

Effects of Breast Cancer Screening Guidelines: A Retrospective Analysis of Breast Cancer Patients Under Age 50 in a University Academic Center



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Introduction

In 2009, the U.S. Preventative Services Task Force (USPSTF) released updated breast cancer screening guidelines recommending against routine screening mammography in women aged 40-49. The task force concluded that the decision to start regular, *biennial* screening mammography before age 50 years should be an individual one considering patient context, including the patient's values regarding specific benefits and potential harms. In January 2016, the USPSTF reinforced these guidelines in their Final Recommendation Statement grading screening mammography prior to age 50 as a Grade C, stating there is at least moderate certainty that the net benefit is *small*.

Despite the USPSTF's findings, it has been well-documented through randomized trial data, that mammography saves the most lives with annual screening beginning at age 40. Since the introduction and implementation of widespread screening, breast cancer mortality has decreased substantially, upwards of 30%. It is however acknowledged that the magnitude of this decline in mortality has not been shared equally, with great disparities still existing both across state and color lines. Southern states in the US continue to have higher breast cancer deaths. In Louisiana black women are succumbing to this disease at an alarmingly disproportionate rate averaging 30 deaths per 100,000 compared to closer to 19 deaths per 100,000 in white women. This retrospective analysis investigates the potential effects of the USPSTF's recommendation, to delay onset of screening mammography to age 50, on our community, a community already disproportionately dying from this disease.

