

Time is Money: *Socioeconomic Disparities in Tonsillectomy Access*

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Abstract

Background:

Tonsillectomies are amongst the most commonly performed surgeries in the pediatric population, with nearly 500,000 operations yearly. Socioeconomic status (SES) and insurance status influence healthcare access and outcomes. In pediatric otolaryngology, disparities in surgical timing and patient burden remain underexplored. This study investigates the impact of insurance type and SES on tonsillectomy access using time-based metrics and demographic indicators.

Purpose:

To investigate impact of SES and insurance type on tonsillectomy access using time-based metrics and demographic indicators.

Methods:

We performed a retrospective chart review of pediatric patients (<18 years) who underwent tonsillectomy with and without adenoidectomy within the Ochsner LSU Health Shreveport system from January 1 to July 30, 2025. Adenoidectomy surgeries alone were excluded from the study. Demographic and clinical variables included insurance type, race, median household income by ZIP code, preoperative BMI, apnea-hypopnea index, age at surgery, distance to hospital, and surgical diagnosis. To obtain this data, the 2023 US Census Bureau was used. Distance was defined using Google Maps, where the patient's listed home address was used to calculate the mileage of the quickest route to Ochsner LSU Shreveport. The diagnosis of obstructive sleep apnea, or OSA, was defined as an AHI>1 on polysomnogram. Socioeconomic status was stratified into three income groups per the US Census Bureau (<\$30,000; \$30,001–\$58,020; \$58,021–\$94,000), and access to care was assessed using time from referral order placed to initial ENT evaluation, ENT evaluation to surgery, and referral to surgery. Statistical analyses included ANOVA, Welch's t-test, Pearson's chi-square, and Fisher's exact test. This study was approved by the LSU Institutional Review Board October 22, 2025.

Results:

A total of 611 charts were reviewed; 95 met inclusion criteria. The cohort was 46.3% male with an average age of 9.88 ± 4.26 years. Most patients were publicly insured or uninsured (87.4%), while 12.6% had private insurance coverage. SES analysis revealed significant disparities in age at time of tonsillectomy, BMI, and distance traveled to the hospital. Patients in the lowest SES group were older at time of surgery (p = 0.017) and had significantly higher BMI values (p < 0.001) compared with higher-SES patients. Distance traveled to the hospital also differed significantly across SES groups (p = 0.033). No significant differences were observed in surgical timing metrics across SES groups or by insurance status. Age at the time of surgery, BMI, and distance to hospital were also not significantly associated with insurance status.

Conclusion:

While insurance type did not impact access or demographic variables, SES was associated with increased age, BMI, and travel burden among lower SES patients. These findings underscore the need for targeted strategies to mitigate socioeconomic barriers in pediatric otolaryngology.

