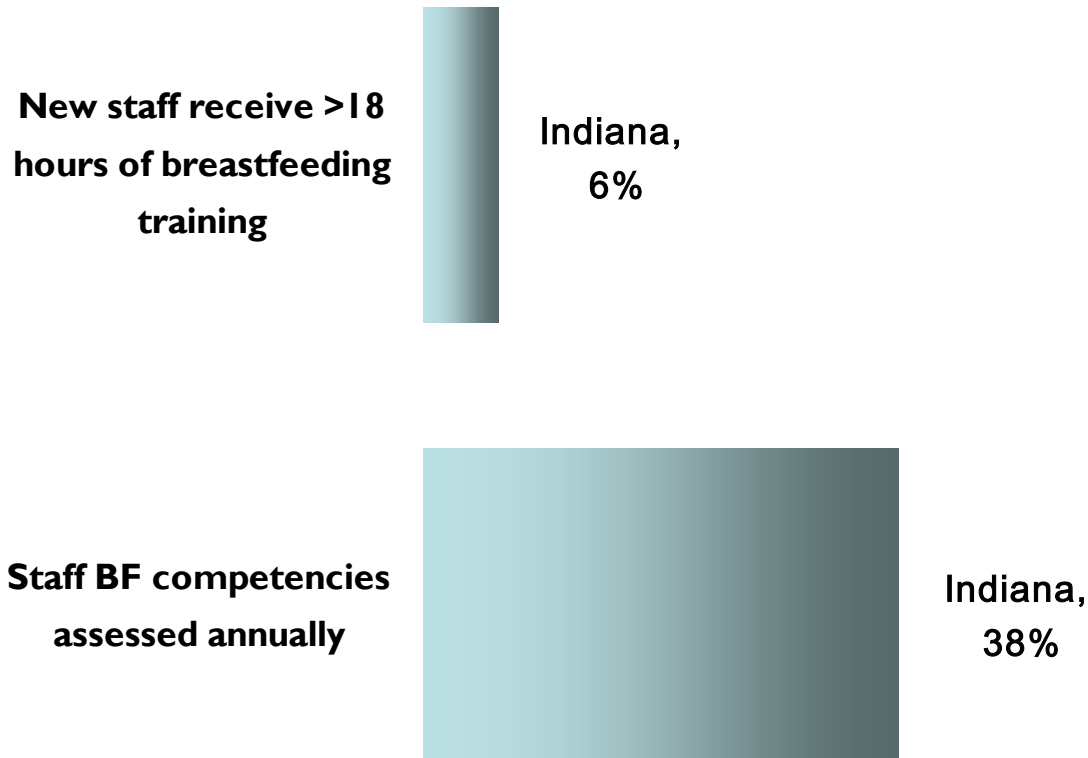
Are discharge packs containing infant formula provided to breastfeeding mothers?

