

Promoting Equity in the Timing of Cleft Palate Repair in a Socially Vulnerable Area: An Analysis of Sociodemographic Differences in Surgical Timing and Suggestions for Change

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Purpose

Investigate the interplay of race, social vulnerability, and insurance coverage on the timing of cleft palate (CP) repair.

Demonstrate means tested interventions to improve equality in cleft care in a state with concentrated health disparities.

Introduction

- 12 of every 10,000 children born in the United States are affected by CP.¹
- Primary CP repair is critically time-sensitive as palatal integrity is crucial during key periods of speech development.²
- CP diagnosis may present significant care burdens for patients and their families.
- Previous studies show delayed repair in patients who experience various healthcare disparities.^{3,4}
- Mississippi is a widely rural state with known healthcare disparities and care access barriers.

Methods

- This study retrospectively reviewed patients undergoing primary palatoplasty from 2011 to 2021 at the authors' institution.
- Patient Data: race, social vulnerability index (SVI) percentile, insurance payer status, and age at which patients underwent primary CP repair.
- Statistical Analysis: Kruskal-Wallis tests with planned comparisons made with Dunn's test for multiple comparisons.

Results

Patient Race	n=	Mean Age (mo)	SEM
American Indian/Alaska Native	6	17	3.47
Asian	5	15.6	1.99
Black/African American	76	15.8	1.85
White	111	21.3	2.34
More Than One Race	6	21	8.18
Unknown/Not Reported	5	11.2	1.07

Table 1. Age (months) of primary palate repair across patient race cohorts. SEM- standard error of means

Table 3. Age (months) of primary palate repair across patient Insurance payer status at birth

SVI Percentile	n=	Mean Age (mo)	n≤12 (mo)	n>12 (mo)	SEM
>25-50	22	20.41	14	8	5.99
>50-75	21	18.19	10	11	3.28
>75	102	16.32	60	42	1.62

Table 2. Age (months) of primary palate repair across patient SVI quartiles

Insurance Status	n=	Mean Age (mo)	SEM
Self-Pay	4	10.75	0.85
Publicly Insured	116	16.58	1.59
Privately Insured	26	15.88	2.84

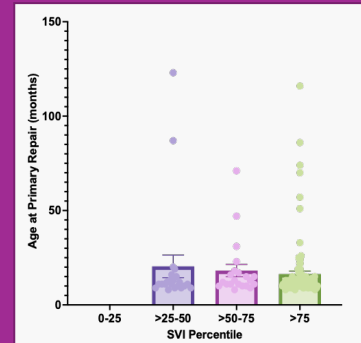


Fig 2. Age at primary repair related to patient SVI quartile

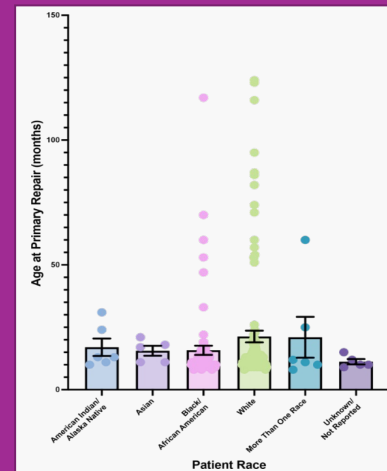


Fig 1. Age at primary repair related to patient race

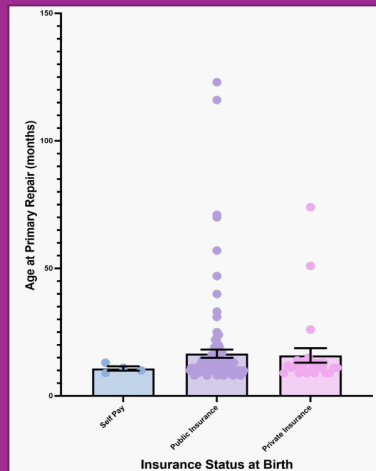


Fig 3. Age at primary repair related to patient insurance payer status at birth

- 216 patients underwent primary cleft palate repair from 2011 to 2021 at the authors' institution.
- Separate Kruskal-Wallis tests for each sociodemographic factor of interest revealed **no main effect on the timing of primary palate repair.**

Patient Race
• (n=204, p=0.17)

SVI Percentile
• (n=145, p=0.49)

Insurance Status at Birth
• (n=208, p=0.53)

Conclusion

- Mississippi consistently has one of the highest poverty levels, lowest median household incomes, and largest racial disparities.⁵
- 51.2% of Mississippians reside in rural areas⁶ and more than 50% of Mississippi's physicians practice in one of the state's four urban areas.⁵
- However, there was **no difference in age at time of primary palate repair** across the sociodemographic patient cohorts.
- This equitable delivery of CP care is made possible by outreach clinics and community education aimed to overcome Mississippi's barriers in healthcare access.
- Monthly pediatric plastic surgery clinics serve orofacial cleft patients in two key locations north and south of Mississippi's centrally located ACPA-approved team - significantly improving access to specialized craniofacial care.
- These clinics also reduced the mean travel time and decreased the financial burdens of travel.

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