Postpartum Care in the Neonatal intensive Care Unit (PeliCaN) - a Randomized Controlled Trial

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Background: Postpartum parents of hospitalized infants in neonatal intensive care units (NICUs) have higher rates of chronic disease and pregnancy complications than parents of well newborns. NICU parents may prioritize remaining at their infants' bedsides over their own healthcare.

Objective: Determine whether embedding doulas and certified nurse midwives for postpartum care in the NICU (PeliCaN) would reduce time to receipt of postpartum healthcare. We hypothesized that the intervention would shorten time and improve comprehensiveness of postpartum care.

Study design: We performed a parallel, randomized controlled trial (RCT) from 11/29/2022 to 11/7/2023 in a single center, Level III NICU, in a tertiary hospital in Philadelphia, PA with ?4200 births annually. Postpartum parents of infants <34 weeks' gestation, <2 weeks old, and anticipated to remain in the NICU ?1 week were eligible. Of the 135 potentially eligible parents, staff screened 78 for eligibility (constrained by access of just four hours per week of midwifery care), contacted 52 of the 71 eligible parents, and enrolled 37 by two weeks postpartum. There were 20 parents randomized to intervention and 17 to control via block randomization stratified by gestational age (<29 and ?29 weeks) and insurance (public and private). The intervention consisted of postpartum doula support and midwifery clinical care in the NICU for the duration of the infant's hospitalization. Control participants received usual care. Outcomes were measured at 12 weeks postpartum; all participants had complete follow-up data. Primary outcome was days to receipt of any postpartum care and to completion of three care components: blood pressure measurement and treatment if needed; depression screening and referral and treatment if indicated; and contraception counseling (if no sterilization procedure had been performed) and provision if patients desired. Planned secondary analyses assessed rates of any postpartum care and stratified by gestational age and insurance.

Results: Six (30%) intervention and six (35%) control participants were parents of infants <29 weeks' gestation and 16 (80.0%) intervention and 15 (88.2.1%) control participants were publicly insured. Median (95% CI) time to first postpartum visit was 11 (10, 12) and 31 (26, 37) days, for intervention and control participants, respectively (P<0.001). One intervention (5%) and six control (35%) participants missed at least one of three care components, most commonly blood pressure measurements. Four (23%) control participants lacked a blood pressure measurement, one of whom had preeclampsia. There were no differences in outcomes by infant gestational age or insurance.

Conclusions: In this single-center RCT, the PeliCaN model of on-site doula and midwifery care for NICU parents expedited and enhanced postpartum care. Multicenter trials and implementation science work are urgently needed to establish broader utility and feasibility.

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