Methods

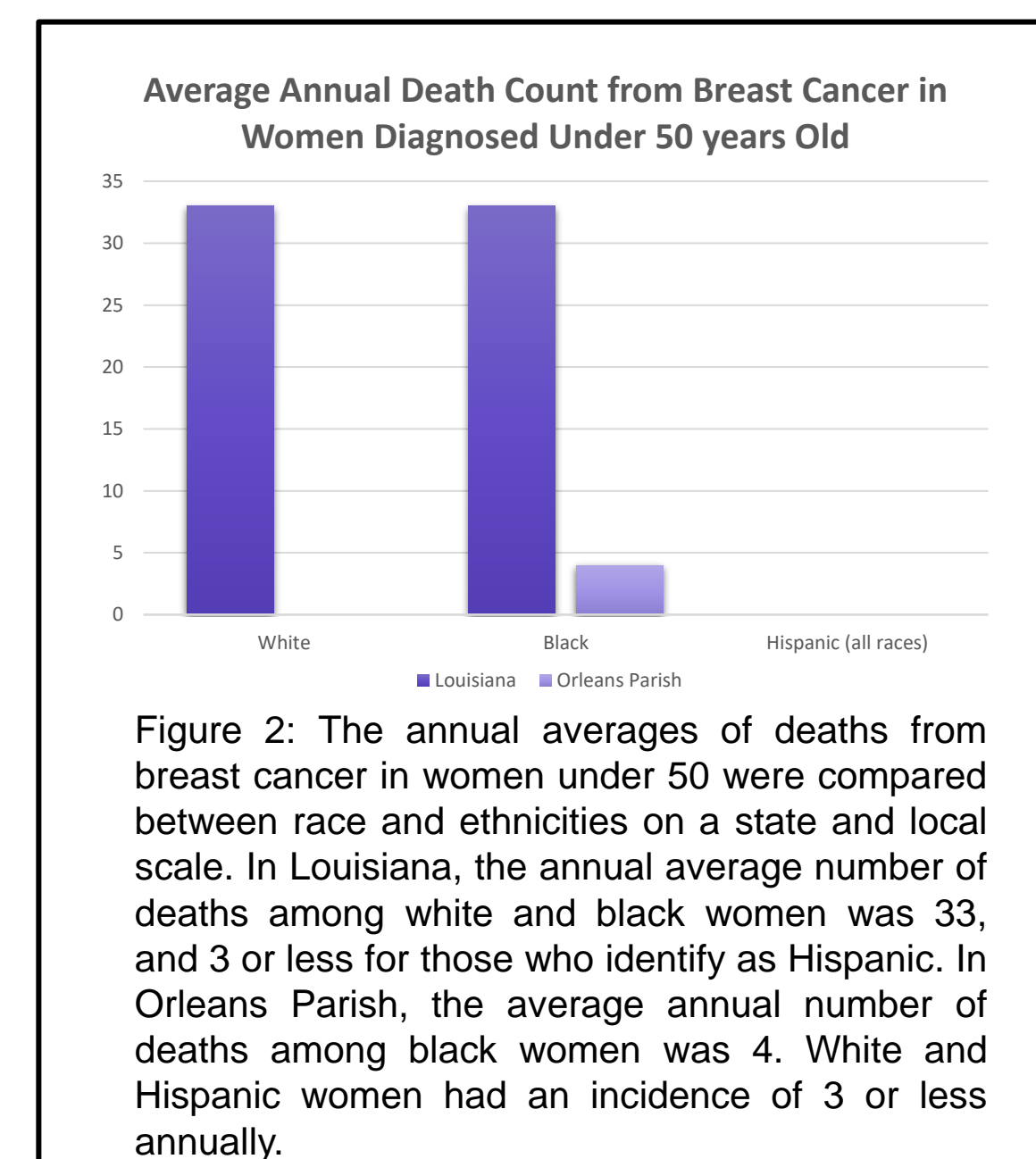
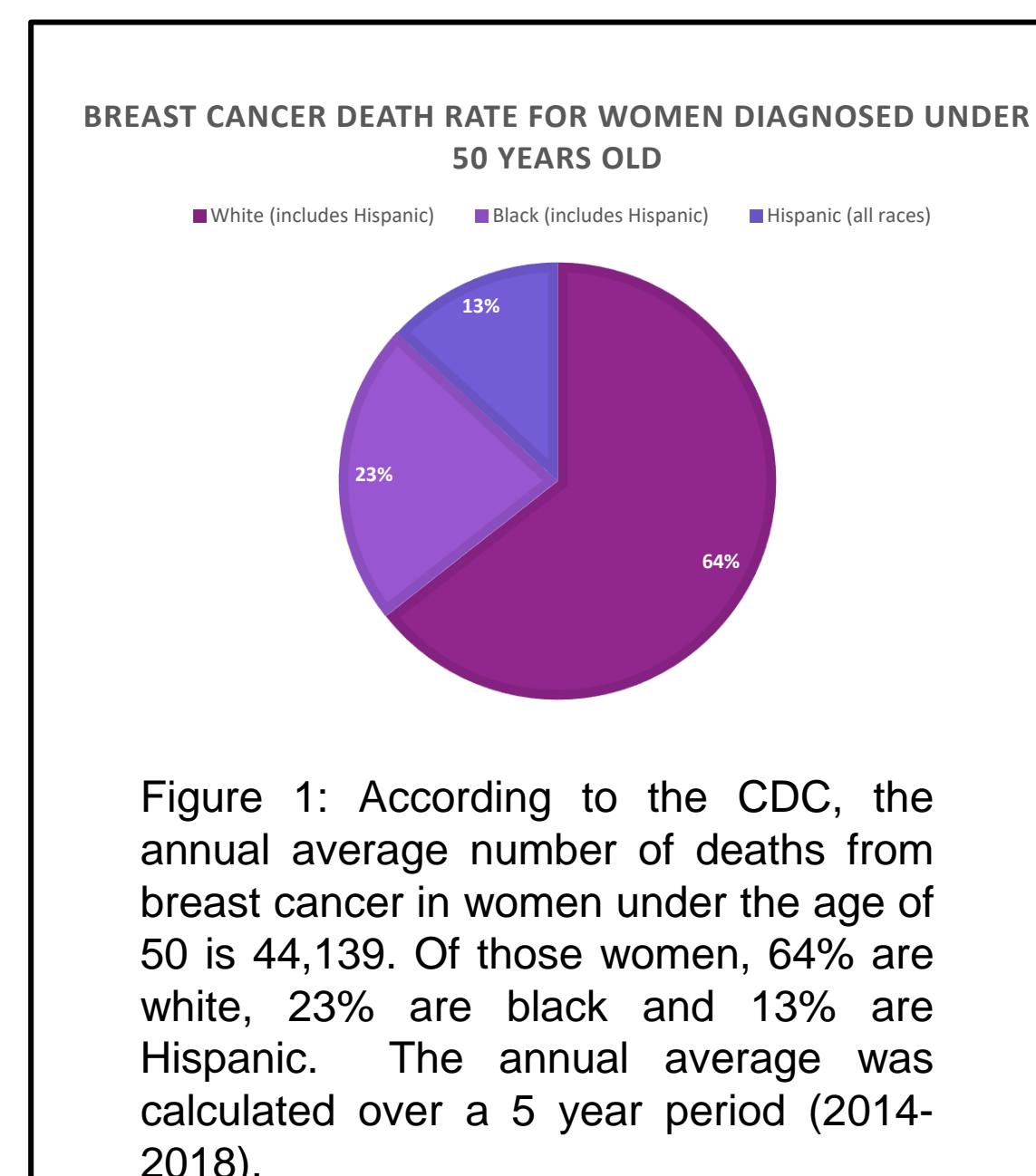
This study utilized an electronic health record informatics tool (EPIC SlicerDicer) to analyze new cancer diagnoses over the past 5 years at University Medical Center (UMC) in New Orleans, LA. Cases were stratified by race and age at time of diagnosis.

