



Geographic Distance from a Tertiary Care Center effects Timing of Reconstruction in Head & Neck Cancer Patients

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Background

Advanced cancers of the head and neck (H&N) are treated with resection and reconstruction using microsurgical free flaps. However, microsurgical reconstruction demands highly specialized training and is often limited to large academic centers. This has the potential to severely restrict patient access to treatment.

Purpose

- Examine the effects of race, insurance status, social vulnerability index (SVI), and geographic distance to Mississippi’s only academic institution on H&N reconstruction
- Identify key risk factors for delays in care

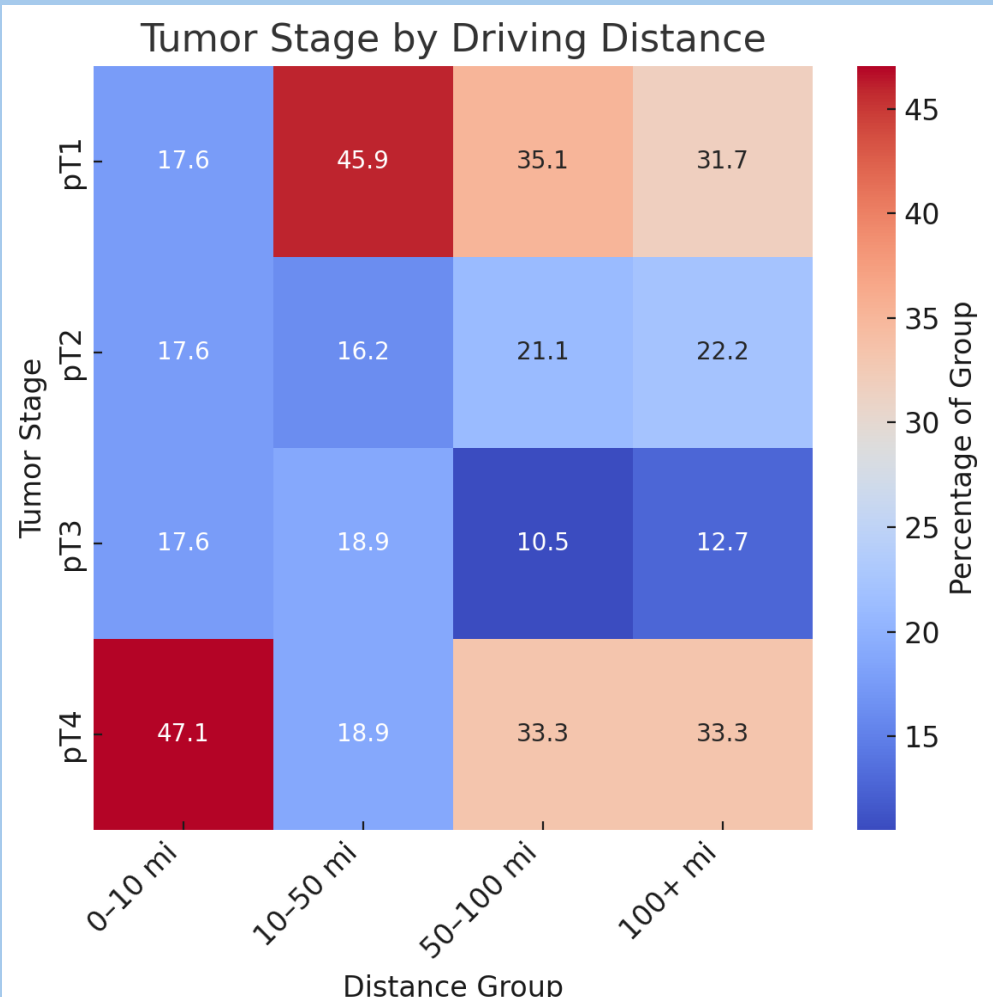
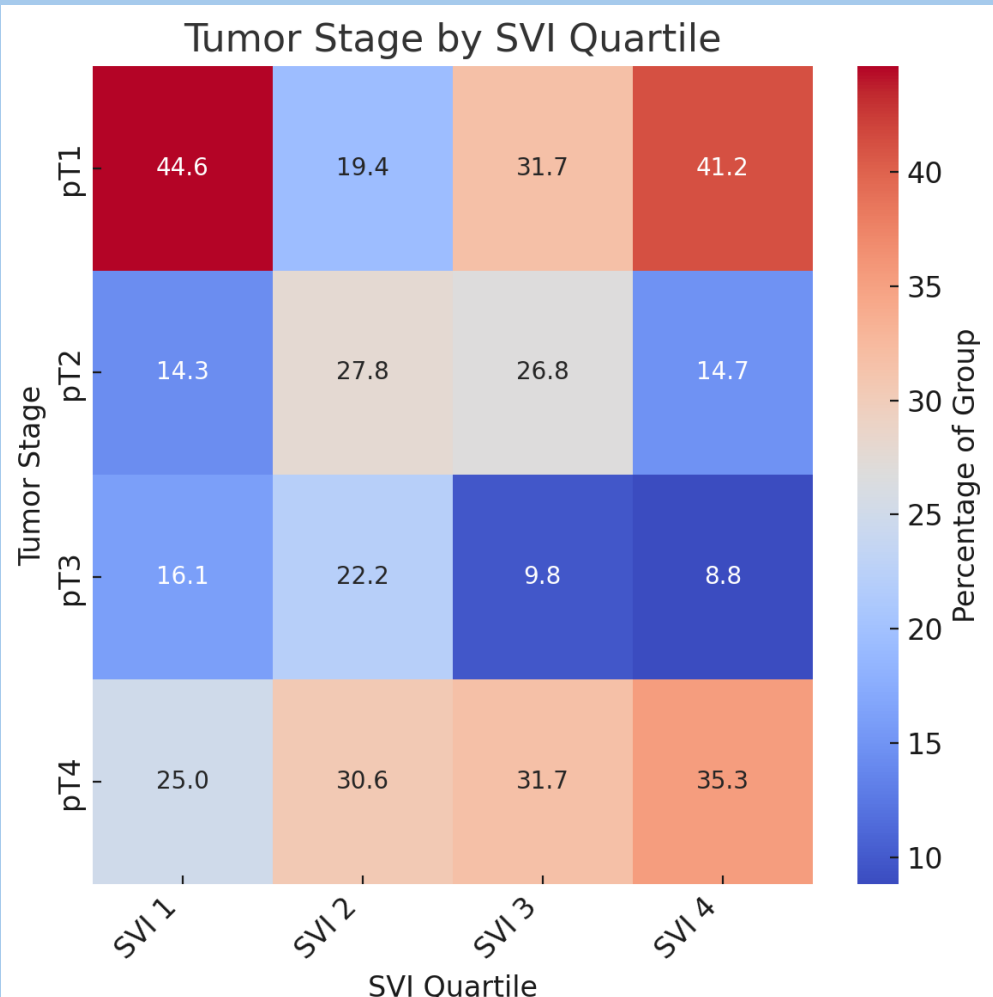
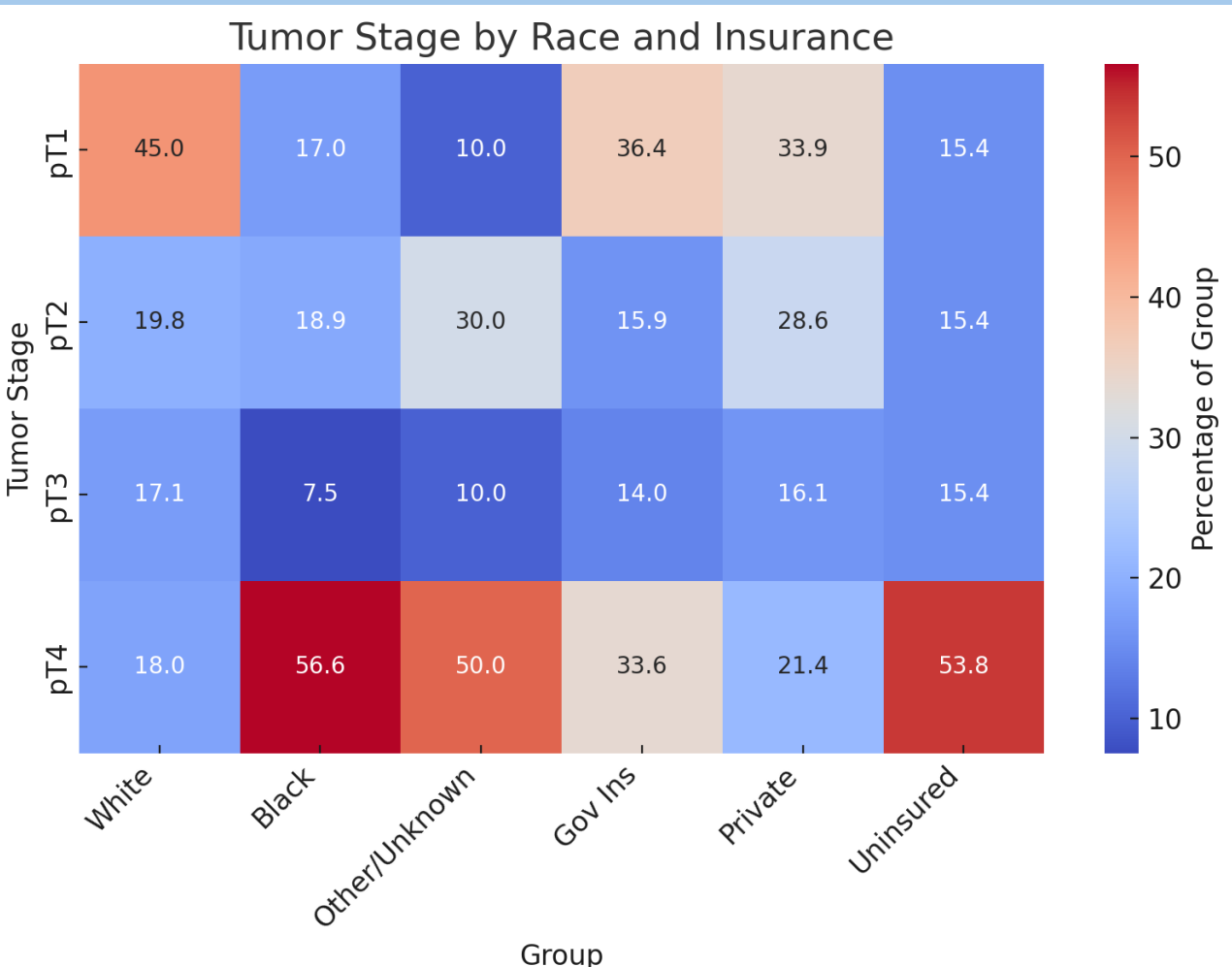
