

2019 NPCR GEORGIA SUCCESS STORY

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New Insight: Tumor Characteristics and Breast Cancer Racial Disparities

NATIONAL PROGRAM OF CANCER REGISTRIES SUCCESS STORY

SUMMARY: Recent studies using the Georgia Cancer Registry data expounded on the breast cancer mortality outcome race disparities in Atlanta. A study published in July 2019, analyzed breast cancer incidence data in Metro Atlanta area concluded that lower stage, hormonally responsive and luminal breast tumors were the primary drivers for disparity among African American women. A follow up study published in September 2019 further examined these characteristics, suggested that tumor heterogeneity, and treatment uptake maybe the drivers of racial disparities among women with hormone receptor positive (HR+) breast cancer diagnosed with stage I-IIIa. These two studies provided amenable intervention for cancer control professionals in Georgia.

CHALLENGE: A study entitled “Black: white disparities in breast cancer mortality in the 50 largest cities in the United States, 2005-2014” was published in Cancer Epidemiology in July 2016. The study identified the city of Atlanta had the largest and significant difference in black/white breast cancer mortality disparities and that the disparity increased from 2005-2009 to 2010-2014. These findings generated many questions from cancer control professionals and stakeholders in the state of Georgia. Stakeholders and professional organizations such as Susan G. Komen Foundation, American Cancer Society, met several times with the Georgia Department of Public Health (DPH), Breast and Cervical Cancer Screening Program (BCCP) to further identify solutions and to partner with providers in the city of Atlanta to improve on mammography screenings for women of low socioeconomic status and women who were uninsured and underinsured.

DPH BCCP, Cancer Registry and the Behavioral Risk Factor Surveillance (BRFSS) epidemiologists provided data on breast cancer incidence, mortality, mammography screening and BCCP participants by racial distribution to various stakeholders.

Data from 2010-2014, showed that both Fulton and DeKalb counties, where the city of Atlanta is located, breast cancer incidence was higher for non-Hispanic white (NHW) women (Fulton=141.8/100,000; DeKalb=142.8/100,000) than NH black (NHB) women (Fulton=132.4/100,000; DeKalb=134.3/100,000), while breast cancer mortality was higher for NHB women (Fulton=36.1/100,000; DeKalb=30/100,000) than NHW women (Fulton=17.7/100,000; DeKalb=19.5/100,000). Mammography screening based on the 2014 GA-BRFSS for women 40 years and older in both Fulton (NHW=86%; NHB=84.5%) and DeKalb counties (NHW=85.6%; NHB=82.2%) were both higher than the state prevalence, as well as screening by race/ethnicity was similar for both NHW and NHB women. BCCP analysis showed that there were a higher proportion of NHB, and Hispanic women being screened through the program and were adherent to the United States Preventive Services Task Force (USPSTF) recommendations.

Cited Sources

Hunt, B.R., M.A.; Hurlbert, M.S., Black: white disparities in breast cancer mortality in the 50 largest cities in the United States, 2005-2014; Cancer Epidemiology; 45 (2016) 169-173.

Georgia Comprehensive Cancer Registry: <https://dph.georgia.gov/cancer-reports>

Georgia Behavioral Risk Factor Surveillance System: <https://oasis.state.ga.us/oasis/brfss/qryBRFSS.aspx>

SOLUTION: DPH shared data with stakeholders: the American Cancer Society, Susan G. Komen Foundation, the Avon Comprehensive Breast Center at Grady, Emory Winship Cancer Institute, WellStar, Northside and Piedmont hospitals, Sisters by Choice, DeKalb and Fulton Public Health Districts and the Good Samaritan Health Center as well as faith-based communities. In addition, DPH/BCCP described their program, reach, outcomes and funding limitations in number of screening to be offered from both state and federal resources. As a result, the Greater-Atlanta Breast Cancer Task Force was established with a mission to bring awareness to the public that breast cancer disparity exists in Atlanta and to eliminate this disparity by bringing together a collaborative group to provide education, decrease barriers to access to care, provide access to quality mammography services and to establish effective navigation programs. Partners agreed to coordinate their efforts, share resources and improve referral practices and communication among them. Furthermore, Dr. McCullough from the Rollins School of Public Health received funding from Avon Foundation, the Cancer Prevention and Control Research program and the Winship Research Informatics, supported by the Winship Cancer Institute of Emory University, to conduct research on the possible causes of breast cancer disparities in Metropolitan Atlanta.