Indiana



# **Staff Training**

# Indiana: Breastfeeding training and skills assessment of new and existing staff is inadequate

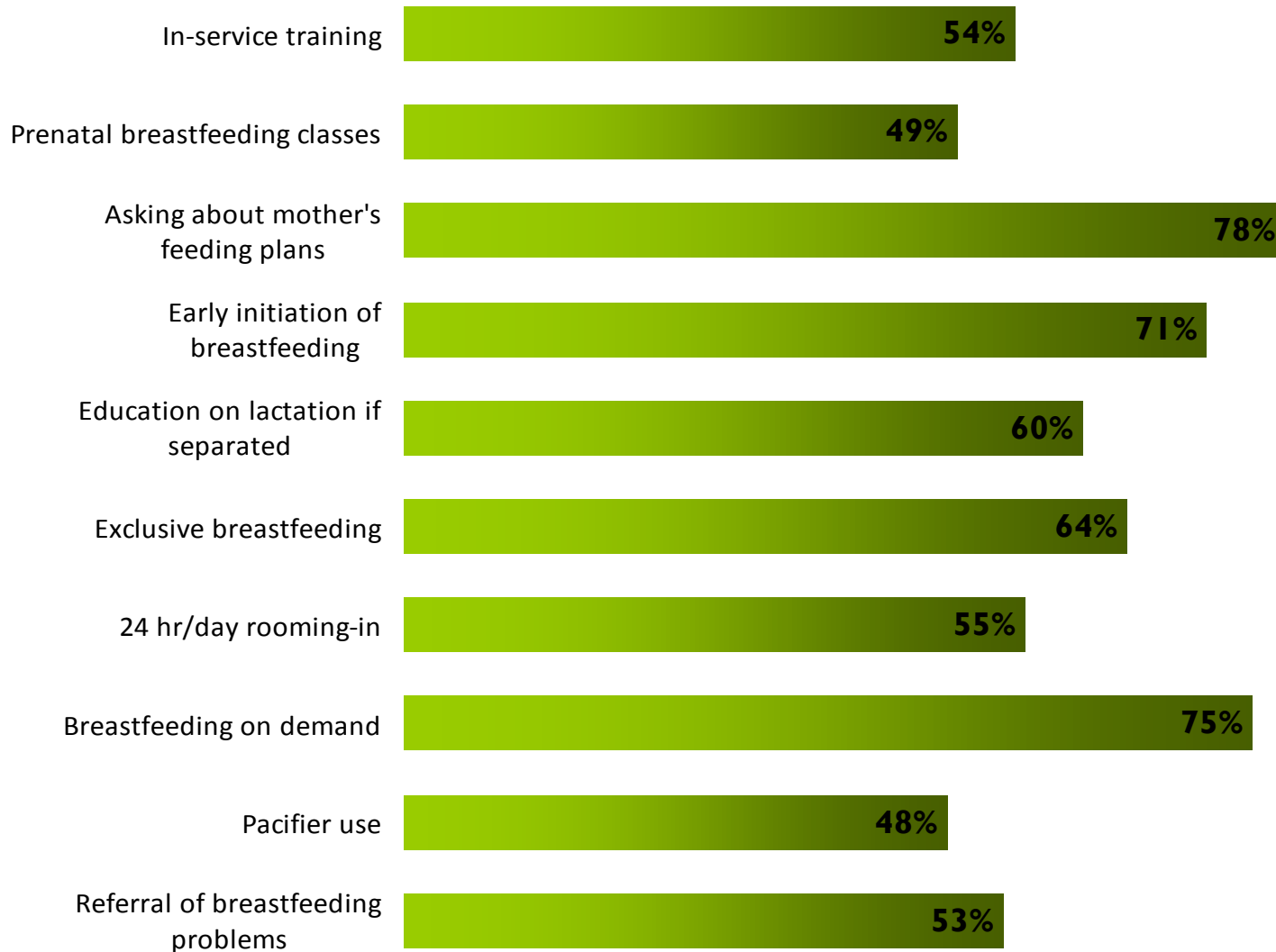


Percent of facilities reporting each practice

# Structural and Organizational Aspects of Care Delivery



# Breastfeeding Policies: Indiana



Percent of facilities reporting each element

# Summary of Results

Indiana hospitals perform similarly to the national average.

Skin-to-skin contact is standard in less than half of Indiana facilities.

Many healthy, term, breastfed infants are being routinely supplemented with formula, glucose water, and water; unlikely all are medically necessary.

Mother-infant pairs are separated during maternity stay for many reasons.

## Summary of Results (cont.)

Discharge care is typically passive and not in-person.

Distribution of formula marketing samples to breastfeeding mothers remains common in Indiana.

Only 6% of new staff in Indiana facilities receive the recommended amount of breastfeeding training.

While most facilities have a breastfeeding policy, few Indiana facilities have comprehensive policies.

