



Breastfeeding and New Jersey Maternity Hospitals:

A Comparative Report

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Summary and Objectives

Breastfeeding is universally accepted as optimal for infant, maternal and public health. Breastfeeding provides superior nutrition, prevents disease, and enhances infant development. The choice to breastfeed is personal, but that choice can either be supported or undermined by what happens in the hospital in the first few days after delivery. The implementation of hospital policies that specifically support breastfeeding have been documented by research to dramatically increase exclusive breastfeeding rates and improve the health of mothers and infants after discharge. The first part of this report summarizes the evidence and rationale for making New Jersey's maternity hospitals the focus of redoubled efforts to increase breastfeeding among all new mothers.

This report replicates methodology, first introduced in 2008, that accounts for patient mix differences among hospitals. The standardized scores in Tables 1 and 2 allow meaningful comparisons among all hospitals, and identify some outstanding hospitals that produce breastfeeding results far beyond expectations based on patient mix. Finally, the report includes a model self-assessment tool and a list of resources that will allow hospitals to begin the process of enhancing breastfeeding through their core maternity care policies and practices.

Background

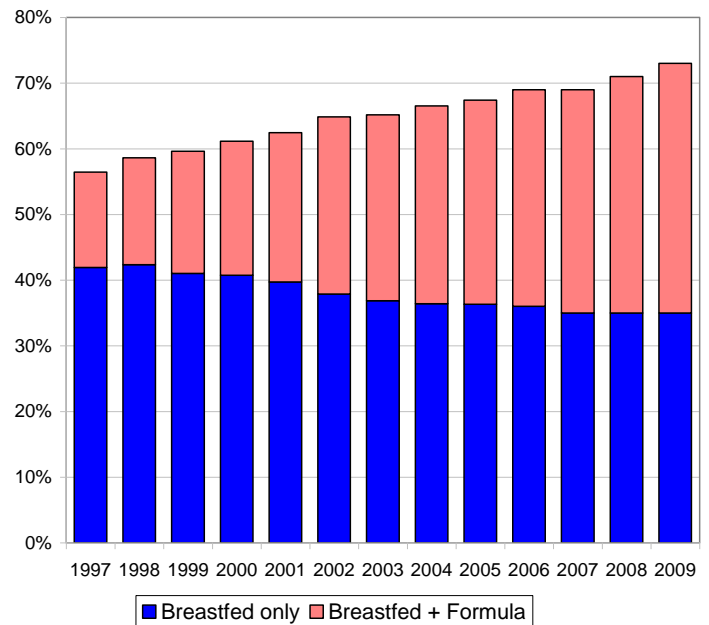
Breastfeeding is universally accepted as the optimal way to nourish and nurture infants, and it is recommended that infants be exclusively breastfed for the first six months.¹ Extensive research documents the compelling benefits to infants, mothers, families, and society from breastfeeding.^{1,4} Breastfeeding decreases the incidence of infectious diseases (diarrhea, lower respiratory infection, otitis media, bacteremia, and urinary tract infection), obesity, sudden infant death syndrome, asthma, insulin-dependent diabetes mellitus, and chronic digestive diseases. Breastfeeding has been documented to enhance cognitive development. Women who do not breastfeed experience delayed return to pre-pregnancy weight, earlier resumption of ovulation and shorter intervals between births, poor postpartum bone re-mineralization and increased risk of ovarian and premenopausal breast cancer. In addition to the contributions to individual health, breastfeeding has significant social and economic impacts. In the first year after birth, breastfeeding infants generate less health care costs, and their parents miss less work time.

Infants who are exclusively breastfed in the early post-partum period are more likely to continue breastfeeding at six and twelve months. Despite efforts to protect, promote and support breastfeeding, the initiation of breastfeeding in New Jersey's maternity hospitals continues to fall short of *Healthy New Jersey 2010* goals:²

- To increase the proportion of mothers who breastfeed their babies (exclusively or in combination with formula) at hospital discharge to at least 75 percent.
- To increase the proportion of breastfeeding women whose infants are breastfed exclusively at hospital discharge to 90 percent.

