

Post-Mastectomy Reconstruction and Disparities Amongst Race During the COVID Pandemic (PRADAR): A Retrospective Analysis

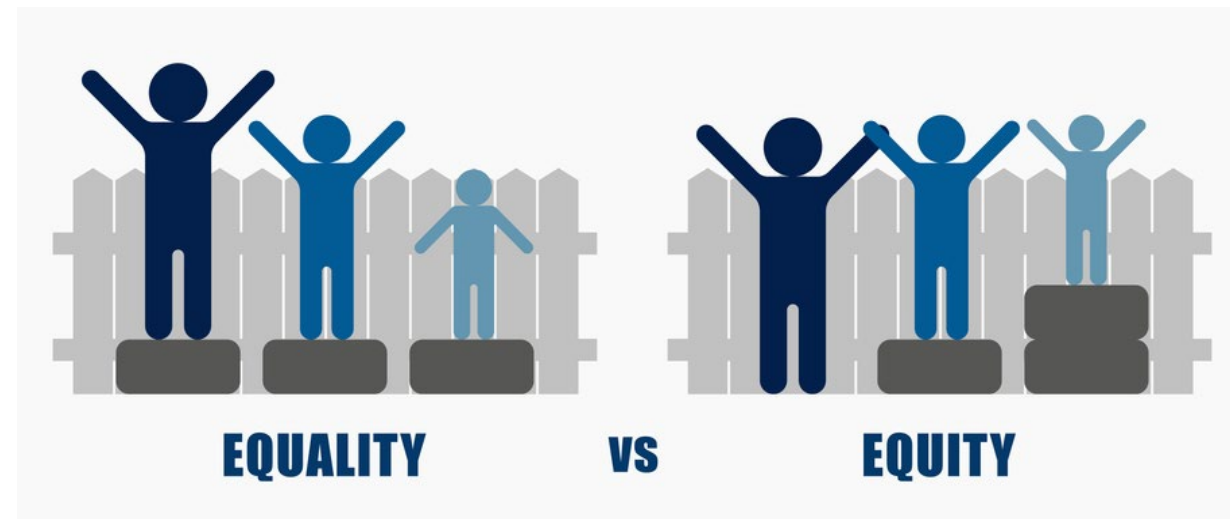
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This research was supported (in whole or in part) by HCA Healthcare and/or an HCA Healthcare affiliated entity. The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.

The presenter has no financial disclosures.

“Of all the forms of inequality, injustice in health is the most shocking and inhumane.”

-MLK



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Background

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Background

- Breast cancer is the most common cancer of women.
- 1 in 8 women will be diagnosed in their lifetime.
- Referral for post-mastectomy reconstruction is the standard of care, however, the literature has consistently shown disparities in these rates in white vs nonwhite women.
- This disparity is most pronounced in the black population.

Background

- The COVID 19 Pandemic resulted in a worldwide health crisis leading to significant delays in cancer treatment.
- Significant delays have demonstrated poor clinical outcomes.
- There have been no studies to date examining the effect of the COVID19 pandemic on pre-existing disparities, particularly those in breast cancer patients undergoing reconstruction.

- Aim: To investigate the rates of immediate and delayed breast reconstruction in white and black patients during the COVID19 pandemic and compare them to rates prior to the pandemic.
- **N0: There is no statistical difference between rates of reconstruction in white vs black patients during the COVID pandemic.**