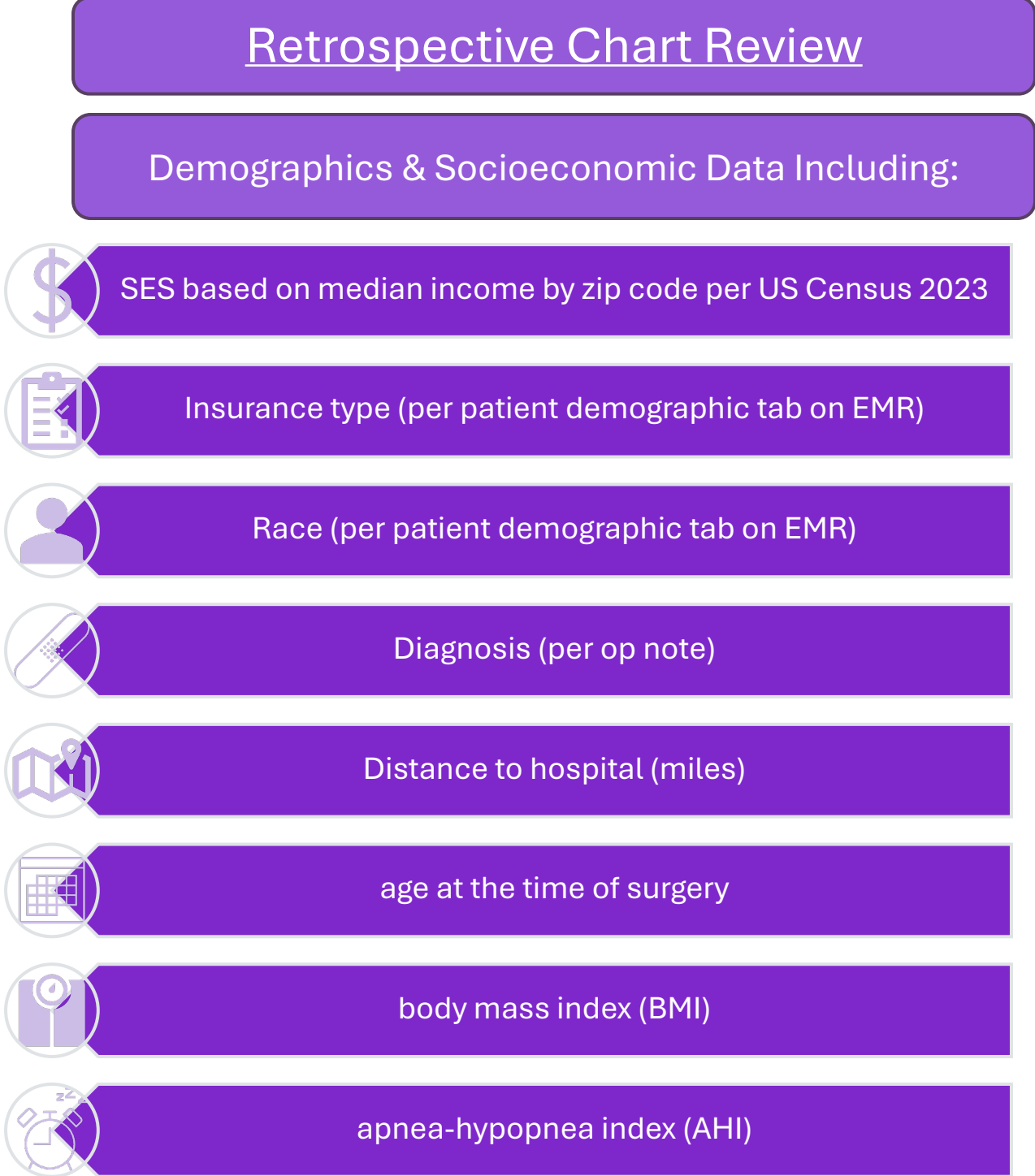
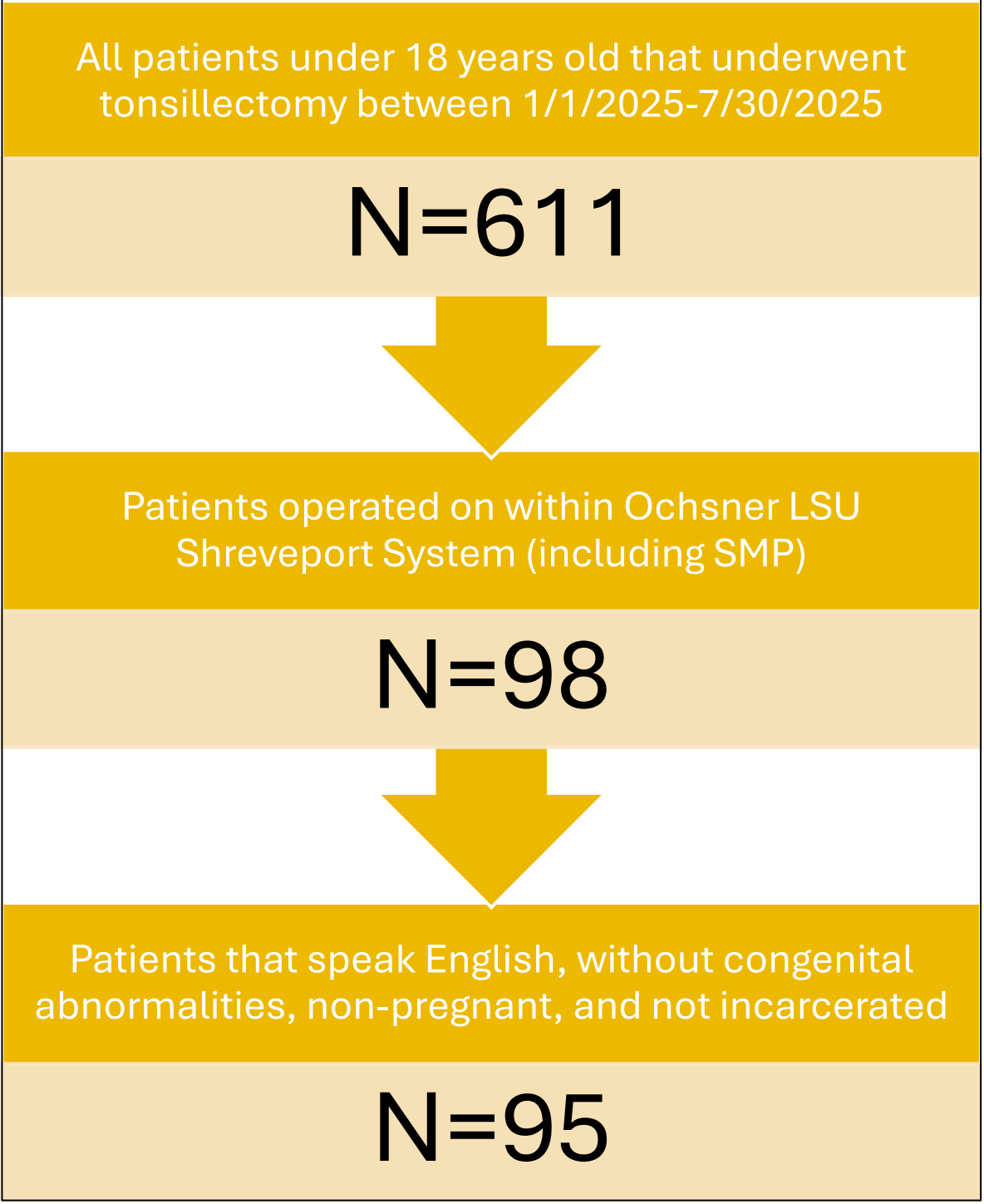
Results

