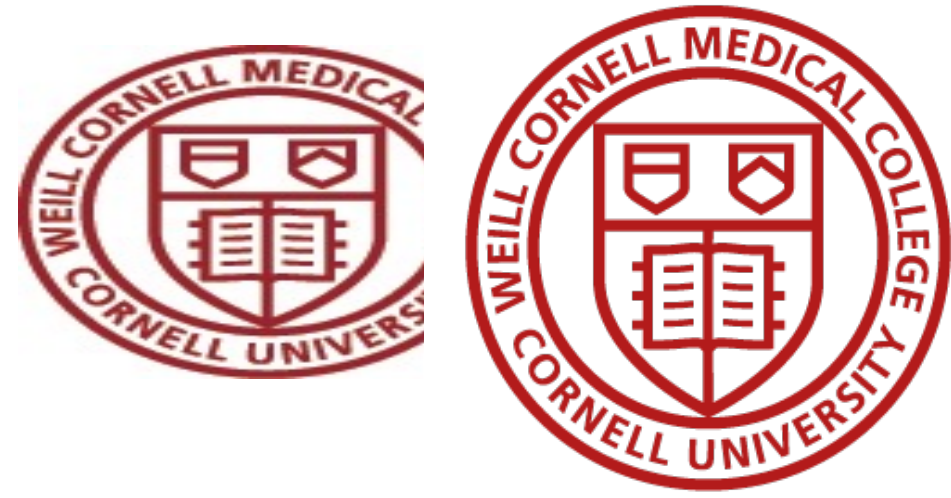




Head and Neck Reconstruction and Relative Disincentives to Surgical Reconstruction

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INTRODUCTION & BACKGROUND

HPV-negative head and neck squamous cell carcinoma (HNSCC) is a high-risk cancer with a 10-year mortality rate 30% lower than HPV-positive disease¹. Patients with HPV-negative disease are more likely to be non-white and of lower socioeconomic status², and thus more likely to experience care disparities. Financial support for head and neck (HNC) care is critical for ensuring equitable access to care. Examining non-profit support, reimbursement rates and hospital-associated costs for HNC patients relative to other patients requiring complex reconstruction may reveal care disparities.

METHODS

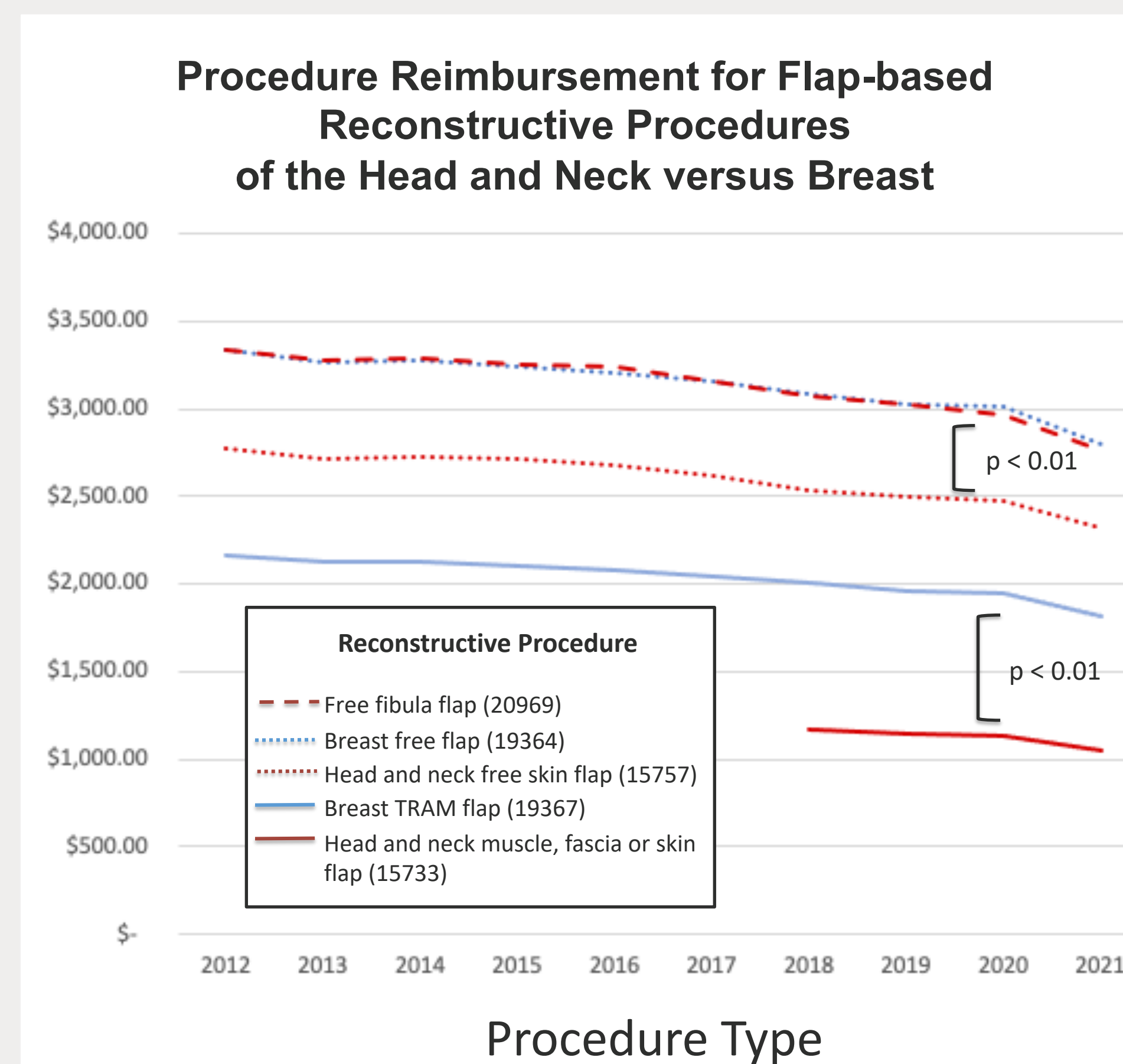
Reimbursement data from HNC and breast cancer (BC) reconstructive procedures was abstracted from the Centers for Medicare and Medicaid Services Physician Fee Schedule Look-Up Tool. Patient-level data for 2015 to 2017 was acquired from the New York State (NYS) Department of Health. Inflation-adjusted reimbursement values from 2012 to 2021 were compared using Student’s t-test. Wilcoxon-Mann-Whitney tests were used for inter-group analyses. Analysis was completed in R Studio (v1. 3.1).

