

## Introduction

Dental caries is the most prevalent, yet preventable, chronic disease of childhood (DYE 2007). ECC consequences can affect the immediate and long-term quality of life of the child and has significant social and economic consequences (DULGERGIL 2013). Major contributing factors to caries risk in childhood include socioeconomic status, geographic location, access to dental care, and race/ethnicity (SHIBOSKI 2003).

The cost associated with extensive dental treatment under GA poses significant economic consequences. A study examining the cost of preventative treatment for children across six states, the cost savings from topical fluoride and sealants across the six states ranged from \$1.1M/year in Mississippi to \$12.9M/year in Texas at a 10 percent penetration level (LEE 2018). Given limited funds for Medicaid in each state, the investigation of cost-saving measures to prevent the need for GA is important.

One of the most cost-effective methods for improving oral health outcomes is preventative dental care (LEE 2018). Although treatment and associated risks of ECC under GA has been extensively researched, little is known about how preventative dental care may be associated with reductions in GA.

***The objective of this study is to analyze the relationship between the number of preventive dental care visits before the age of two and GA incidence between 3-6 years of age.***

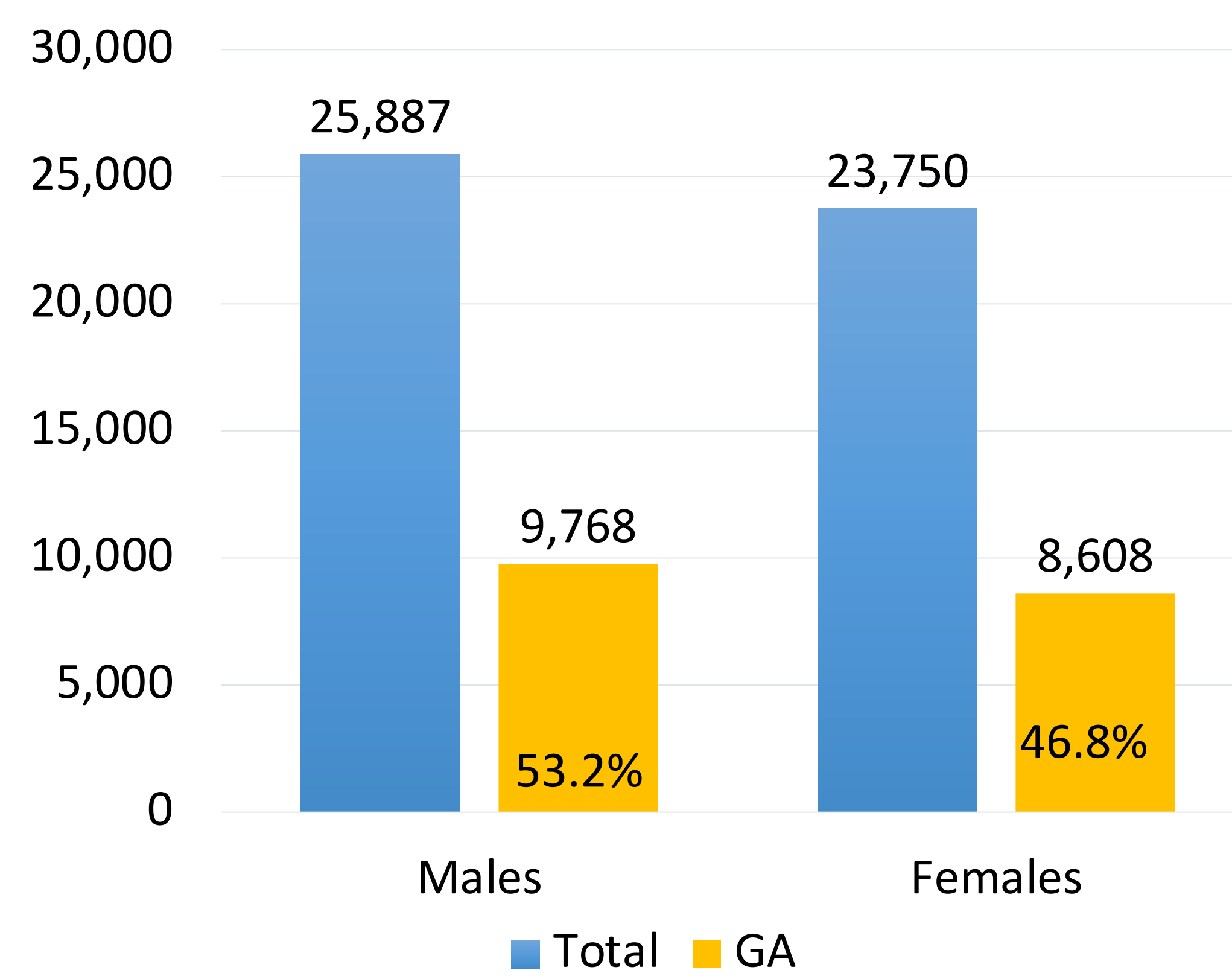
## Materials & Methods

Deidentified insurance claims data were collected for over 3 million children between 2012 and 2017 as part of the nation-wide IBM Watson Health MarketScan Database. Claims data included both public and private insurance.

- ❑ This database was used to identify the initial cohort of 2,880,648 children enrolled in Medicaid and 472,986 commercially insured children between the ages of 6 months and 6 years old.
- ❑ **The primary predictor for this secondary analysis is the number of visits for preventive care. The primary outcome for this analysis is the occurrence of GA.**
- ❑ The association between the predictor and covariate with any GA at the bivariate level were analyzed using the Chi Square test and two multivariable logistic regressions were conducted :
  1. The first model had an outcome of any GA versus no GA and the covariates were insurance type, number of preventive cleanings, race/ethnicity.
  2. The second model had an outcome of two or more instances of GA versus only one.