Variable	SES Group 1 (<\$30k, n=25)	SES Group 2 (\$30,001–58,020, n=48)	SES Group 3 (\$58,021–94,000, n=25)	p-value (3-group ANOVA)	SES Group 2+3 Combined (n=73)	p-value (Welch's t-test, SES1 vs SES2+3)
Age (years)	11.92 ± 3.77	9.29 ± 3.9	8.88 ± 4.63	0.015*	9.15 ± 4.14	0.003*
BMI	29.74 ± 7.54	21.96 ± 6.95	22.78 ± 7.05	<0.001*	22.23 ± 6.95	<0.001*
AHI	13.96 ± 36.39	9.46 ± 9.75	8.71 ± 10.94	0.822	9.10 ± 10.13	0.632
Distance to Hospital (miles)	38.88 ± 45.19	61.83 ± 56.98	30.13 ± 40.99	0.026*	50.97 ± 53.93	0.278
Referral to initial ENT visit (days)	155 ± 104.73	158.47 ± 114.59	187.35 ± 232.91	0.701	167.96 ± 161.98	
Initial ENT visit to OR (days)	233.68 ± 508.33	102.35 ± 166.03	171.2 ± 208.27	0.20	125.93 ± 183.13	
Referral to OR (days)	388.68 ± 486.14	258.51 ± 192.68	369.17 ± 297.51	0.183	294.87 ± 236.03	

SES x Diagnosis				
Diagnosis	SES1 (n=25)	SES2 (n=46)	SES3 (n=24)	p-value
OSA, n (%)	15 (60.0%)	15 (32.6%)	13 (54.2%)	0.051*
SDB, n (%)	5 (20.0%)	15 (32.6%)	4 (16.7%)	0.27
Tonsillar / adenoid hypertrophy, n (%)	14 (56.0%)	30 (65.2%)	16 (66.7%)	0.683
Recurrent tonsillitis / pharyngitis, n (%)	13 (52.0%)	29 (63.0%)	12 (50.0%)	0.492

Insurance x Diagnosis			
Diagnosis	Public/No Insurance (n=83)	Private (n=12)	p-value
OSA, n (%)	37 (44.6%)	6 (50%)	0.761
SDB, n (%)	20 (24.1%)	4 (33.3%)	0.481
Tonsillar / adenoid hypertrophy, n (%)	50 (60.2%)	10 (83.3%)	0.118
Recurrent tonsillitis / pharyngitis, n (%)	50 (60.2%)	4 (33.3%)	0.102

Methods



Variable	Public/No Insurance (n=86)	Private (n=12)	p-value
Age (years)	9.97 ± 4.19	9.08 ± 4.44	0.527
BMI	24.42 ± 7.61	21.42 ± 8.49	0.267
AHI	11.84 ± 24.37	4.06 ± 2.15	0.078
Distance to Hospital (miles)	48.34 ± 53.05	44.64 ± 44.54	0.796
Referral to initial ENT visit (days)	165.4 ± 149.59	158 ± 147.91	0.879
Initial ENT visit to OR (days)	158.76 ± 316.74	115.17 ± 160.91	0.457
Referral to OR (days)	325.24 ± 332.56	276.18 ± 218.02	0.522

Demographics

DEMOGRAPHICS	OVERALL COHORT (N=98)
Age (years)	9.86 ± 4.21
Male sex, n (%)	47 (48.0%)
Female sex, n (%)	51 (52.0%)
BMI, mean ± SD	24.03 ± 7.75
AHI, mean ± SD	10.85 ± 22.88
Distance to Hospital (miles), mean ± SD	47.89 ± 51.89
Insurance, n (%)	
Public/No insurance	86 (87.8%)
Private	12 (12.2%)
Timing Metrics	
Referral to initial ENT visit (days)	164.55 ± 148.64
Initial ENT visit to OR (days)	153.42 ± 301.75
Referral to OR (days)	319.56 ± 320.87

Discussion

 Lower SES is associated with delayed treatment and worse health outcomes Improved education at well child visits, public outreach with easily understood pamphlets, and better public transport	 Access to care remains the primary driver for these disparities. Community outreach events to educate parents and screen children	 Implementing a provider or medical professional that patients can access within their means School nurse in conjunction with local pediatrician/ENT network, APPs
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Conclusion



Patients with a median yearly income of less than \$30k face significant disparities when it comes to tonsillectomy access and overall health



Access to care starting from referral to ENT to the OR were not significant→ emphasizes disparities from initial contact when seeking treatment



Community outreach such as pediatrician and parental education on signs and symptoms to look out for when considering a tonsillectomy needed



On a state level, public dollars may be best spent implementing a medical professional in schools to help document and treat children while also reducing financial strain on parents

