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Breast Cancer–Related Healthcare Resource Utilization and Staging Before and After the COVID-19 Pandemic Among White and Black Patients With Newly Diagnosed Breast Cancer

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Introduction

- Care for breast cancer, the second most common cancer among US women, has varied by race, with Black women having higher mortality than White women.[1,2]
- The COVID-19 pandemic further highlighted racial disparities in general healthcare access and outcomes.[3]
- Limited research has explored whether the pandemic has been associated with changes in racial disparities in breast cancer care.[4,5]
- This study aimed to address this gap and identify further areas of research to address health inequities.

Objectives

- To describe breast cancer–related healthcare resource utilization (bcHCRU) and initial breast cancer staging of adult females by race pre- and post-COVID-19 pandemic to identify possible changes in care.

Methods

Study Design

- This retrospective cohort study used closed claims from the Komodo Research Dataset, a Komodo Health data schema designed for RWE and HEOR studies, from August 2018 through May 2023.
- Patients were stratified based on time of first breast cancer (bc) diagnosis (Dx) before and after COVID-19 and by race. Patient characteristics were assessed during the baseline period and on index (first bc Dx) date. bcHCRU was reported during the follow-up period. Metastatic bc was defined as a secondary neoplasm claim within 90 days after index Dx.
- Continuous variables were reported as mean (standard deviations [SD]) and compared using unpaired t-tests. Categorical variables were reported as counts (%) and compared using chi-squared tests.

Inclusion/Exclusion Criteria (Figures 1 and 2)

- ≥1 bc Dx (first Dx: index) during identification period:
  - Pre-COVID cohort: February 1, 2019, through July 1, 2019
  - Post-COVID cohort: July 1, 2022, through November 30, 2022
- ≥6 months (182 days) of continuous enrollment in medical and pharmacy plans prior to index (exclusive) (baseline period) and after index (inclusive) (follow-up period)
- No bc Dx in previous claims history (washout period)
- ≥1 bc Dx during the follow-up period (excluding index date)
- Female patients
- ≥18 years old as of the index date
- Race stratification to White and Black patients

Key Study Variables

- Demographics and clinical characteristics
- bcHCRU, defined as a claim with a coexisting bc Dx

Results

- 10,095 White and 2,217 Black pre-COVID-19 patients and 7,272 White and 1,933 Black post-COVID-19 patients were included in the analysis.

Figure 1. Sample Selection for Pre-COVID-19

Patients with ≥1 breast cancer diagnosis during identification period (February 1, 2019, through July 1, 2019)
Index date: First breast cancer diagnosis
N = 1,298,717

↓

Patients with ≥6 months (182 days) of medical and pharmacy continuous enrollment prior to index (exclusive) **(baseline period)** and after index (inclusive) **(follow-up period)**
N = 288,532 (22.2%)

↓

Patients with no breast cancer diagnosis in previous claims history **(washout period)**
N = 33,705 (11.7%)

↓

Patients with ≥1 breast cancer diagnosis during the follow-up period (excluding index)
N = 23,508 (69.7%)

↓

Female patients
N = 23,120 (98.3%)

↓

Patients ≥18 years old as of index
N = 23,086 (99.9%)

↓

White patients: N = 10,095 (43.7%) | Black patients: N = 2,217 (9.6%)

Figure 2. Sample Selection for Post-COVID-19

Patients with ≥1 breast cancer diagnosis during identification period (July 1, 2022, through November 30, 2022)
Index date: First breast cancer diagnosis
N = 1,302,590

↓

Patients with ≥6 months (182 days) of medical and pharmacy continuous enrollment prior to index (exclusive) **(baseline period)** and after index (inclusive) **(follow-up period)**
N = 246,269 (18.9%)

↓

Patients with no breast cancer diagnosis in previous claims history **(washout period)**
N = 24,411 (9.9%)

↓

Patients with ≥1 breast cancer diagnosis during the follow-up period (excluding index)
N = 18,072 (74.0%)

↓

Female patients
N = 17,840 (98.7%)