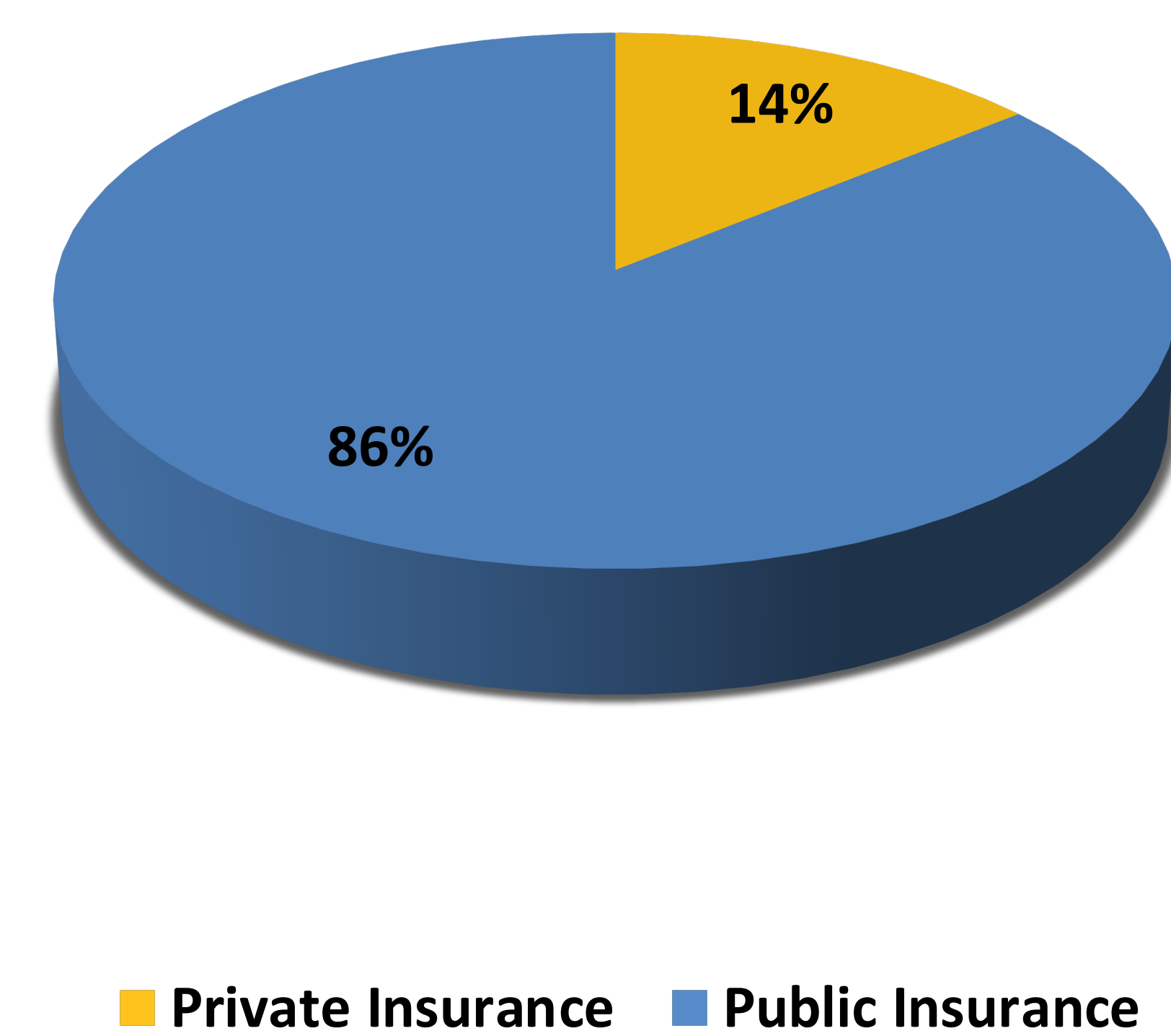
## Results

At the multivariable level, males had a 5% lower odds of not having any GA when compared to females (AOR: 0.946; 95% CI: 0.906-0.987).