Methods

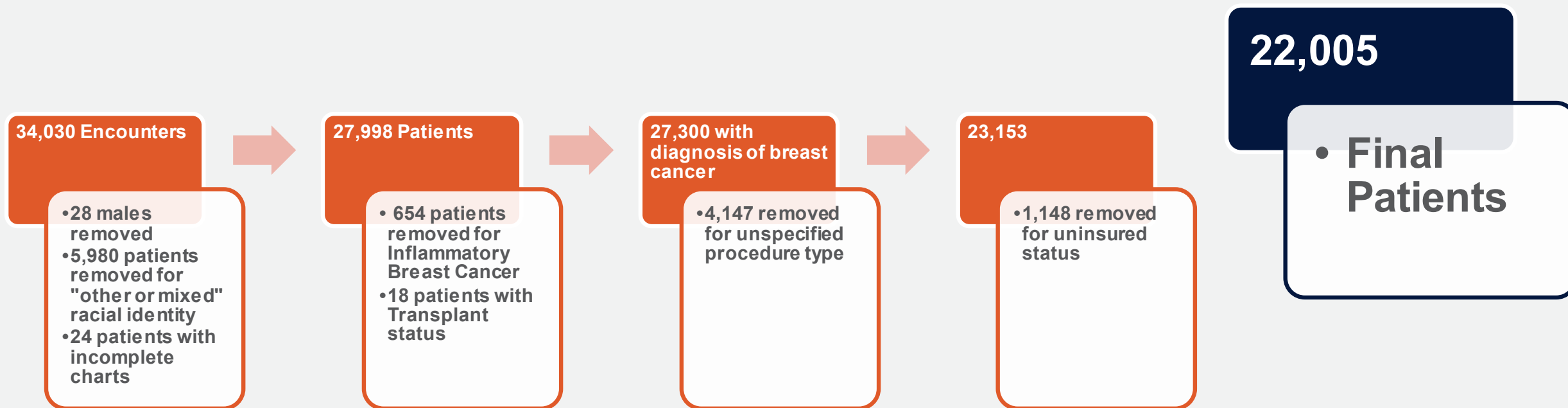
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Definitions

- Timeline: January 2018-September 2021
- COVID Pandemic- Begins March 2020
- Immediate Reconstruction-Breast reconstruction performed at time of mastectomy
- Delayed Reconstruction:-Breast reconstruction performed within 12 months of mastectomy

Methods

- Data obtained from HCA Healthcare National Enterprise Database Warehouse (EDW) during timeline
- Inclusion Criteria:
 - Female
 - Age 18-80 years
 - Diagnosis of invasive ductal, invasive lobular carcinomas, ductal carcinoma in situ, lobular carcinoma in situ
- Exclusion:
 - Males diagnosed with breast cancer
 - Inflammatory breast cancer
 - History of transplant
 - Oncoplastic procedures performed by breast surgeons



Patient Demographics

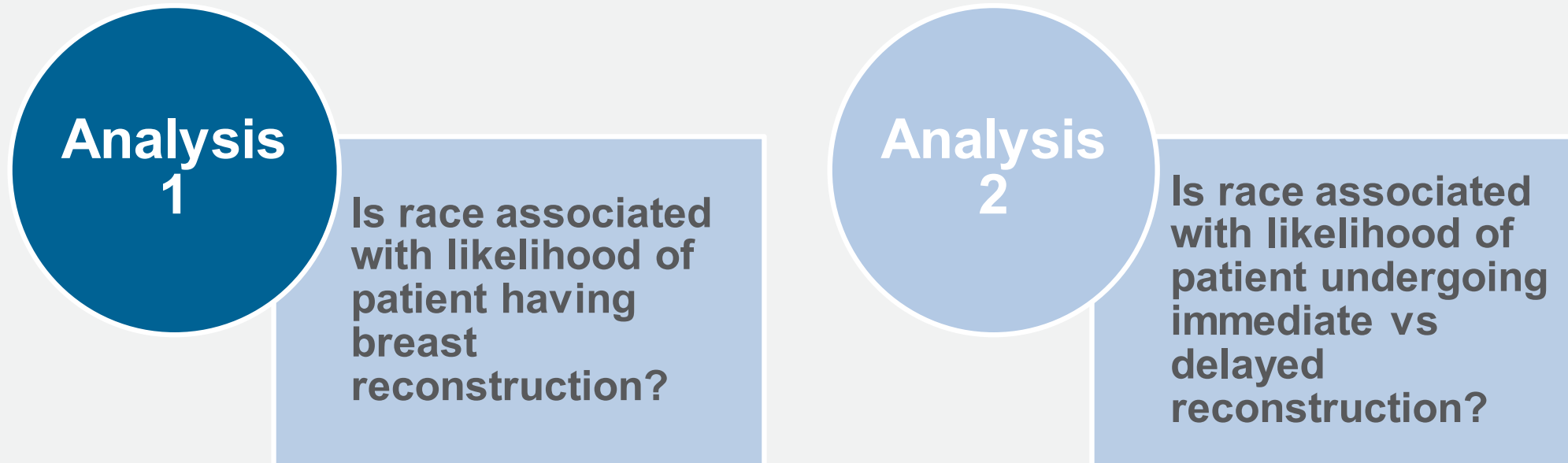
- Age
- Race: Black vs White
- Simple vs Radical Mastectomy
- Nodal Status
- Estrogen Receptor Status
- Insurance Type
 - Commerical
 - Medicare
 - Medicaid
- Inpatient vs Outpatient Surgery

