

Abstract Title:

Improved Referral of Very Low Birthweight Infants to High-Risk Infant Follow-Up in California

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Abstract Description:

BACKGROUND High-risk infant follow-up (HRIF) programs are crucial to the care of very low birthweight (VLBW) infants who are at high risk of neurodevelopmental, functional and medical sequelae. A study of HRIF referral in 2010-2011 in California demonstrated significant disparities in referral of VLBW infants after discharge from the neonatal intensive care unit (NICU). As a result, a statewide quality improvement (QI) initiative was implemented in June 2013 to improve HRIF referral through the creation of site-specific reports matching NICU discharges with confirmed referral.

OBJECTIVE Evaluate changes in referral of VLBW infants to HRIF after implementation of a statewide QI initiative in California and compare the association of patient-level, NICU and regional factors with referral in pre-implementation (P1) and post-implementation (P2) periods.

DESIGN/METHODS The California Perinatal Quality Care Collaborative (CPQCC) is a population-based network that includes >95% of VLBW infants in California. Infants born 2010-2016 with BW <1500 g who survived to discharge home were included (P1: January 2010 - June 2013; P2: July 2013 - December 2016). We used multivariable logistic regression to examine factors associated with referral rates and to derive risk-adjusted referral rates by NICU and region in P1 and P2.

RESULTS In P1, 83% of infants were referred compared to 95% in P2. Adjusted odds ratio (aOR) for HRIF referral in P2 compared to P1 was 9.11 (95% CI: 7.87-10.55). Improvement was greatest (>=15% increase) for those infants >=33 weeks and SGA (small for gestational age), with birthweight 1251-1500g and born in intermediate and lower-volume NICUs. In P2, Hispanic race-ethnicity, SGA status, greater birthweight, congenital anomaly, major morbidity, inborn status and lower NICU volume were no longer associated with decreased HRIF referral.

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African-American race-ethnicity remained associated with decreased referral compared to white ethnicity [aOR 0.64 (95% CI: 0.41-0.98)]. The odds of referral in both periods remained greater with increasing NICU level; aOR 5.20 (95% CI: 1.92-14.11) for those discharged from regional NICUs compared to intermediate-level and lower-volume NICUs. In P2, referral improved in previously poor-performing NICUs and regions. In P1, referral by region ranged from 58-96%; in P2, referral ranged 87-99%.

CONCLUSION HRIF referral of VLBW infants improved significantly with reduced variation in referral across NICUs after a statewide QI initiative. Referral of African-American and Hispanic infants improved, but disparities remain. Our results demonstrate the benefit of a targeted initiative in California.