Patients were searched in SlicerDicer with the following criteria:

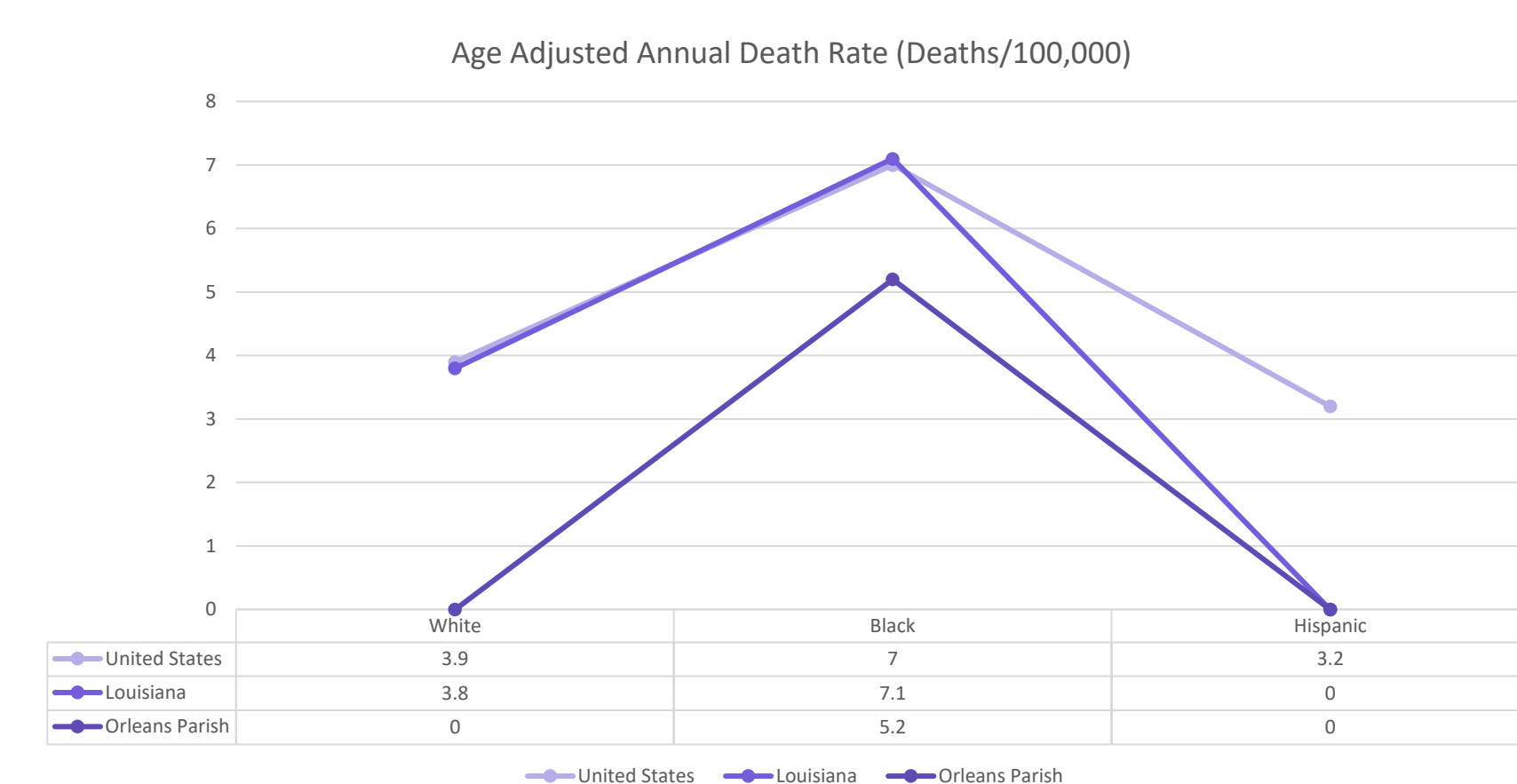
1. Biopsy performed at University Medical Center in New Orleans between June 30, 2017- June 30, 2021
2. Sequential breast cancer diagnosis following biopsy procedure
3. Patients must be under 50 years old