Reconstruction Population Only			
	Demographic	White	Black
Patients (N%)		83.7	16.3
Reconstruction (%)	Delayed Reconstruction	11.5	23.7
	Immediate Reconstruction	88.5	76.3
Insurance(%)	Commercial	58.8	52.1
	Medicaid	3.0	9.2
	Medicare	38.2	38.8
ER Status(%)	Negative	6.5	10.4
	Positive	45.9	34.0

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Methods

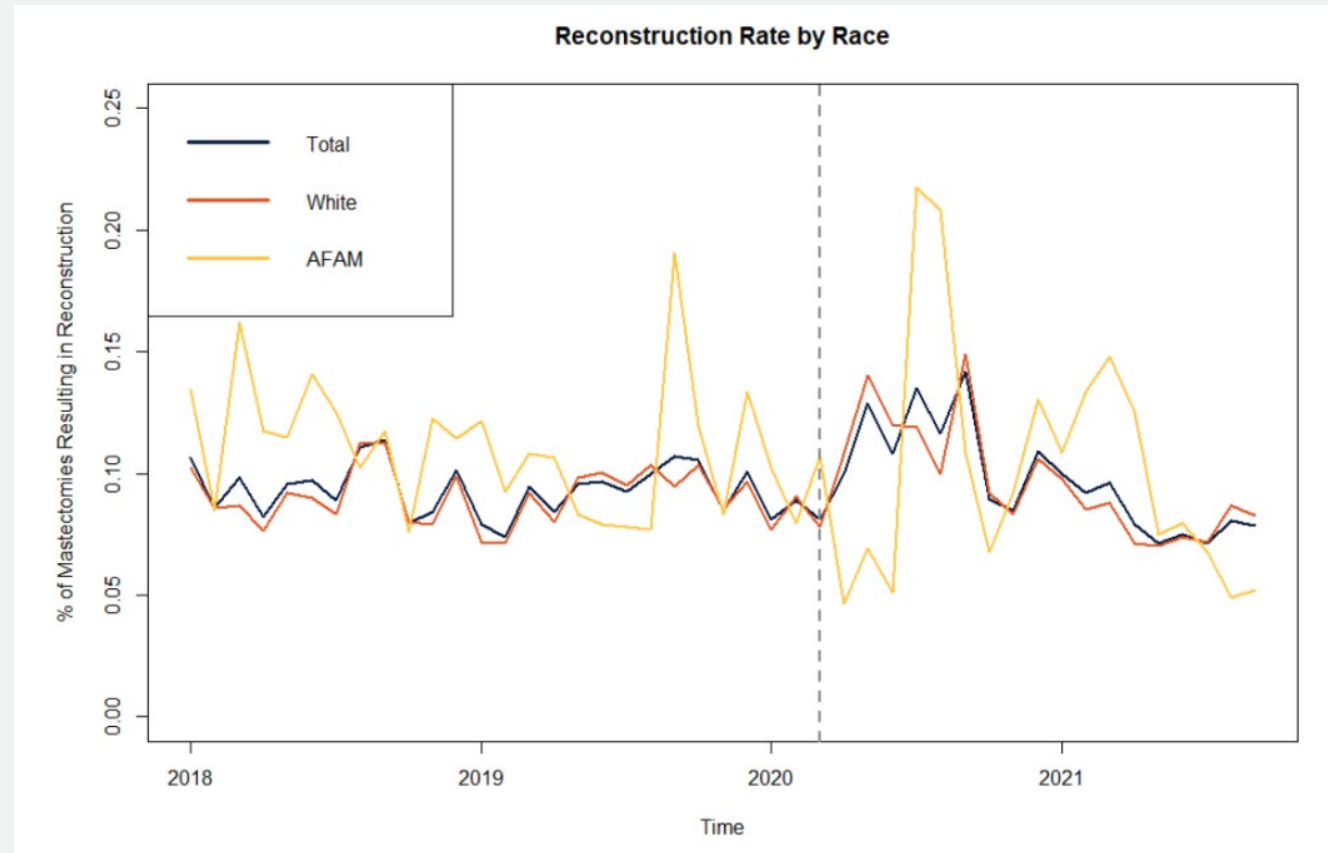
- Binary logistic regression is used to predict the likelihood of an outcome for a binary variable. This was used to test whether effect of race differed between different time periods.



