

# Understanding Improvements in Disparities in Breast Cancer Care in Memphis, Tennessee: A Comparison of Two Time Cohorts

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## **Introduction:**

Between 2005- 2009 Black women in Memphis, TN had the highest breast cancer mortality rate in the United States as compared to their White counterparts. This study assesses current breast cancer outcomes for Black women in Memphis with hopes of finding improvement and identifying opportunities for continued investment in our community and hospital system.

## **Methods:**

Patients with breast cancer were identified in the tumor registry of a large healthcare system in Memphis, TN. Patients were stratified by race. Associations between race, clinical characteristics and treatments were determined using chi-square tests. Associations between race, recurrence and mortality were determined using logistic regression. The study sample was divided into period 1 (2002 – 2012) and period 2 (2013 – 2020) for comparison.

## **Results:**

In period 1, 54.4% of Black women presented with stage 2- 4 disease compared to 43.0% in period 2. In period 2, 36.5% of Black women and 48.8% of White women presented with Stage 1 disease ( $p < 0.001$ ). Treatment regimens are stratified per race in Table 1. In both periods, the median time to surgery (TTS) was higher for Black versus White women with stages 0-3 disease. Among women with stage 3 disease, the TTS for Black women compared to White women in period 1 was 47 versus 28 days, and in period 2 it was 163 versus 132 days, respectively ( $p < 0.05$ ). In period 2, Black women were 42% more likely to experience recurrence and 36% more likely to die when compared to White women versus findings in period 1 of 100% and 50%, respectively ( $p < 0.05$ ).

## **Conclusion:**

Racial disparity in breast cancer treatment has improved over time with reduced risk of recurrence and mortality among Black women in Memphis. However, the difference remains significant. Specific social and medical interventions must be evaluated for efficacy.

Table 1	Period 1 (2002 – 2012)	Period 2 (2013 – 2020)
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<b>Variable</b>	<b>White</b>	<b>Black</b>	<b>White</b>	<b>Black</b>
<b>Total (n)</b>	1,808 (58.9%)	1,264 (41.1%)	4,020 (58.0%)	2,912 (42.0%)
<b>Treatment</b>				
Chemotherapy	577 (26.1%)	551 (37.6%)	1,322 (32.9%)	1,379 (47.4%)
Partial Mastectomy	971 (53.7%)	680 (53.8%)	2,223 (55.3%)	1,576 (54.1%)
Mastectomy, MRM	767 (42.4%)	448 (35.4%)	1,343 (33.4%)	879 (30.2%)
<b>Recurrence OR</b>		2.0 (CI: 1.4-3.0)		1.42 (CI: 1.1-1.8)
<b>(95% CI)<sup>δ</sup></b>				
<b>Mortality OR</b>		1.5 (CI: 1.2- 1.8)		1.36 (CI: 1.2-1.6)
<b>(95% CI)<sup>γ</sup></b>				

Note: OR Referent = White

<sup>δ</sup>Adjusted for clinical stage

<sup>γ</sup>Adjusted for age, clinical stage, estrogen receptor status, progesterone receptor status, Her2 status, recurrence, and triple negative diagnosis. All p-value < 0.05.