RESULTS

Nonprofit & Research Support

- Breast cancer has 9x more support groups, 13x more tax-exempt organizations, 5x more research grants and 9x more research funding than head and neck cancer
- Discrepancy in research and nonprofit support for head and neck versus breast cancer is disproportional to their relative share of Disability-Adjusted Life Years (DALY) lost in the United States (2.1% versus 9.4%).

	Head and Neck Cancer	Breast Cancer
Support Groups	1	9
Tax-Exempt Organizations	49	664
ACS Research Grants Awarded	27	153
NIH Research Grants Awarded	391	1,867



Procedure Reimbursement for Flap-based Reconstruction

- Procedure reimbursement for flap-based procedures of the head and neck are significantly lower than comparable breast procedures
- This discrepancy was widest between the head and neck muscle, fascia or skin flap and the breast TRAM flap (p < 0.05)
- Reimbursement for breast free flap was nearly equal to that of a free fibula flap, despite increased complexity of osteocutaneous flap-based procedures

	Head and Neck Cancer	Breast Cancer	P-value
Length of Stay	9.17	2.18	< 0.01
Charges	\$135,239	\$60,078	< 0.01
Charges per Day Hospitalized	\$18,380	\$34,110	< 0.01
Costs	\$45,981	\$19,363	< 0.01
Costs per Day Hospitalized	\$6,254	\$11,029	< 0.01

Costs, Charges and LOS for HNC versus BC-related NYS Hospitalizations

- HNC patients have longer lengths of stay, lower costs per day hospitalized, and higher overall costs than BC patients
- In New York State, hospital reimbursement for BC patients is >\$10,000 more per day than HNC patients

CONCLUSION

Nonprofit and research support is lower for HNC than BC. Reimbursements for HNC reconstructive procedures are significantly lower than BC procedures of comparable work effort. HNC patients have longer lengths of stay and generate lower revenue than patients undergoing breast reconstruction. These discrepancies may financially disincentivize investment in care for HNC patients and limit future access to care in this high-risk patient population.

¹Du, E., Mazul, A. L., Farquhar, D., Brennan, P., Anantharaman, D., Abedi-Ardekani, B., Weissler, M. C., Hayes, D. N., Olshan, A. F., & Zavallos, J. P. (2019). Long-term Survival in Head and Neck Cancer: Impact of Site, Stage, Smoking, and Human Papillomavirus Status. *The Laryngoscope*, 129(11), 2506–2513. <https://doi.org/10.1002/lary.27807>

²Rettig, E. M., & D’Souza, G. (2015). Epidemiology of Head and Neck Cancer. *Surgical Oncology Clinics of North America*, 24(3), 379–396. <https://doi.org/10.1016/j.soc.2015.03.001>