Rates of exclusive breastfeeding are in fact declining in New Jersey. Although the initiation of breastfeeding has risen over the past decade, this increase is accounted for by infants who are also receiving formula in combination with human milk.³ As shown in Figure 1, the percentage of infants in New Jersey exclusively breastfeeding prior to discharge from the hospital decreased from 42% in 1997 to 35% in 2009, while breastfeeding in combination with formula

Figure 1. Breastfeeding at Hospital Discharge, New Jersey 1997-2009



feeding increased from 15% to 38%. The trend in increased combination feeding is consistent regardless of the mother's age, race/ethnicity, marital status, birthplace, level of educational attainment, family size, type of prenatal care provider, infant's sex and plurality (singleton, twin, etc.).

How Do Hospitals Affect Breastfeeding?

Hospital staff and practices play an under-appreciated role in supporting or hindering breastfeeding, despite the belief that the decision lies strictly with the mother.⁴ Because almost all babies are born in the hospital, there is a clear opportunity for hospital personnel to promote the initiation of breastfeeding. Delivery hospitals have widely varying rates of exclusive breastfeeding initiation, due partly to differences in patient composition and partly to differences in maternity care practice.

According to the Maternity Practices in Infant Nutrition and Care (mPINC) Survey⁵ conducted by the CDC, hospital policies that specifically support exclusive breastfeeding also vary widely.⁶ For example, in many hospitals it is common practice to supplement breastfeeding with water or formula, while in others supplementation requires written consent by the mother or an order on the medical chart. What happens in the hospital during the first few days after delivery plays a crucial role in establishing breastfeeding and helping mothers to continue breastfeeding after leaving the hospital. *Ten Steps to Successful Breastfeeding*,⁷ developed and published by WHO/UNICEF, represents a comprehensive plan to optimize parental education, maternity department policies and practices, and post-discharge support.

The Ten Steps To Successful Breastfeeding

- 1 - Maintain a written breastfeeding policy that is routinely communicated to all health care staff.
- 2 - Train all health care staff in skills necessary to implement this policy.
- 3 - Inform all pregnant women about the benefits and management of breastfeeding.
- 4 - Help mothers initiate breastfeeding within one hour of birth.
- 5 - Show mothers how to breastfeed and how to maintain lactation, even if they are separated from their infants.
- 6 - Give infants no food or drink other than breastmilk, unless medically indicated.
- 7 - Practice "rooming in" - allow mothers and infants to remain together 24 hours a day.
- 8 - Encourage unrestricted breastfeeding.
- 9 - Give no pacifiers or artificial nipples to breastfeeding infants.
- 10 - Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Beginning in 2004, the New Jersey Pregnancy Risk Assessment Monitoring System (NJ-PRAMS), a monthly sample survey of new mothers two to six months post-partum, included eight questions on practices in the hospital that relate to breastfeeding.⁸ Figure 2 reports the estimated effects of five of these practices, after adjusting for the age, education, number of prior children, immigrant status, race and Hispanic origin of the mother. The largest difference was for avoiding supplemental feeding: when a mother reported breastfeeding exclusively until discharge, the odds of any breastfeeding at eight weeks post-partum were 2.9 times greater, and the odds of

exclusive breastfeeding at eight weeks were 6.3 times greater.

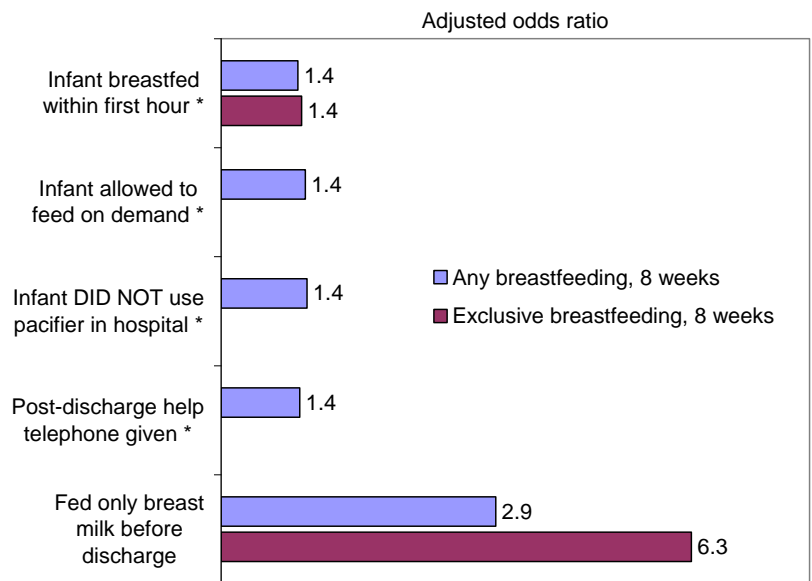
These mothers were also very likely to report adherence to other features of the Ten Steps, for example, breastfeeding within the first hour after delivery and being allowed to feed infants “on demand.”