↓

Patients ≥18 years old as of index
N = 17,815 (99.9%)

↓

White patients: N = 7,272 (40.8%) | Black patients: N = 1,933 (10.9%)

Table 1. Patient Characteristics

	Pre-COVID-19			Post-COVID-19		
	White (N = 10,095)	Black (N = 2,217)	p-value	White (N = 7,272)	Black (N = 1,933)	p-value
Age (years), mean (SD)	62.1 (12.4)	60.9 (13.0)	<0.0001	60.1 (12.8)	57.9 (14.0)	<0.0001
Payer Channel, n (%)			<0.0001			<0.0001
Commercial	4,966 (49.2)	701 (31.6)		3,274 (45.0)	469 (24.3)	
Medicare Advantage	3,965 (39.3)	950 (42.9)		2,365 (32.5)	633 (32.7)	
Medicaid	1,164 (11.5)	566 (25.5)		1,633 (22.5)	831 (43.0)	
Metastatic Breast Cancer on Index, n (%)	2,142 (21.2)	590 (26.6)	<0.0001	1,731 (23.8)	540 (27.9)	0.0002
Charlson Comorbidity Index, mean (SD)	0.7 (1.5)	1.0 (1.8)	<0.0001	0.7 (1.5)	0.9 (1.7)	0.0001

- Black females had higher proportions of metastatic disease on index, bc-related inpatient admissions, and bc-related ER visits pre- and post-COVID-19 (all p<0.001).

Figure 3. Pre-COVID bcHCRU During the Follow-Up Period

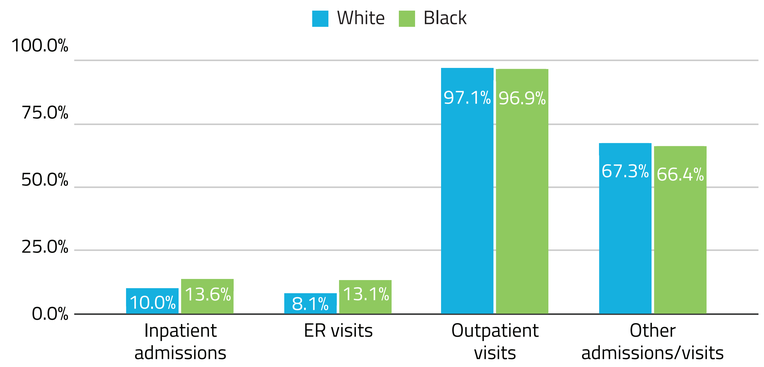
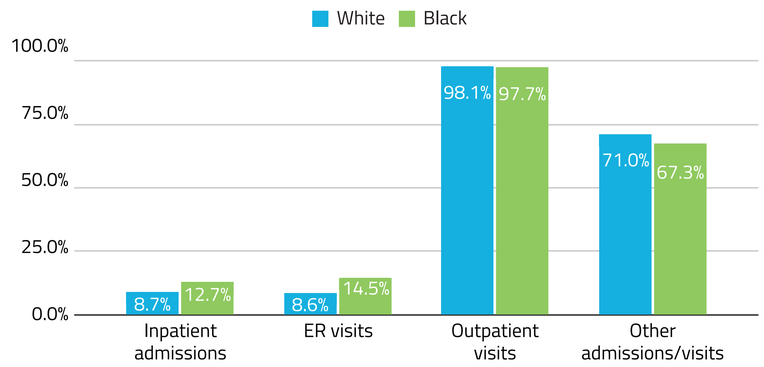


Figure 4. Post-COVID bcHCRU During the Follow-Up Period



** The proportion of patients with ≥1 respective bcHCRU type are reported in the figures above; other admissions/visits included ambulance use, home care, and durable medical equipment.*

Conclusion

- Differences in breast cancer care by race, particularly for care associated with acute needs, were consistent pre- and post-COVID-19 and must be addressed.
- Statistical modeling should be conducted to assess drivers of these racial disparities further in order to address health inequities and to inform clinical programs for patients with breast cancer.

References

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