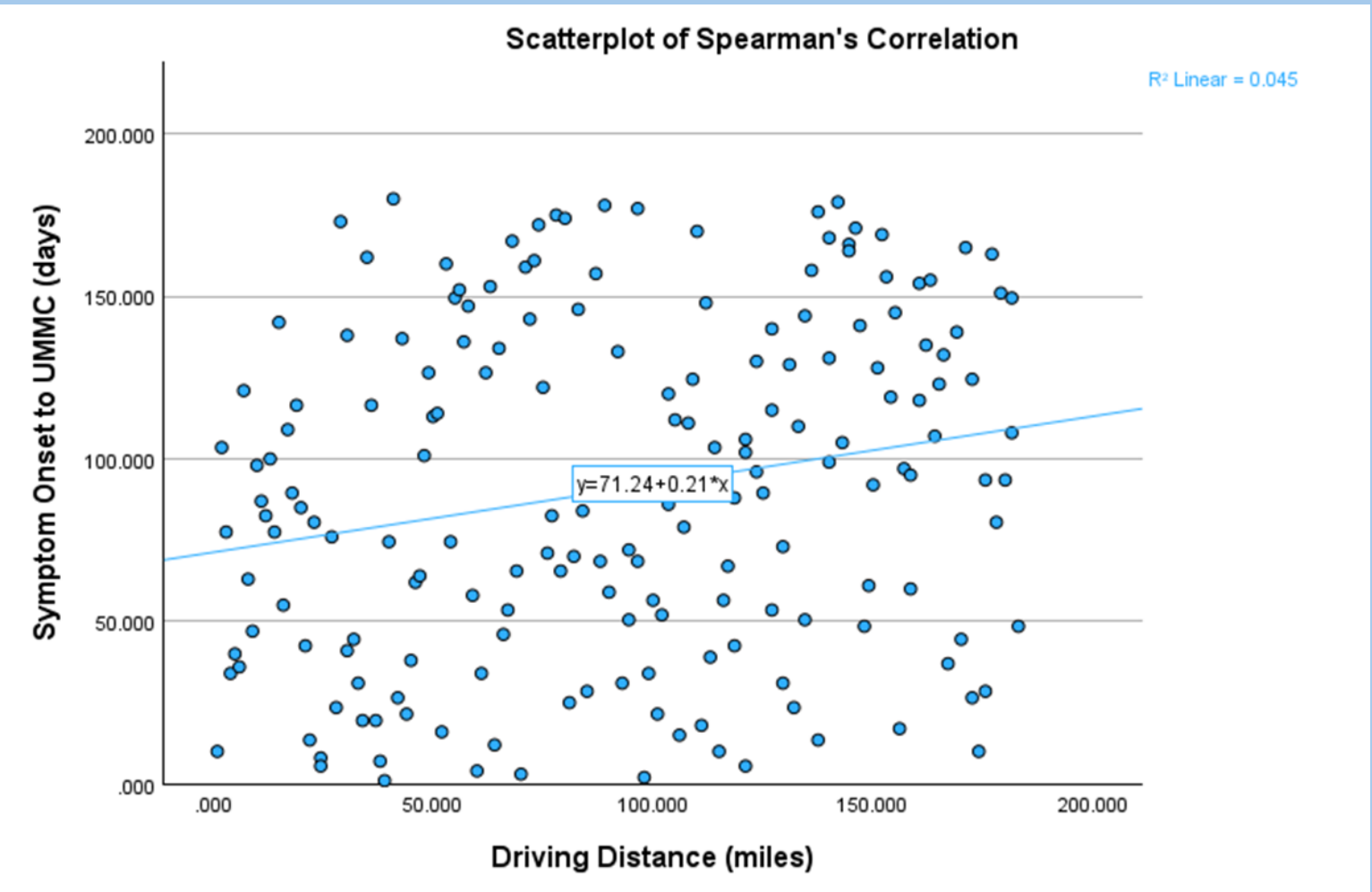
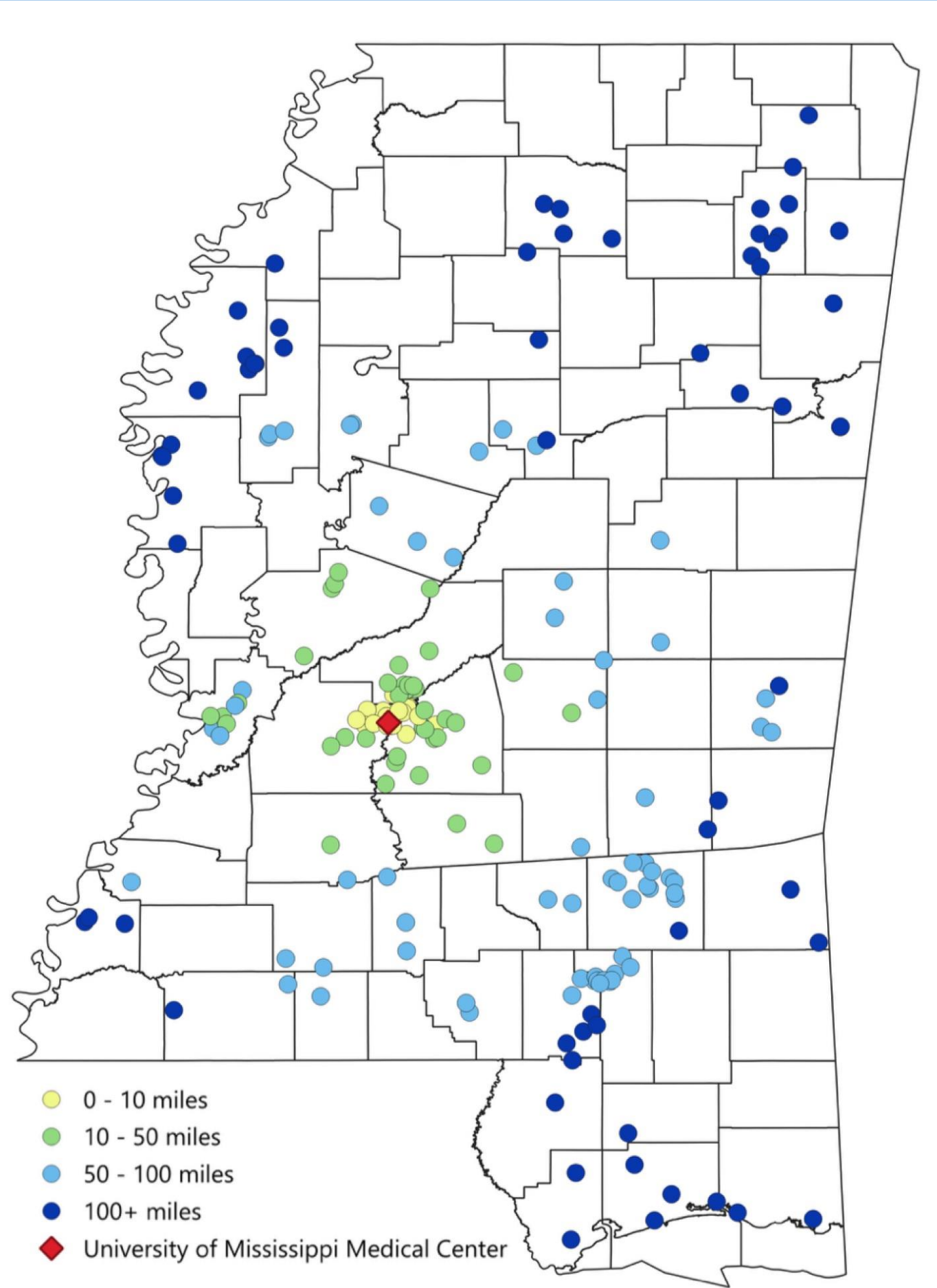
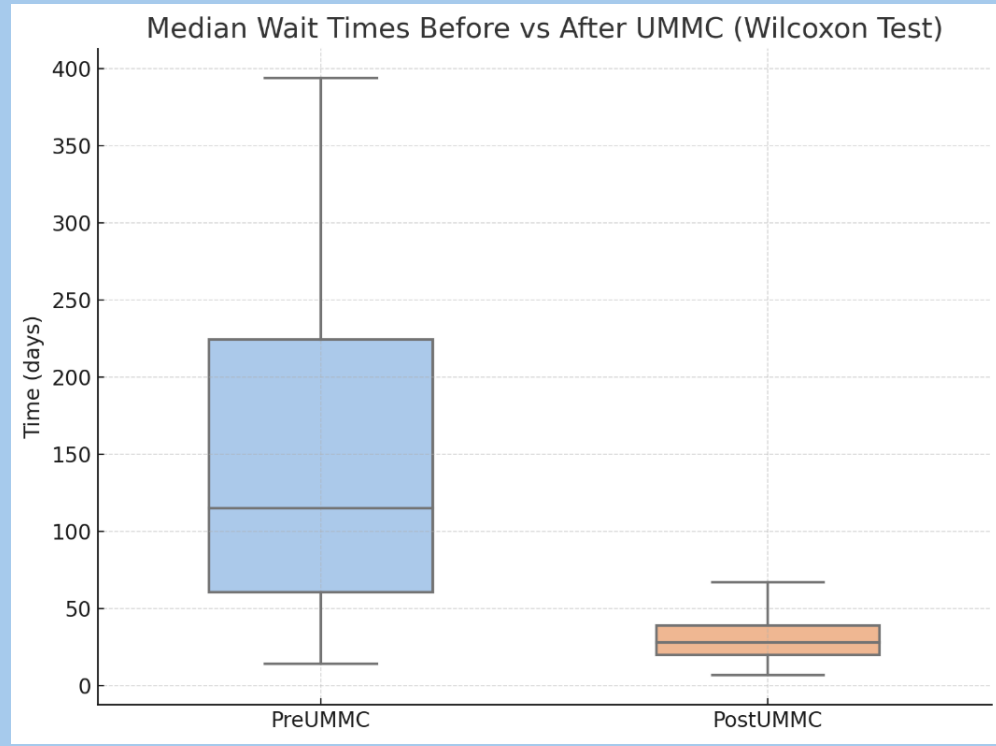
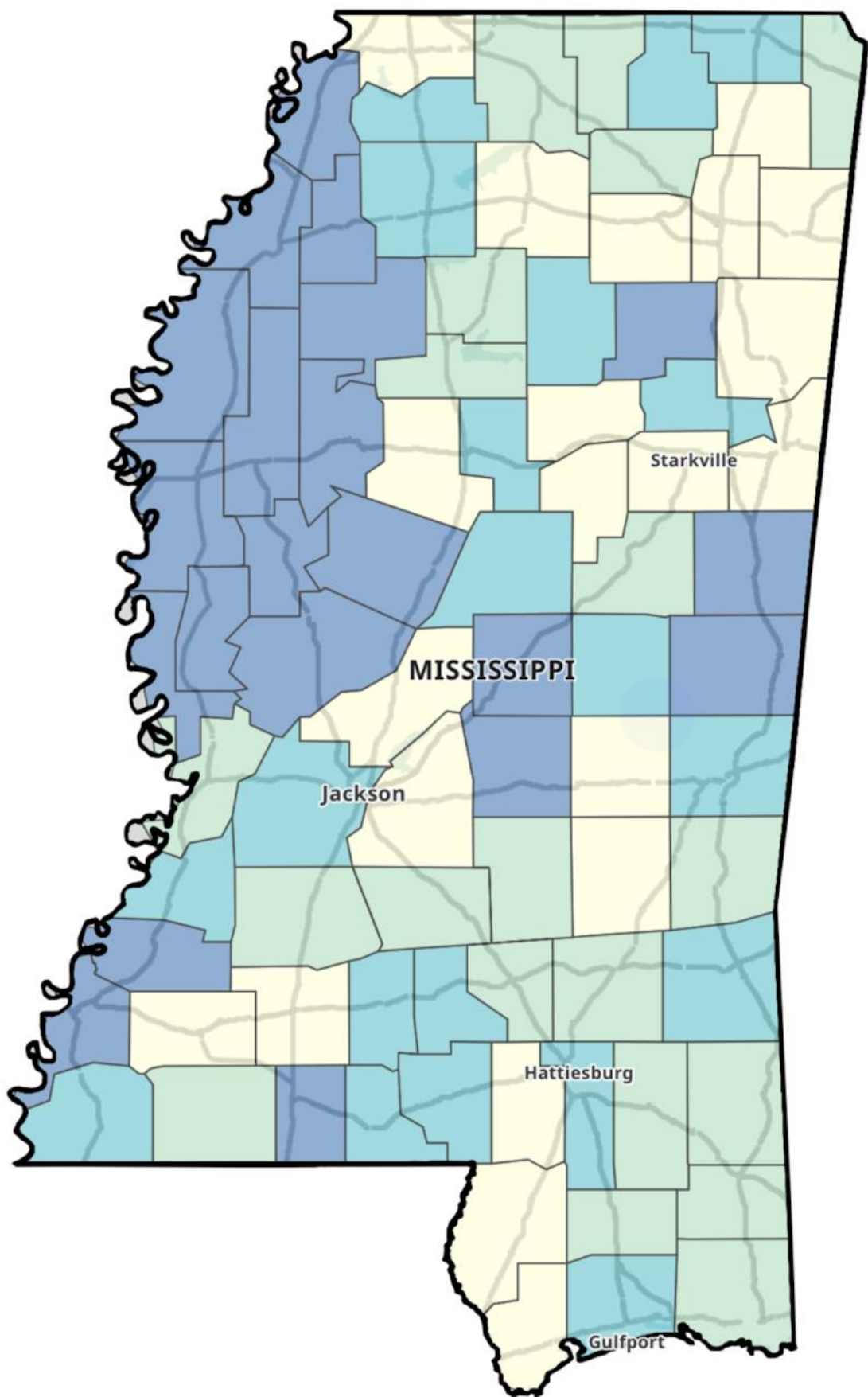
Methods

