

**Abstract Title:**

Factors Determining Neonatal Human Milk Nutrition at Hospital Discharge

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**Abstract Description:**

**Introduction:** It is unclear which factors serve as barriers to maintaining breastfeeding until discharge in Level IV NICUs (Neonatal Intensive Care Units).

**Objective:** To analyze maternal and neonatal risk factors influencing breastfeeding rates at discharge.

**Methods:** Records of 391 outborn infants, 22 to 42 weeks (wks) gestational age (GA), and discharged home with enteral feeds from a freestanding Level IV NICU in 2017 were reviewed. Data was categorized by GA, maternal race, maternal drug use, time to breastmilk (BM) initiation, length of stay (LOS), and feedings on discharge (exclusive or partial BM, or formula). Chi-square test analysis was performed to evaluate for differences in this population.

**Results:** BF rates across GA categories were 57% among 22-27wk, 58% 28-31wk, 73% 32-34wk, 67% 35-36wk, and 76% 37+wk. 64% of infants received BM in the first week of life. Term infants represented the majority of this population and contributed to the highest rate of formula use both at admission and discharge (Fig.1). Differences between breastfeeding rates in the 22-27wk GA and 37+wk GA groups were significant ( $\chi^2=5.73$ ,  $p<0.02$ ). 95/391 (24%) were discharged with formula. Of formula fed infants, 48 (50.5%) received formula prior to admission and 32 (33.6%) had a history of maternal drug use most commonly due to methamphetamines. There were small numbers of infants with severe malabsorption, aspiration, and complex social circumstances (i.e foster care, surrogacy) who received formula. Breastfeeding rates were highest in Asian (82%) and Caucasian (81%) as compared to Hispanic (77%) and African American (54%) mothers (Fig. 2). BF rates in African American mothers were lower than their counterparts ( $p<0.01$ ). There were no significant differences among the other racial groups. 71.2% of patients were admitted within 7 days of life. Longer LOS was associated with higher

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rates of formula feeds at discharge (Fig. 3). A sharp decline in breastfeeding rates was noted by 2 weeks of hospitalization (Fig. 4).

Conclusion(s): The primary reasons for breastfeeding failure overall were prior formula use, maternal drug use, longer LOS, and racial disparities. Oral feeding problems, malabsorption, and complex social factors also contributed. Interventions to enhance breastfeeding rates include: addressing the social and psychological needs of mothers; comprehensive education on the importance of early lactation support at community referral hospitals. Targeted efforts in sustaining breastfeeding rates before 2 weeks of hospitalization are of particular importance.