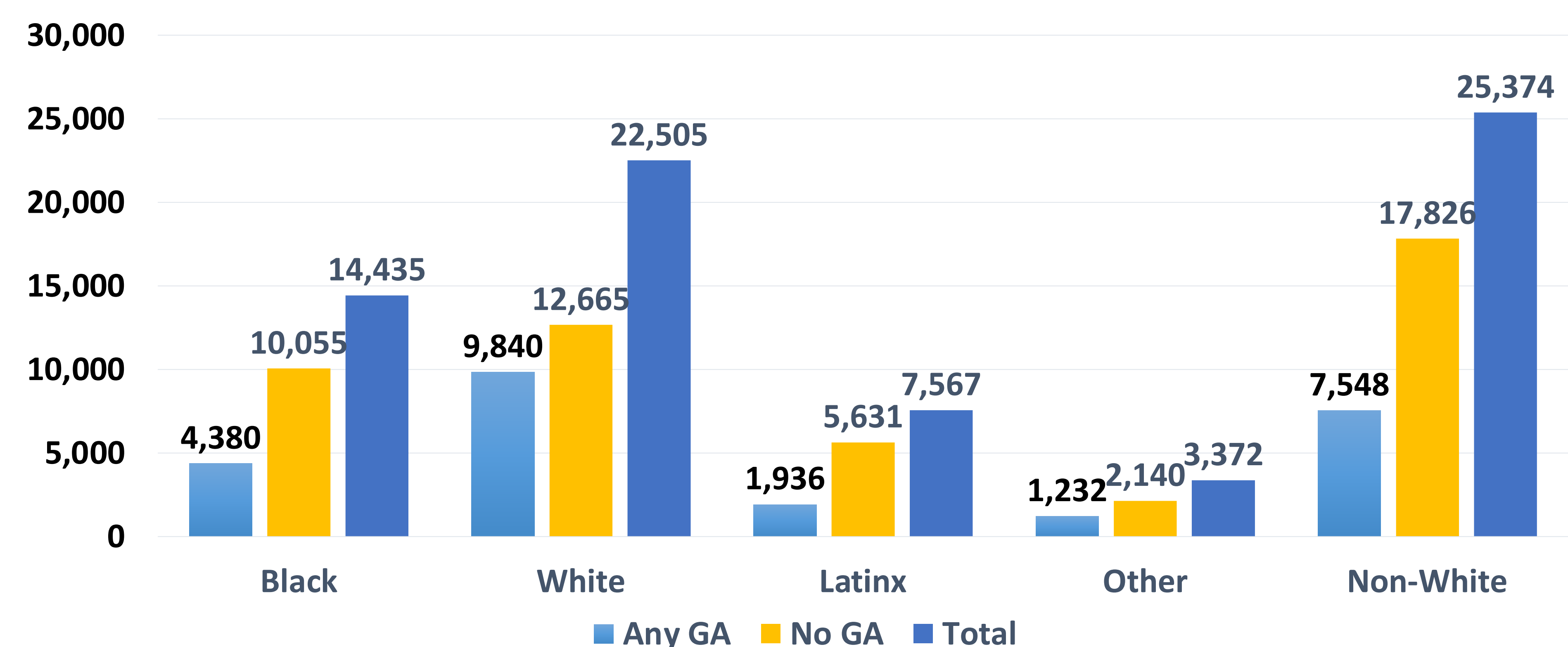
**Figure 1:** Proportion of children under six years of age who had any general anesthesia by sex at birth, CareQuest Dataset, n=47,637, 2012-2017

