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**Breast Reconstruction Disparities Improve Dramatically with Medicaid Expansion**

**New Study Finds Racial/Ethnic, Income and Educational Parity Correlate with Broader Coverage**

***Abstract: Improvement in Breast Reconstruction Disparities Following Medicaid Expansion Under the Affordable Care Act***

**Columbia, MD, April 29, 2021**—Medicaid expansion under the Affordable Care Act was associated with significant increases in breast reconstruction among non-Hispanic Black (NHB) women, achieving parity at times with non-Hispanic White (NHW) women, according to a new study presented this week at the American Society of Breast Surgeons (ASBrS) Annual Meeting. The study also found a significant growth in reconstruction rates among women with lower income and education levels during the same time period.

“In the past, it has been well reported that the rate of breast reconstruction following mastectomy as well as interventions consistent with high quality care have been consistently lower among black than white women,” says Sharon Lum, MD, Loma Linda University Health, lead researcher of the study. “The timeline for broadening Medicaid qualification criteria, providing coverage to those who had previously been uninsured, corresponded directly with the timeline for mitigation of breast reconstruction disparities in race, income and education.”

“Perhaps surprisingly, for any medical treatment, it is extremely rare that these timelines would coincide so closely in such a large scale population,” Dr. Lum adds. “The study suggests that Medicaid expansion was highly effective in doing what it was supposed to do—breaking down barriers to care.”

The study examined 1,196,859 patients age 40 and older in the National Cancer Database who underwent mastectomy with or without reconstruction from 2010 to 2017. Overall, multivariable analysis found that patients who were younger, NHW, higher income or education levels, lower

comorbidity index, insured and non-metastatic were significantly more likely to have undergone reconstruction.

It also found increasing rates of breast reconstruction for NHB women as well as for women in lower income and education levels closely following the timeline of Medicaid qualification criteria expansion. In states that did not implement expansion, lower proportions of NHB patients underwent reconstruction than NHW patients throughout the time period examined.

Dr. Lum explains that while the official date for Medicaid expansion was January 2014, state timelines varied and some states did not enact any qualification changes. In the study, states were categorized as early expansion (2010-2014), 2014 (1/2014) expansion, late expansion (after 2014) and no expansion. Difference in difference regression analyses with interaction terms were used to examine annual trends for utilization of breast reconstruction by racial/ethnic, income and education status.

Beyond simply a rise in reconstruction, the study found the proportion of NHB patients undergoing the procedure exceeded NHW patients in early expansion states in 2014 (+0.21%), in 2014 expansion states in 2015 (+0.28%) and in late expansion states in 2017 (+0.19%). In addition, a convergence of reconstruction utilization for lowest education and income groups similarly coincided with Medicaid expansion. Convergence was not seen in non-expansion states.

“Sometimes a picture does speak a thousand words,” says Dr. Lum. “Our graphs comparing reconstruction rates among NHB and NHW women reflected the timeline of Medicaid changes so closely that they suggest a strong causal relationship. The continued lack of racial parity in states without expansion suggests that a reduction in Medicaid access will negatively impact the gains achieved and should raise caution in today’s shifting sociopolitical environment.”

## Abstract, Official Proceedings

### Improvement in Breast Reconstruction Disparities Following Medicaid Expansion Under the Affordable Care Act

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**Objective:** Disparities in breast reconstruction have been well documented. With enactment of the Affordable Care Act in 2010, subsequent Medicaid expansion effective January 1, 2014 aimed to increase access to health care. We sought to determine the effect of Medicaid expansion on utilization of breast reconstruction.

**Methods:** All non-Hispanic black (NHB) and non-Hispanic white (NHW) breast cancer patients > 40 years who underwent mastectomy with or without reconstruction between 2010-2017 were selected from the National Cancer Database (NCDB). Multivariable logistic regression was used to evaluate the association between breast reconstruction, age, race/ethnicity (R/E), residence area median income and education level, insurance type, Charlson-Deyo score, stage, year of diagnosis, and state Medicaid expansion status. Medicaid expansion was categorized by expansion date as early (2010-2013), 2014 (1/2014), late (after 1/2014), or no expansion. Difference in difference regression analyses with interaction terms were used to test if annual trends for utilization of breast reconstruction by NHB vs. NHW patients, income quartiles, and four education levels differed by Medicaid expansion status.

**Results:** Of 1,196,859 patients, 13.49% (N=161,480) underwent reconstruction, 12.48% (N=149,332) were NHB, 20.16% (N=241,285) had median income <\$40,227, and 15.67% (N=187,542) were in the lowest education level. An upward annual trend in the proportion of patients undergoing reconstruction peaked in 2013 at 13.83% and then declined (10.98% in 2010 and 11.45% in 2017,  $p < 0.0001$ ). Multivariable analysis confirmed that patients who were younger, NHW, higher income or education levels, lower comorbidity index, insured, and non-metastatic had significantly higher odds of undergoing reconstruction. Unadjusted proportions of NHB vs. NHW patients who underwent reconstruction by Medicaid expansion group are shown in the Figure. In non-expansion states, lower proportions of NHB patients underwent reconstruction than NHW patients in all years, with the smallest disparity [NHB%-NHW%] (-1.39%) in 2017. The proportion of NHB patients who underwent reconstruction exceeded that of NHW patients for the first time in early expansion states in 2014 (+0.21%), in 1/2014 expansion states in 2015 (+0.28%), and in late expansion states in 2017 (+0.19%). Similar findings for convergence of reconstruction utilization rates for lowest education levels and income quartiles were found with regards to timing of Medicaid expansion, with no convergence seen in non-expansion states over the study period. Parity in reconstruction was achieved by 4th vs. 3rd income quartiles in early expansion states in 2013 (+0.12%) and in late expansion states in 2015 (+0.72%), but remained unimproved in non-expansion states in 2017 (-1.69%). The two lowest education levels achieved parity in 1/2014 expansion states in 2015 (+0.01%), but remained disparate in non-expansion states in 2017 (-1.73%). Annual trends

for utilization of breast reconstruction by R/E, income, and education category when comparing Medicaid expansion status showed significant differences ( $p < 0.0001$  for all tests of interactions).

**Conclusions:** Improvement in disparities in utilization of breast reconstruction for NHB, lower income, and less educated patients undergoing mastectomy for breast cancer followed temporal patterns of Medicaid expansion. Despite a recent overall decline in breast reconstruction, failure to achieve parity without Medicaid expansion should raise caution about reducing Medicaid access.

**Figure 1: Unadjusted proportions of NHB vs. NHW patients who underwent reconstruction by Medicaid expansion group 2010-2017**

