

# #P312 Socioeconomic and Geographic Disparities in Immediate Reconstruction after Mastectomy in the United States

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#### Introduction

Disparities are found in breast cancer diagnosis, treatment, and outcomes. We seek to determine if socioeconomic and geographic disparities exist nationally in immediate reconstruction type after mastectomy.

### Methods

This retrospective study compares socioeconomic and geographic features for 14,986 women who underwent mastectomy in 2008 using the Nationwide Inpatient Sample (NIS), an all-payer stratified statistical sample of all US hospital discharges. Statistical analysis was performed to understand variations between three groups: patients without reconstruction (NR), patients who underwent breast implant/ tissue expander reconstruction (TE), and patients with advanced reconstruction techniques such as free or pedicled flaps (FLAP).

# Results

The majority of women (63%) had no reconstruction (NR), while 25.3% had TE and 12% underwent FLAP. Compared to patients with NR, women with TE or FLAP were younger (64.9 years vs. 51.3 & 51.1 years, p<0.001), had fewer chronic conditions (3.85 NR vs. 2.60 TE & 2.54 FLAP conditions, p<0.001), and higher mean hospital charges (\$22,300 NR vs. \$42,850 TE and \$48.680 FLAP, p<0.001). The length of stay was longest for FLAP patients (3.62 days) compared to the NR group (2.02 days) and the TE group (1.90 days), p<0.001.

Table 1: Demographic Factors of Mastectomy Patients by Reconstruction Type

	No Reconstruction (%)	Implant/Expander (%)	FLAP (%)	Total	P Value
N	9441 (63.0%)	3526 (23.5%)	1797 (12.0%)	14986	
Age (mean years)	64.9	51.3	51.1		p<0.001
Length of Stay (mean days)	2.0	1.91	3.62	2.21	p<0.001
Number of Chronic Conditions (mean number)	3.8	2.6	2.54	3.39	p<0.001
Total Charges (mean \$)	22081	42854	48712	30471	p<0.001
Insurance Type (n)					
Medicare	4846 (51.4%)	437 (12.8%)	124 (9.04%)	5533	p<0.001
Medicaid	824 (8.7%)	145 (4.2%)	67 (4.9%)	1076	
Private inc HMO	3321 (35.2%)	2747 (80.1%)	1112 (81.1%)	7723	
Self Pay	133 (1.4%)	33 (1.0%)	17 (1.2%)	190	
No Charge	54 (0.6%)	8 (0.2%)	1 (0.1%)	65	
Other	259 (2.7%)	58 (1.7%)	50 (3.7%)	390	
Race (n)					
White	5669 (74.4%)	2319 (80.3%)	880 (76.4%)	9347	p= 0.07
Black	876 (11.5%)	202 (7.0%)	115 (10.0%)	1250	
Hispanic	539 (7.1%)	166 (5.8%)	75 (6.5%)	823	
Asian/Pacific	313 (4.1%)	104 (3.6%)	39 (3.4%)	473	
Native American	35 (0.5%)	6 (0.2%)	5 (0.4%)	49	
Other	190 (2.5%)	91 (3.2%)	38 (3.3%)	335	
Median Income for Zipcode					
\$1- \$39K	2479 (26.8%)	402 (11.6%)	266 (15.0%)	3147	p<0.001
\$39K- \$48K	2528 (27.3%)	650 (18.7%)	368 (20.8%)	3546	
\$48-63K	2220 (24.0%)	900 (25.9%)	425 (24.0%)	3545	
\$63K +	2038 (22.0%)	1518 (43.8%)	712 (40.2%)	4268	
Location					
>1Million	2619 (28.8%)	1087 (33.8%)	589 (35.9%)	4380	p<0.001
Fringe of City > 1 Million	1862 (20.5%)	1032 (32.1%)	490 (29.9%)	3428	
Metro 250K - 999K	1766 (19.4%)	562 (17.5%)	263 (16.1%)	2631	
50-250K	951 (10.5%)	199 (6.2%)	124 (7.6%)	1288	
Micropolitan counties	1091 (12.0%)	208 (6.5%)	111 (6.8%)	1433	
Not metro/micro	800 (8.8%)	124 (3.86%)	62 (3.8%)	995	