Results

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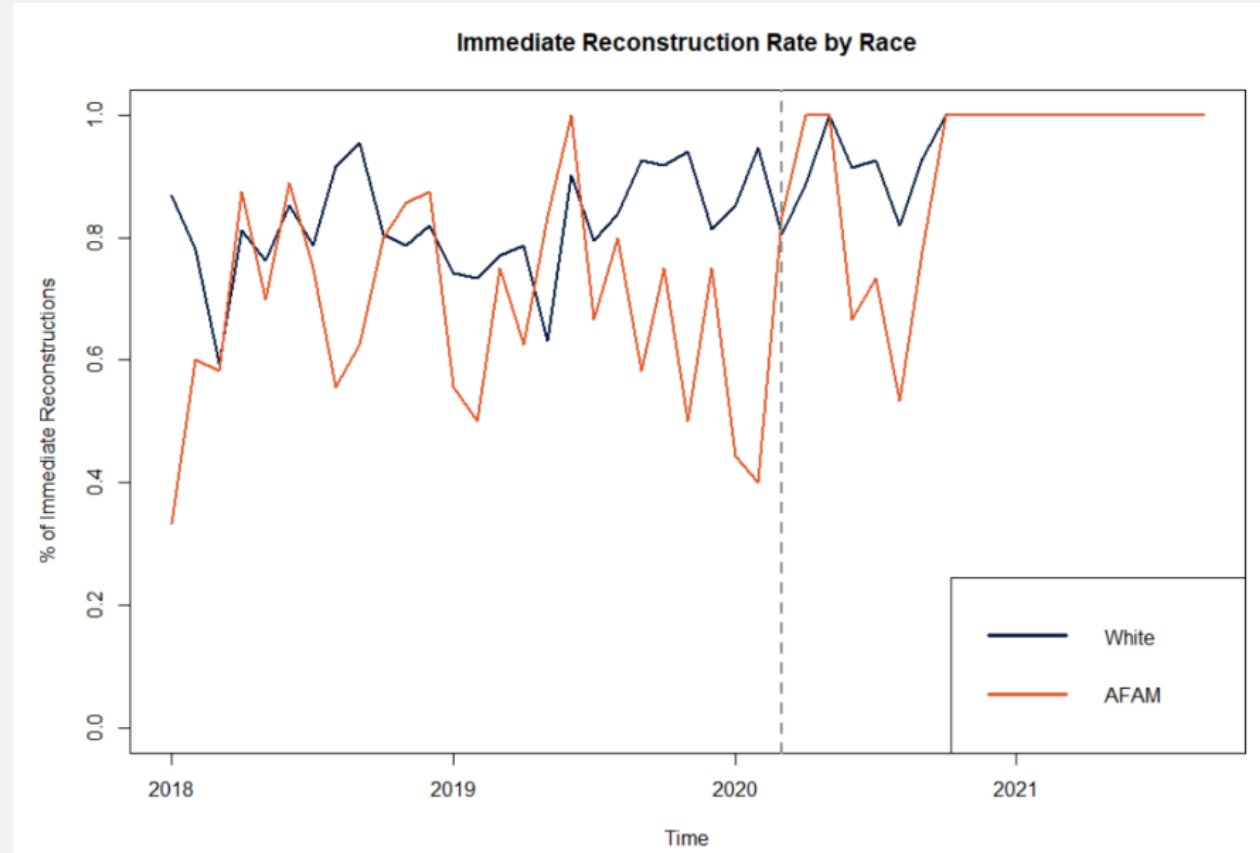
Results