37% of the total sample had 1-3 or more GA



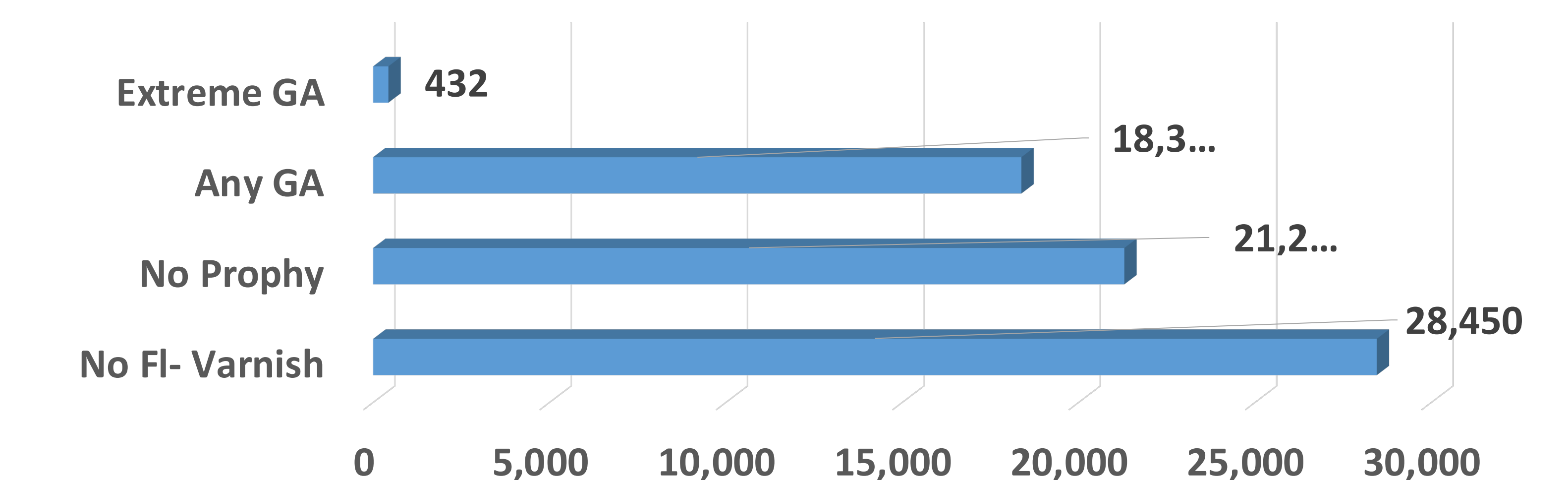
**Figure 2:** Percentage of children between the ages of 6 months and 6 years included in the sample with private insurance and public insurance, CareQuest Dataset, n=3,353,634, 2012-2017

Of those who received any GA, 25.2% were Black, 11.1% were Latinx, 56.7% were White, and 7.1% had an Other race/ethnicity. Blacks had a 60% higher odds, Latinx had a 114% greater odds, and those with an Other race had a 23% greater odds of not having any GA when compared to Whites.



**Figure 3:** Proportion of children under six years of age who had any GA or no GA by race/ethnicity, CareQuest Dataset, n=47,637, 2012-2017

Children who had a prophylaxis had a 237% (14.2-fold) higher odds of not having any GA (OR: 3.369; 95% CI: 3.252-3.491). Those with any fluoride varnish application had 80% lower odds of not having any GA, when compared to those without fluoride varnish. (OR: 1.426; 95% CI: 1.398-1.455).



**Figure 4:** Proportion of children under six years of age who had No Preventive treatment and GA vs Extreme GA (Multiple Occurrences) utilization, CareQuest Dataset, n = 47,637, 2012-2017

## Conclusion

- ❑ **Individuals who had more prophylactic cleanings were significantly less likely to have treatment under GA.**
- ❑ **Individuals who had fluoride varnish application were also significantly less likely to have treatment under GA.**
- ❑ **Each additional year of age at first prophylactic visit was associated with a 33% lower odds of two or more occurrences of GA (extreme GA).**
- ❑ **Each additional prophylactic visit was associated with a 14% lower odds of extreme GA.**
- ❑ **Black children have a 48% lower odds of extreme GA when compared to White children.**
- ❑ **There was no significant association detected between Latinx and Other races compared to White.**
- ❑ **There was no association detected between either birth sex or fluoride treatments and the extreme GA outcome.**

## References

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