Patients selected using the criteria above were then stratified by race and ethnicity by adding "slices" in the SlicerDicer tool within Epic. UMC's SlicerDicer's results were then compared to rates of breast cancer diagnosis and death in women under 50 over a 5 year time period.

Average Annual Incidence of Breast Cancer Deaths Nationally vs. Locally

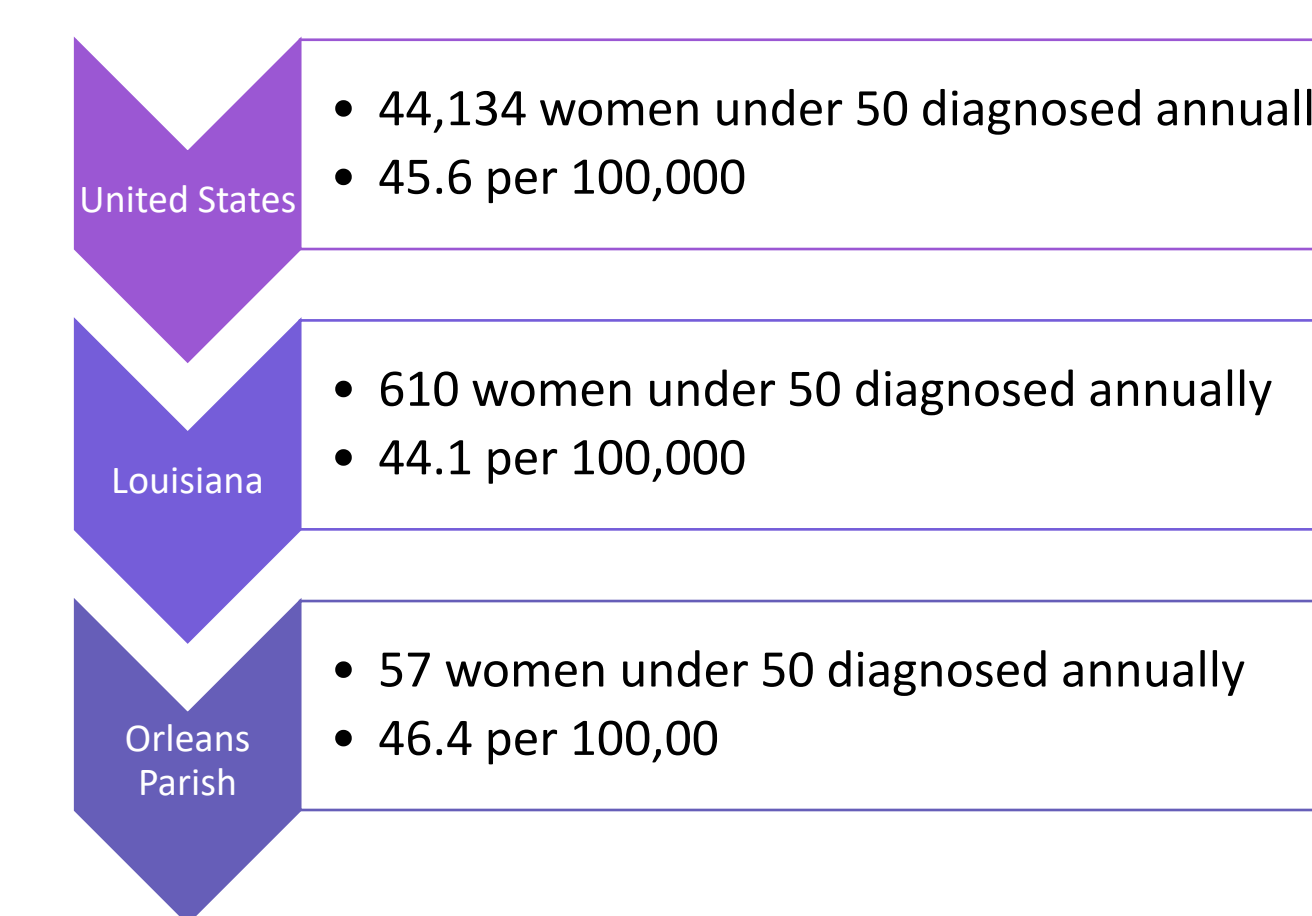


Comparison of Annual Average Death Counts Among Different Races and Ethnicities



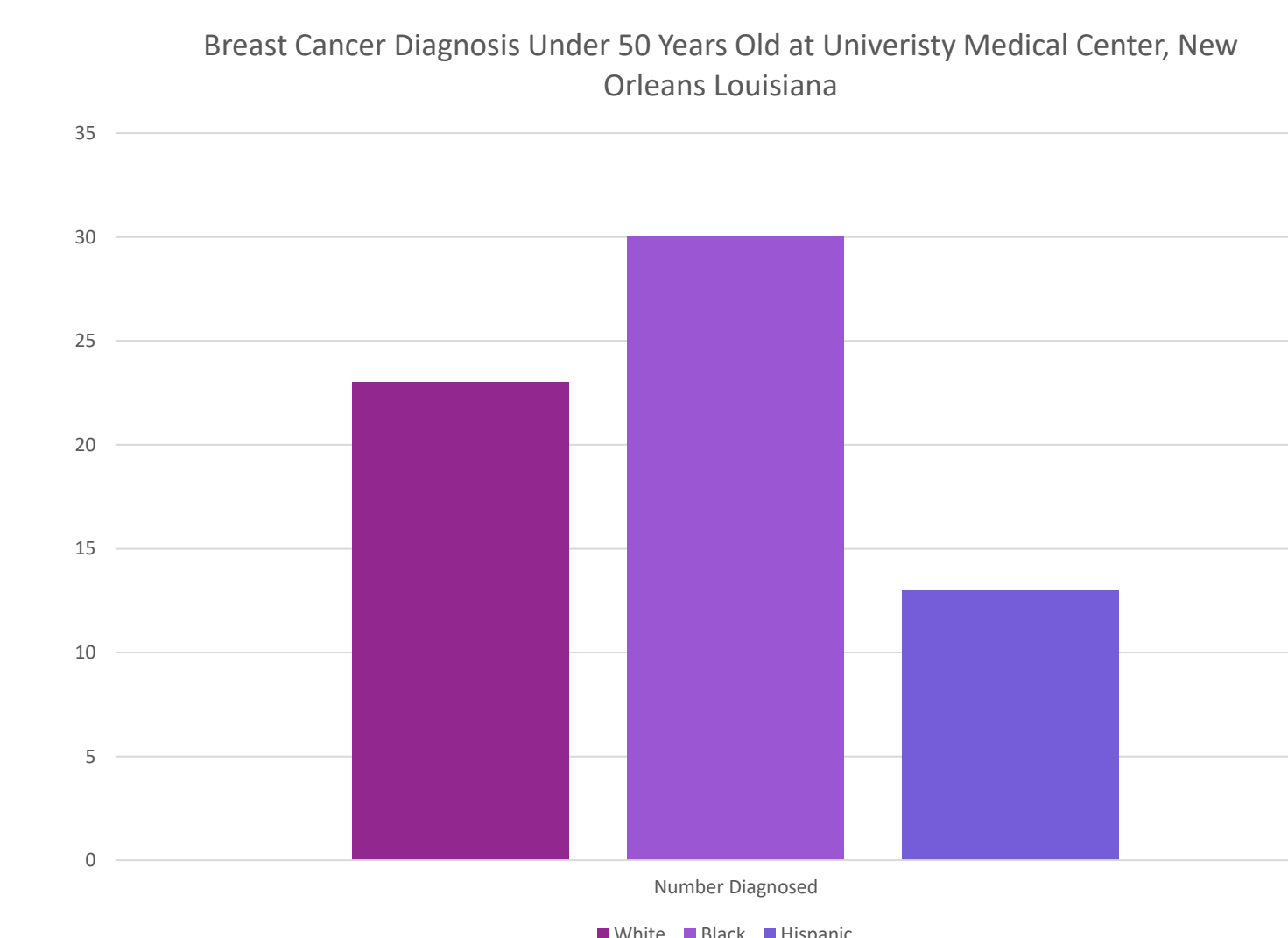
Despite African American women only making up 23% of the average annual number of deaths due to breast cancer under 50, this demographic has the highest annual death rate nationally, statewide and locally. On both a national and statewide level, their death rate nearly doubles that of white and Hispanic women in the same age group. White patients make up the majority of the annual death count at 64%; however, their death rate at a national and state level are less than 4 per 100,000. Both Hispanic and white patients' death rate in Orleans Parish was noted as 3 or less, so no value was given by the CDC, whereas black patients maintain a rate of 5.2 per 100,000 in Orleans Parish alone. This highlights the need to re-evaluate current screening guidelines and ensure all patients are being guided correctly in how to meet their specific health needs.

Results



Over the 5 year period used by the CDC (2014-2018), the average annual incidence of breast cancer diagnosis in all women under the age of 50 is 44,134. State and local annual incidences of diagnosis for breast cancer for the same age group show a similar diagnosis rate to the national annual average.

Over our studied 5 year period, 66 women under 50 years old were diagnosed with breast cancer at University Medical Center in New Orleans, LA. 30 of those women were black, making up 45% of the total number of cases. 23 of the patients who were diagnosed were white, and 13 patients identified as Hispanic.



Conclusion

Our results showed that women diagnosed prior to age 50 represented a significant proportion of new diagnoses at our institution. Additionally, minority women account for the highest death rate, which highlights this group being most harmed by the USPSTF's recommendations to delay breast cancer screening to age 50. We hope that these findings may serve to support additional prospective studies to not only optimize screening guidelines that better serve our patient population, but also to potentially guide the USPSTF as they embark on recommendation updates.

A potential explanation for why our local death rate for black women diagnosed with breast cancer under 50 has a higher incidence than that of white and Hispanic women could be due to a larger representation in the patient population in the New Orleans area. This could also explain the SlicerDicer results for the number of black women under 50 diagnosed at UMC. Minority populations having a large presence at our institution could provide significant insight in how current screening guidelines vary in efficacy across different patient demographics.