# Facility Reports



# Benchmark Reports mailed to each respondent facility:

## Hospitals:

- CEO/Administrator
- Director of Quality Improvement
- Director of Obstetrics
- Director of Pediatrics
- Mother Baby Nurse Manager
- Survey Respondent

## Birth Centers:

- Birth Center Owner
- Medical Director
- Head Midwife
- Key Informant

## Maternity Practices in Infant Nutrition and Care (mPINC) Survey Quality Practice Measures—2007

# Benchmark Report

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DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL AND PREVENTION



## 2007 Quality Practice Measures Summary Information

Overall score

Your Facility's  
Composite Quality  
Practice Score: **91**

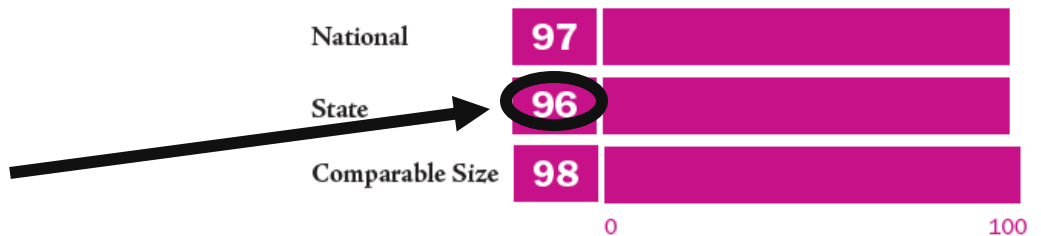
### What is the mPINC Survey?

The Maternity Practices in Infant Nutrition and Care (mPINC) Survey is a national survey of infant feeding practices in facilities that provide maternity care services.

The Battelle Centers for Public Health Research and Evaluation conducted this survey for the Centers for Disease Control and Prevention (CDC) between August and December 2007.

## Composite Quality Practice Score Percentiles<sup>1</sup>

Overall percentile  
Within your state



National = Among all facilities nationwide

State = Among all facilities in your state

Comparable Size = Among US facilities of similar size<sup>11</sup>

Shealy-Shuster Birth Services reported 3671 births in the past year; this facility is in the size category of 2000-4999 births per year.

<sup>11</sup>Your facility's percentile is the point below which the indicated percent of scores fall in each group. For example, if your National percentile is 90, then you are performing better than half of all facilities nationwide. If your State percentile is 66 or 67, you are performing better than about two-thirds of the facilities in your state. If your Similar Size percentile is 99, you are performing better than almost all other facilities nationwide with a similar number of births per year.

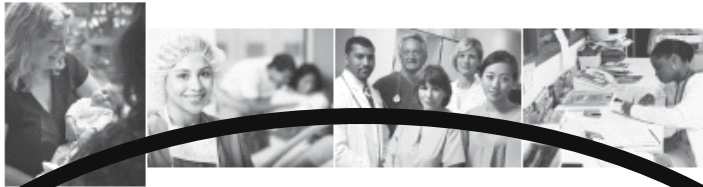
<sup>12</sup>Facility size estimates are based on annual birth census as reported by the mPINC survey respondent and/or the American Hospital Association (when respondent did not provide data).

### III. Facility Discharge Care

Subscore **55**

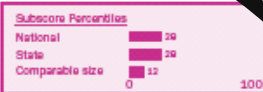


Measure	Rationale	Explanation	Ideal Response	Your Response	Your Score
Assurance of ambulatory breastfeeding support	The AAP clinical practice guidelines recommend examination of all infants by a qualified health care professional within 48 hours of hospital discharge to assess breastfeeding. <sup>18</sup> Ensuring post-discharge ambulatory support improves breastfeeding outcomes. <sup>18,19</sup>	This measure reports how many modes of ambulatory breastfeeding support are offered: Physical Contact—Home/hospital visit; Active Reaching Out—Phone call to patient; Referral—Providing information about available phone numbers, support groups, lactation consultant/specialist, WIC, outpatient clinics.	All 3 modes	Mode 3 only	10
Distribution of 'discharge packs' containing infant formula	The AAP & ACOG recommend against distributing infant formula 'discharge packs' <sup>18,20</sup> because it reduces exclusive breastfeeding rates & implies health care professional endorsement of specific commercial items. <sup>18,20</sup>	This measure reports whether breastfeeding patients are given 'discharge packs' containing product marketing infant formula samples.	No	No	100



