

**Title of Abstract:**

Necrotizing Enterocolitis (NEC) and NEC totalis in Very Low Birth Weight infants- A 2 year quality improvement (2015-2016) at St. Francis Medical Center, Lynwood, CA

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**Abstract Description:**

Background: The incidence of NEC has increased in recent years, as a result of advances in neonatal intensive care, which allow younger, sicker infants - the population most at risk for NEC to survive. While the overall incidence is 1 in 1000 live-births, in VLBWs the prevalence is 3% and 10%. The incidence of NEC at SFMC NICU in the VLBW ranged from 8.7% (11/126) in 2009 up to 18.5% (12/65) in 2013 and 10.3% (8/78) in 2014. There were 6 patients with NEC totalis with 100% mortality from Feb 2013 – October 2014. (GA 23-31 week & BW 605-1915gm).

Interventions: Multiple areas for quality improvement were identified with implementation of the following initiated from November 2014: 1) Streamlined availability of breast milk for all babies <= 32 weeks. Mothers informed and consented to donor milk if mom's breast milk unavailable. Exclusive feeding with human milk only with no formula used. 2) Uniform and consistent adoption of a standardized feeding protocol. 3) Storage and handling of milk: Designated sterile milk prep areas identified in the intensive care unit with individually wrapped syringes for administration of breast milk. Feeding tubes changed q 2 weeks with extension tubes changed q 12 hrs. Cow's milk fortifier up to 24 cal/oz-, if > 26 cal/oz- SC30 with fortified breast milk 24 cal/oz due to potential concern of hyperosmolarity. 4) Infection Control Measures: a) Reinforcement and continued implementation of hand Hygiene b) Insertion and maintenance check lists for all PICC lines with F/U CLABSI rates. 5) Prevention of overcrowding 6) Parent education and lactation support .7) Follow-up: Monthly meetings with the multidisciplinary team to evaluate progress and identify road blocks.

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Results: One patient with Medical NEC in 2015 and 2 patients in 2016(both 24 wks –s/p Indocin for PDA/ Hydrocortisone for hypotension / pressor support (2/57). No patients with NEC totalis / NEC related mortality since November 2014.

Conclusions: We found a significant decrease in medical and surgical NEC from 18.5% in 2013 to 1.5% in 2015 in VLBWs. For the first time in 2015 the NEC rate in our center (1.5%) was lower than the CPQCC rate (3.2%). No cases of NEC totalis or NEC related deaths were noted since November 2014.

Future Directions: Continued proactive vigilance with feedback and reinforcement to staff to prevent provider fatigue. Focus on identifying evolving NEC trends in our practice as it relates specifically to the 24-25 week infant population.

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