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"Barriers that contribute to disparities seen in the prenatal diagnosis of congenital heart disease in patients with government-funded health insurance"

BACKGROUND: Multiple national studies have established an inverse relationship between surgical center volume and surgical outcomes in pediatric cardiac surgery. The aim of the initial study was to determine whether surgical outcomes for a private, outpatient pediatric cardiology practice that was not associated with a surgical center, differed based on the surgical center volume to which the patient was referred. While we did not find significant differences in clinical outcomes related to surgical center volume, race or insurance status during the initial study, important disparities to care were identified. Children with private insurance were more likely to be diagnosed prenatally with congenital heart disease (CHD). While the absence of a prenatal diagnosis is not associated with increased mortality in the present day, the presence of a prenatal diagnosis is significant for the neonatal care and morbidity of an infant. The purpose of this follow-up study was to assess financial and non-financial barriers that contribute to this disparity seen in the prenatal diagnosis of CHD.

METHODS: The initial study was a retrospective chart review of patients referred for congenital heart surgery between 2014 and 2019. Based on the results of the first study, the second study was developed. Patients who had undergone congenital heart surgery were identified in the pediatric cardiology practice. A survey was then administered to mothers of patients who underwent cardiac surgery. The complexity of each patient's diagnosis was identified using STAT categories. 46 patients completed the survey. Chi square analysis was then performed.

RESULTS: **Study 1:** Primary analyses showed no significant relationships between predictors and outcomes with two exceptions. First, the presence of a prenatal diagnosis was related to more readmissions, more reoperations, and longer length of stay. Second, lower STAT categories had fewer reoperations and shorter length of stay (Table 1). Secondary analyses demonstrated that insurance status and STAT category were related to prenatal diagnosis. In addition, race was related both to surgical center volume and to insurance status (Table 2). **Study 2:** All mothers who completed the survey had prenatal care. 60.9% were diagnosed with CHD prenatally and 39.1% were diagnosed with CHD after birth. Higher STAT category lesions were significantly associated with the presence of a prenatal diagnosis. Both insurance status and race were not significantly related to the presence of a prenatal diagnosis.

CONCLUSIONS: This initial pilot study did not find a difference in clinical outcomes related to health insurance, race, or surgical center volume. However, important disparities were found. Children with private insurance were more likely to be diagnosed with CHD prenatally, and black children were more likely to be referred to medium-volume surgical centers. The second study confirmed that those with more severe cardiac pathology were more likely to be diagnosed prenatally. In our follow-up study, there was no relationship between insurance status or race and prenatal diagnosis. Interestingly, all patients in this sample group had prenatal care. Further studies are needed to explore the group of children whose mothers did not receive prenatal care (and who were not represented in our follow-up study) to determine the barriers to their access to care.