Dr. McCullough approached the Georgia Cancer Registry, to conduct her studies, Dr. McCullough received IRB approval from both the Georgia Department of Public Health and Emory University, Rollins School of Public Health. Both Dr. McCullough and the Georgia Cancer Registry Director agreed on using the federal definition for the city of Atlanta, during the analytic phase Dr. Kevin Ward was involved in providing technical guidance on the Georgia Cancer Registry data collection process. As a result two studies were published in 2019 providing additional guidance on how to address breast cancer mortality disparities outcome. Various meetings are scheduled as a result of these recent publication to better address disparities by the Georgia Department of Public Health, Georgia Cancer Control Leadership team, Georgia Cancer Control Consortium and the Georgia Regional Cancer Coalitions.

RESULTS: Results from the study entitled “Racial Disparities in Breast Cancer Outcomes in the Metropolitan Atlanta Area: New Insights and Approaches for Health Equity” showed that NHB women were more likely to be diagnosed at a younger age; with higher stage at the time of diagnosis (stage IV 9.4% vs 4.8%); higher grade (grade 3+); node positive; and triple-negative tumors than NHW women. NHB women are more likely to live in high-poverty neighborhood at the time of diagnosis. There was a consistent disparity in BC deaths between NHB women and NHW women, NHB women with ER+ disease had 2.49 times higher risk of dying of BC than NHW women. Within the strata of BC molecular subtype there was a consistent disparity indicating a more than twofold hazard of BC mortality among NHB patients diagnosed with luminal A Luminal B or HER2-overexpressing tumors. The smallest relative disparity was among women diagnosed with triple-negative BC (TNBC). NHB women living in the highest SES index had 2.67 times the hazard dying of BC when compared to their NHW counterparts while NHB women living in lowest SES index with no health insurance had less pronounced disparities (HR=1.56). The study concluded that effectively treating women with ER+ tumors substantially impacts race disparities in Metro-Atlanta area. This study also revealed that further understanding of the receipt of guideline-concordant, delay, and completion of BC treatment among NHB women and the biologic factors that may affect response to treatment and prognosis can help improve patient outcome.

While the second study entitled “Oncotype DX recurrence score implication for disparities in chemotherapy and breast cancer mortality in Georgia” focused on the Georgia women diagnosed with stage I-III. Study showed that NHB women were more likely to be diagnosed with high-risk recurrence score than NHW women, NHB women were more likely to receive chemotherapy if they had low-risk recurrence score but less likely to receive chemotherapy if they had high-risk recurrence score. Analysis showed that race disparity was most pronounced among the lowest-risk recurrence score group which constitute most of the breast carcinomas eligible for Oncotype DX recurrence testing. Based on Oncotype recommendations, women with low-risk recurrence score should not receive chemotherapy; the recommendation is to receive endocrine therapy. Therefore, the observed racial disparity in this subgroup may be driven by adherence to endocrine therapy, especially over the long term. Previous studies have reported that NHB women are more likely to report non-adherence and discontinuation of endocrine therapy compared to NHW women. Early discontinuation and non-adherence to adjuvant endocrine therapy were associated with adverse breast cancer outcomes. Thus, the authors concluded that further research into understanding the downstream factors such as receipt of guideline care, adherence to endocrine therapy, and treatment delay as important drivers of the disparity in these otherwise prognostic favorable tumors.

SUSTAINING SUCCESS: The director of the Georgia Cancer Registry shared two studies with the DPH cancer control leadership team (Comprehensive Cancer Control program and the BCCP program), as well as the two co-presidents of the Georgia Cancer Control Consortium (GC3), the executive leadership of the Georgia Cancer Strategic Planning Committee and the co-chairs of the Diagnostic and Treatment subcommittee of the GC3. As a result, Dr. McCullough—primary author of these studies—was invited to present her findings and recommendations to the GC3 Steering Committee later this year. DPH cancer control leadership team discussed these articles and will further consult with the BCCP health care providers on how on implementing these findings within their practices.

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