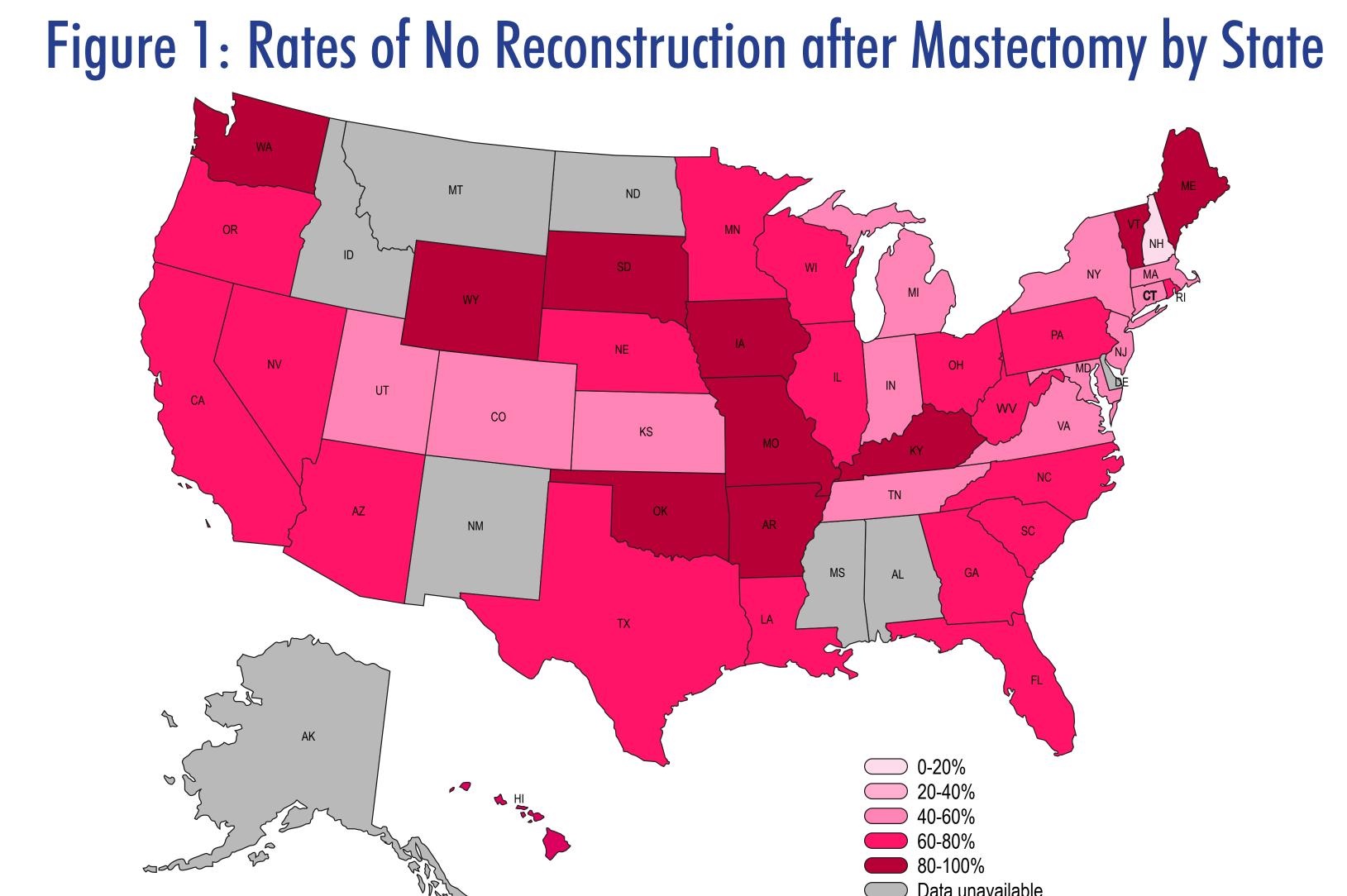


Figure 2: Rates of Tissue Expander/ Implant Reconstruction by State

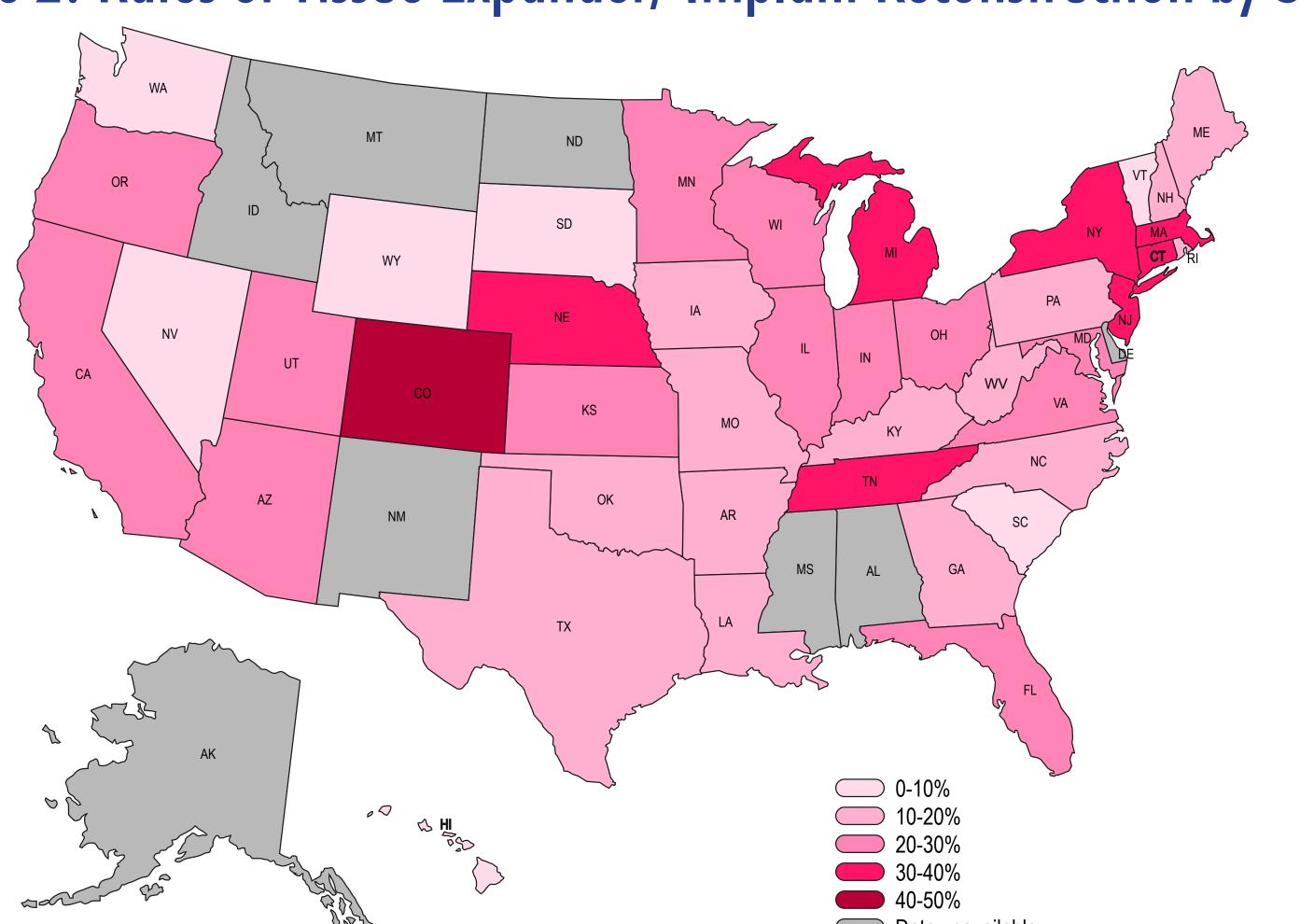
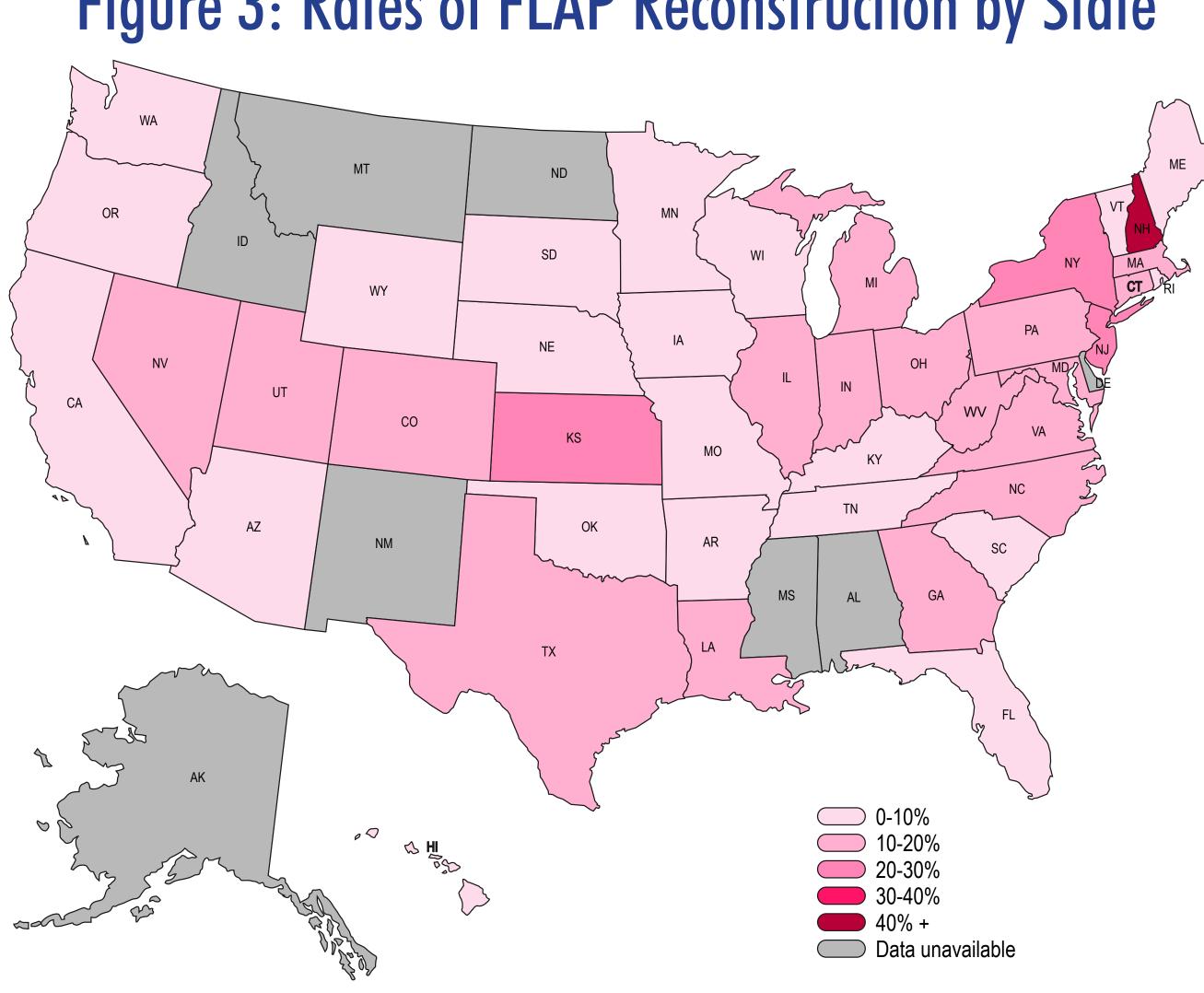


Figure 3: Rates of FLAP Reconstruction by State



## Results, continued

Caucasians were disproportionately more likely to undergo both TE and FLAP compared to Black and Hispanic women. Patients with FLAP reconstruction were more likely to have private insurance (81.1%), than TE (80.1%) and NR (35.2%) while women without reconstruction were more likely to have Medicare and Medicaid insurance. Compared to NR, those undergoing reconstructions were more likely to live in zip codes with higher average incomes and more likely to live in or near a major city (>1 million people).

The states with the highest rates of mastectomy without reconstruction of the breast include Hawaii, South Dakota, Vermont, and Wyoming (all 100%). The states with the highest rates of reconstruction with tissue expander/implants are Colorado (41.0%), Massachusetts (38.5%), Tennessee (36.9%), and Connecticut (35.6%). The states with the highest rates of FLAP reconstruction are New Hampshire (52.9%), Kansas (22.6%), New York (20.9%), and New Jersey (20.0%).

#### Conclusion

This is the first national study analyzing patients of all insurance types and regions of the US to show statistically significant disparities in the type of immediate reconstruction after mastectomy based on age, race, insurance type, and geographic location.

#### **Disclosures**

The authors have no financial disclosures