Results

- Race was associated with the likelihood of patients undergoing breast reconstruction when controlling for other variables.
- Black patients were 1.18 more times as likely to undergo breast reconstruction ($\chi^2 = 7.32$, $p < 0.01$)
- There was no significant difference between patients undergoing breast reconstruction before and after the COVID pandemic ($\chi^2 = 0.166$, $p = 0.68$)

Results

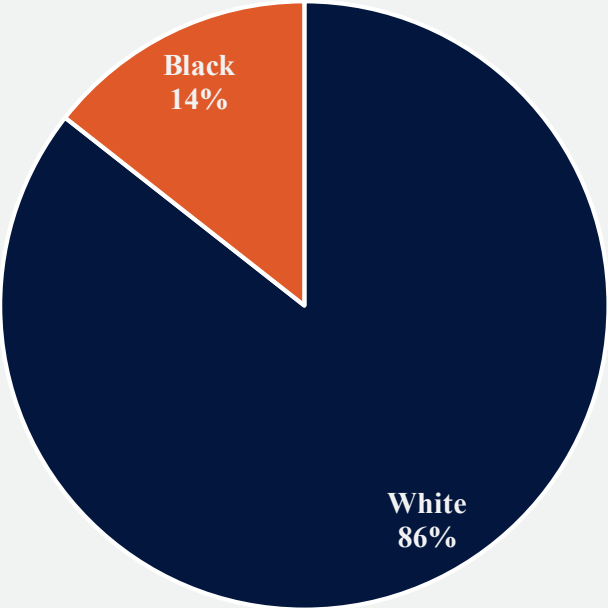


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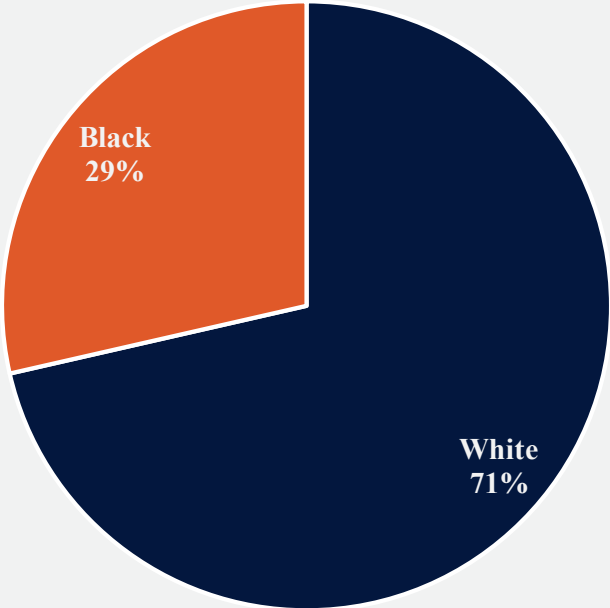
Results

- Race was associated with the likelihood of patients undergoing immediate vs delayed breast reconstruction when controlling for other variables.
- White patients were 2.51 times as likely to undergo immediate reconstruction than Black patients when controlling for other variables ($\chi^2 = 31.1$, $p < 0.0001$)
- Patients were more likely to undergo immediate vs delayed reconstruction after the COVID pandemic ($\chi^2 = 76.1$, $p < 0.001$).