- Design:** Retrospective review from 2016 – 2024 of all plastics H&N free flap patients
- Patients:**
 - 180 adults with HNC undergoing resection & free-flap reconstruction
- Patient cohorts created based on:**
 - Race (White, African-American, unknown/other)
 - Insurance status (uninsured/self-pay), government, private)
 - SVI (<45%, 26-50%, 51-75%, >75%)
- Timeline intervals:**
 - Pre-UMMC: symptom onset → first UMMC visit
 - Post-UMMC: first UMMC visit → surgery
- Statistical analysis:** Kruskal-Wallis test, chi-square analyses, Wilcoxon signed-rank tests, Levene’s test, & Spearman correlations

Results

Variable	Category	n (%)
Sex	Male	112 (62.2%)
	Female	68 (37.8%)
Race	White	127 (70.6%)
	Black	43 (23.9%)
	Other/Unknow n	10 (5.6%)
Age at Surgery	>60 years	Majority
Insurance Status	Government (Medicare/Medicaid)	108 (60.0%)
	Private	57 (31.7%)
	Uninsured/Self-pay	15 (8.3%)
SVI Quartile	SVI 1 (least vulnerable)	58 (32.6%)
	SVI 4 (most vulnerable)	40 (22.5%)
Driving Distance to UMMC	SVI 2, 3	Not specified
	0–10 miles	17 (9.4%)
	10–50 miles	38 (21.1%)
	50–100 miles	60 (33.3%)
	>100 miles	65 (36.1%)

Tumor Stage (pT)	n (%)
pT1	60 (34.5%)
pT2	35 (20.1%)
pT3	24 (13.8%)
pT4	55 (31.6%)
Most Common Diagnosis	Squamous Cell Carcinoma (84.4%)



Discussion

This study highlights persistent access disparities in HNC care across Mississippi. Patients from the most socially vulnerable communities experienced the longest delays before reaching tertiary care, particularly those from the Mississippi Delta. Driving distance was also a significant barrier to timely care. Although race and insurance alone were not independently associated with delays, they were intertwined with other factors like social vulnerability and tumor severity. Black patients were more likely to reside in high-SVI areas and present with advanced tumors, reflecting structural inequities in early detection and referral.

Encouragingly, once patients entered the UMMC system, timing to surgery was equitable. However, the major bottleneck remains upstream—prior to institutional contact—indicating the need for targeted outreach, streamlined referral networks, and transportation support, particularly in rural, high-SVI communities.

Implications & Future Directions

- Use SVI to identify at-risk populations
- Strengthen rural referral and navigation pathways
- Expand mobile screening, telehealth, & community outreach
- Policy focus on early access, not just treatment equity
- Encourage further research on the impact of sociodemographic factors on treatment outcomes

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