When infants were given supplemental formula at the hospital, these other elements were also

more likely to vary, and they had less powerful effects on the persistence of breastfeeding. For example, among infants that received formula before they left the hospital, those that breastfed within the first hour of life were only about 40% more likely to be doing any breastfeeding or be exclusively breastfeeding at eight weeks. Recommended practices such as feeding on demand, avoiding pacifiers, and providing post-discharge telephone help also had modest effects on persistence of any breastfeeding, but no effect on persistent exclusive breastfeeding.

These effects were assessed via mothers’ reports of their own experiences, rather than from hospital-provided practice data. The PRAMS results nevertheless add to the mounting evidence that what hospitals do matters. A comprehensive review of practice improvements and the evidence base supporting them is presented in *The CDC Guide to Breastfeeding Interventions*,⁹ which considers potential interventions for prenatal education, post-discharge support and social acceptance as well as hospital maternity care. Hospitals administrators and practitioners seeking to improve

Figure 2. Hospital Factors Affecting Persistence of Breastfeeding at 8 Weeks (* Among Initiators with Formula Supplementation in Hospital) (Adjusted for maternal factors, n=5,600)



breastfeeding outcomes will find this document a valuable resource. Baby Friendly USA, a WHO affiliate, helps American hospitals achieve the *Ten Steps*. Their program starts with a self-assessment tool available at:

www.babyfriendlyusa.org/eng/docs/2011_Self_Appraisal_Tool.pdf.

Hospital Statistics and Population Adjustment

Breastfeeding statistics for any hospital depend in part on its population of patients. Maternal age, race, Hispanic origin, education, and foreign birth, and delivery characteristics such as plural birth and neonatal intensive care are well known to affect breastfeeding initiation.¹⁰ Variations in patient mix across hospitals can therefore be expected, all else equal, to produce differences in hospitals' individual breastfeeding outcomes. Such differences, by themselves, are outside the hospitals' control, and should not be automatically attributed to variations in healthcare practice.

New Jersey does not at this time collect data describing hospital maternity policies and practice standards that relate to breastfeeding, nor does PRAMS support hospital level assessments of practice. For now, this report has a more limited objective: [a] to compare New Jersey hospitals according to rates of exclusive breastfeeding at discharge; and [b] to present an adjusted measure of hospital rates that minimizes the effect of patient population. Population adjustment methods aim to:

- assess the degree to which a hospital's outcomes match expectations based on its patients' demographic and/or medical characteristics;
- estimate what each hospital might achieve if it had the same patient mix as every other; such approaches are also referred to as *standardization*.

Identifying hospitals that do better than would be expected from their patient mix satisfies two objectives. In the short term, prospective mothers with strong preferences

about breastfeeding are guided to hospitals most suited to their needs. In the long term, all hospitals and consumers benefit from discovering and evaluating potential best practices.

Other states have recently produced similar hospital specific breastfeeding reports.^{11, 12} In 2010, The Joint Commission and the National Quality Forum, two leading organizations in measurement of healthcare quality, called for including breastfeeding at discharge as one of five core perinatal care quality indicators. New Jersey has chosen to focus specifically on exclusive breastfeeding, and to address hospital differences in population mix as part of its evaluation. This report uses a technique called logistic regression, with variables routinely available on the electronic birth certificate (EBC), to accomplish this population adjustment. (See Appendix 1 for a complete exposition.) The use of this methodology for breastfeeding was peer-reviewed and published in 2005 in the obstetrical journal *Birth: Issues in Perinatal Care*.⁴ The article documented that, in New Jersey, patient mix accounts for about sixty percent of differences in breastfeeding among hospitals. The other forty percent is presumably where hospital staff and practices play a key role, independently influencing the transition from maternal knowledge and intention to actual discharge outcomes.