Immediate Reconstruction



Delayed Reconstruction



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Conclusions

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- The COVID19 Pandemic did not worsen pre-existing health disparities with regards to race and breast reconstruction after mastectomy for patients within HCA Healthcare system.
- During the COVID19 Pandemic, all patients were more likely to undergo immediate reconstruction when compared to those diagnosed prior to pandemic.

- Black women within the HCA Healthcare system were more likely than their white counterparts to undergo any type reconstruction after the pandemic. This has not been reflected previously within the literature.
- Black women were less likely to undergo immediate vs delayed breast reconstruction which is consistent with the current literature.
- Further data is to be obtained to determine whether this is a lasting effect.

- Reconstruction remains a personal choice and should be individualized.
- Through continued conversations regarding health care disparities, we can foster a healthcare community that is inclusive, cost conscious and patient centered.

Discussion/Questions???

References:

- Malekpour M, Devitt S, DeSantis J, Kauffman C. Racial Disparity in Immediate Breast Reconstruction; a Gap That is not Closing. *Plast Surg (Oakv)*. 2022;30(4):317-323. doi:10.1177/22925503211055525
- Obeng-Gyasi, S, Oppong, B, Paskett, ED, Lustberg, M. Purposeful surgical delay and the coronavirus pandemic: how will black breast cancer patients fare?. *Breast Cancer Res and Treat*. 2020;182(3):527-530. doi: 10.1007/s10549-020-05740-0
- Buckley E, Elder E, McGill S, et al. Breast cancer treatment and survival differences in women in remote and socioeconomically disadvantaged areas, as demonstrated by linked data from New South Wales (NSW), Australia. *Breast Cancer Res Treat*. 2021;188(2):547-560. doi:10.1007/s10549-021-06170-2
- Mansfield SA, Abdel-Rasoul M, Terando AM, Agnese DM. Timing of Breast Cancer Surgery-How Much Does It Matter?. *Breast J*. 2017;23(4):444-451. doi:10.1111/tbj.12758
- Offodile AC 2nd, Tsai TC, Wenger JB, Guo L. Racial disparities in the type of postmastectomy reconstruction chosen. *J Surg Res*. 2015;195(1):368-376. doi:10.1016/j.jss.2015.01.013
- Soni SE, Lee MC, Gwede CK. Disparities in Use and Access to Postmastectomy Breast Reconstruction Among African American Women: A Targeted Review of the Literature. *Cancer Control*. 2017;24(4). doi:10.1177/1073274817729053
- Fedewa SA, Edge SB, Stewart AK, Halpern MT, Marlow NM, Ward EM. Race and ethnicity are associated with delays in breast cancer treatment (2003-2006). *J Health Care Poor Underserved*. 2011 Feb;22(1):128-41. doi: 10.1353/hpu.2011.0006.
- Patel MI, Ferguson JM, Castro E, Pereira-Estremera CD, Armaiz-Peña GN, Duron Y, Hlubocky F, Infantado A, Nuqui B, Julian D, Nortey N, Steck A, Bondy M, Maingi S. Racial and Ethnic Disparities in Cancer Care During the COVID-19 Pandemic. *JAMA Netw Open*. 2022 Jul 1;5(7):e2222009. doi: 10.1001/jamanetworkopen.2022.22009. PMID: 35834248; PMCID: PMC9284331.
- Christian CK, Niland J, Edge SB, Ottesen RA, Hughes ME, Theriault R, Wilson J, Hergrueter CA, Weeks JC. A multi-institutional analysis of the socioeconomic determinants of breast reconstruction: a study of the National Comprehensive Cancer Network. *Ann Surg*. 2006 Feb;243(2):241-9. doi: 10.1097/01.sla.0000197738.63512.23. PMID: 16432358; PMCID: PMC1448910.