### IV. Staff Training

Subscore **36**

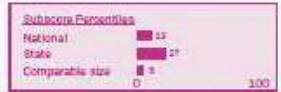


Measure	Rationale	Explanation	Ideal Response	Your Response	Your Score
Preparation of new staff	Staff training ensures standard capacity to provide evidence-based care, learn about new information, & maintain patient support skills. <sup>21-23</sup> Standard 18 hour staff training improves patient breastfeeding outcomes facility-wide. <sup>18,24</sup>	This measure reports how many hours of breastfeeding education new nurses & other birth attendants* received.	>18	1 to 4	25
Continuing education		This measure reports how many hours of breastfeeding education current nurses & other birth attendants* received in the past year.	≥5	1 to 4	50
		This measure reports how many nurses & other birth attendants* received any breastfeeding education in the past year.	Most	Many	70
Competency assessment	Like other critical nursing competencies, regular assessment of competency in breastfeeding management & support improves delivery of care. <sup>25,26</sup>	This measure reports how often nurses & other birth attendants* are assessed for competency in breastfeeding management & support.	At least once a year	Never	0

\*In free-standing birth centers, these questions were asked among 'birth attendants' to accommodate the range of attendants to births in these facilities.

### V. Structural & Organizational Aspects of Care Delivery

Subscore **46**



Measure	Rationale	Explanation	Ideal Response	Your Response	Your Score
Breastfeeding policy	The AAP recommends inclusion of specific elements in facility breastfeeding policies. <sup>27</sup> The Academy of Breastfeeding Medicine's clinical protocol lists components of a model breastfeeding policy. <sup>28</sup>	This measure reports the number of model breastfeeding policy elements in your facility's breastfeeding policy.	10	2	20
Communication of breastfeeding policy	Effective intra-professional communication increases the likelihood that a facility's breastfeeding policy will be implemented appropriately. <sup>18,29</sup>	This measure reports the modes used to inform staff about breastfeeding policies. In person—In-service training, new staff orientation, new staff training, staff meeting. Printed/online materials—Policy posted, newsletter.	Both modes	Both modes	100
Infant feeding documentation policy	Standardized documentation of patient decisions allows for valid (internal assessment, monitoring & improvement of quality of care, & improves staff collaboration & support of patients' decisions. <sup>30</sup>	This measure reports your facility's policy for documentation of patient infant feeding place & practices.	Any point during or post-stay	No/not sure	0
Employee breastfeeding support	The AMA & AWHONN recommend medical facilities support all lactating employees by providing appropriate time & facilities to express & store milk during the working day. <sup>31,32</sup> The US Breastfeeding Committee recommends specific workplace supports. <sup>33</sup>	This measure reports how many supports are provided to lactating staff. Critical supports—Room to express milk, electric breast pump for staff use, permission to express milk on breaks; Additional supports—On-site child care, breastfeeding support group for staff, access to lactation consultant/specialist, paid maternity leave other than accrued leave.	3 critical**	3 critical, 0 additional	100
Facility receipt of free infant formula	The ADA guidelines for mandatory elements of infant formula HACCP plans <sup>34</sup> apply to purchased & free infant formula. The AMA recognizes the inherent conflict of interest this kind of financial support introduces. <sup>35,36</sup>	This measure reports whether your facility receives infant formula free of charge from manufacturers.	No	Yes	0
Prenatal breastfeeding instruction	Patient education about breastfeeding improves breastfeeding rates. <sup>37</sup>	This measure reports whether breastfeeding is a component of prenatal patient education opportunities.	Yes	Yes	100
Coordination of lactation care	A designated Lactation Coordinator demonstrates consideration of lactation support as an essential & necessary function of intrapartum care. <sup>38</sup>	This measure reports whether your facility has a designated person who oversees lactation care within the facility.	Yes	No	0

\*See [www.cdc.gov/hnpa/](http://www.cdc.gov/hnpa/) for detailed coding information.

