

**Abstract Title:**

The Effectiveness and Risks of a Standardized Feeding Advancement Protocol in Preterm Neonates: A Multicenter Study

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**Introduction:** The Effectiveness and Risks of a Standardized Feeding Advancement Protocol in Preterm Neonates: A Multicenter Study There is wide practice variability in feeding advancement among premature infants. There are also inherent risks to rapid or slow feeding advancement. Therefore, our objectives are to: (1) To identify the length of stay (LOS) among a pre standardized feeding advancement protocol and after; (2) To describe associated risks (frequency of necrotizing enterocolitis [NEC] and increased clinical intervention [central line days]) among cohorts.

**Methods:** This is a retrospective study among newborns at an academic-affiliated, community hospital level III/a neonatal intensive care unit from Jan 2013 – July 2015 with a gestational age (GA) at birth from 27 - 31 6/7 weeks. Exclusions included death, transferred in / or to another facility, and congenital anomalies. Cohorts were defined as pre protocol adoption (Jan 2013 – Mar 2014) and post protocol adoption (Apr 2014 – July 2015). Univariate analysis was used to describe differences between cohorts. Multivariate (MV) regression analysis, adjusting for race, sex and birthweight, was used to model by

cohort.

**Results:** A total of 61 newborns were identified, of these, 31 were born prior to the protocol adoption and 30 born thereafter. There were no significant differences in birthweight, GA, race, and sex. On MV analysis, the feeding advancement cohort was associated with shorter LOS [SE] (45.4 [2.2] vs 53.0 [2.4] days), earlier time to full enteral feeds (18.2 [1.2] vs 23.4 [1.4] days of life), earlier time to full oral feeds (39.5 [2.1] vs 45.9 [2.4] days of life), and decreased peripherally inserted central catheter line days (14.2 [1.5] vs 21.5 [1.8] days) compared to not using the feeding protocol. No significant associations were noted for umbilical line (UVC) days, NEC frequency and initiation of feeds among cohorts.

**Conclusion:** These data indicate that the implementation of a standardized feeding protocol lowered the LOS by 8 days without increasing the risk of NEC and need for increased clinical interventions (central lines). Further research is required to determine whether these associations persist in a larger, multi-center cohort.