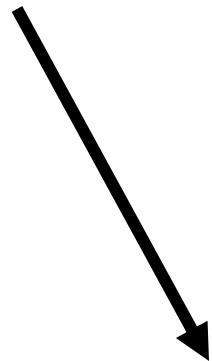
#### Next steps

Examine the care dimension that was the most problematic in your facility compared to others in your state or across the country, and choose one care process or policy to begin improving. For example:

- I. Labor and delivery care—Reduce delays in first contact and breastfeeding opportunities.
- II. Postpartum care:
  - a. Feeding of breastfed infants—Eliminate unnecessary supplementation;
  - b. Breastfeeding assistance—Improve patient education and assistance;
  - c. Contact between mother and infant—Eliminate unnecessary separations between mothers and infants.
- III. Facility discharge care—Ensure compliance with AAP clinical practice recommendations.
- IV. Staff training—Facilitate staff training on breastfeeding management and support.
- V. Structural & organizational aspects of care delivery—Improve your facility's policies related to breastfeeding.

Score for each subscale

Percentile within Indiana (state) for this subscale



### III. Facility Discharge Care

Subscore **68**



Measure	Rationale	Explanation	Ideal Response	Your Response	Your Score
Assurance of ambulatory breastfeeding support	The AAP clinical practice guidelines recommend examination of all infants by a qualified health care professional within 48 hours of hospital discharge to assess breastfeeding. <sup>34</sup> Ensuring post discharge ambulatory support improves breastfeeding outcomes. <sup>34-35</sup>	This measure reports how many modes of ambulatory breastfeeding support are offered: Physical Contact—Home/hospital visit; Active Reaching Out—Phone call to patient; Referral—Providing information about: available phone numbers, support groups, lactation consultant/specialists, WIC, outpatient clinics.	All 3 modes	Modes 2 and 3	35
Distribution of 'discharge packs' containing infant formula.	The AAP & ACOG recommend against distributing infant formula "discharge packs" <sup>37,38</sup> because it reduces exclusive breastfeeding rates & implies health care professional endorsement of specific commercial items. <sup>37-39</sup>	This measure reports whether breastfeeding patients are given "discharge packs" containing product marketing infant formula samples.	No	No	100

# Choosing priorities



# Criteria for focusing efforts

- Strongest evidence base
- Most feasible
- Easiest to communicate
- Multiplier effects
- Most room for improvement



# Criteria for focusing efforts

- Strongest evidence base
  - Limit supplementation, separation, skin-to-skin
- Most feasible
  - Eliminate pacifiers, increase skin-to-skin
- Easiest to communicate
  - Supplementation, separation, discharge support
- Multiplier effects
  - Training/competency assessment, policy, separation
- Most room for improvement
  - Facility-specific (based on score & percentile)

# Next Steps

- Dissemination of 2009 survey results
  - 2009 benchmark & state reports
  - Web site ([www.cdc.gov/mpinc](http://www.cdc.gov/mpinc)) [state reports]
  - Publications
- Work with Joint Commission
- Repeat survey in Fall 2011
  - Track progress
  - Focus on changes

# Acknowledgments

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**Thank you!**



**[www.cdc.gov/breastfeeding](http://www.cdc.gov/breastfeeding)**

**[www.cdc.gov/mpinc](http://www.cdc.gov/mpinc)**

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