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# **THE SCIENCE OF CANCER HEALTH DISPARITIES IN RACIAL/ ETHNIC MINORITIES AND THE MEDICALLY UNDERSERVED**

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## **DISPROPORTIONATE BURDEN OF CERVICAL CANCER SURVIVAL BY RACE AND RURALITY IN SOUTH CAROLINA, 2001 – 2016**

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# Introduction

- ▶ For the years 2011 to 2015, South Carolina (SC) ranked 19<sup>th</sup> in the U.S. for cervical cancer incidence and 14<sup>th</sup> for mortality [1].
- ▶ With the highest representation of rural (33.7%) and African American (AA) population (27.9%), SC marks an incidence rate (7.6 per 100,000 women) that is slightly higher than that of the U.S (7.5 per 100,000 women), where, a drastic difference by race exist with AA women having an approximately 18% higher incidence rate (8.9 per 100,000 women) compared to Caucasian women (7.5 per 1000,000 women) [1,2].
- ▶ Despite the greater efforts in reducing the incidence and mortality rates for cervical cancer, racial and geographic disparities still exist for cervical cancer, due largely to a lack of access to screening. [3]
- ▶ The purpose of this study is to identify and compare cervical cancer survival by race and geography in South Carolina.

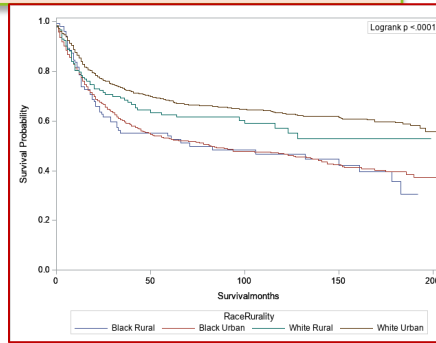


# Methods

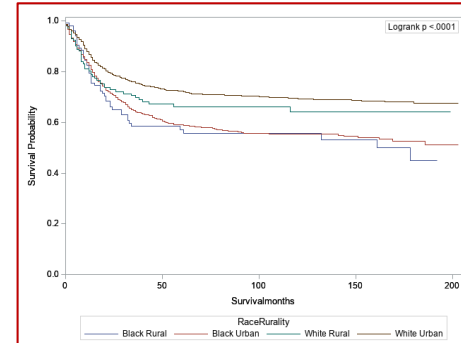
- ▶ We utilized surveillance data from South Carolina Central Cancer Registry (SCCCR), available at the SC Department of Health & Environmental Control (DHEC). [1]
- ▶ Study included 3,016 women diagnosed with cervical cancer between 2001 to 2016 period.
- ▶ Rural Urban Commuting Area codes were used to classify rural residence at the time of tumor diagnosis. [2]
- ▶ Descriptive statistics were calculated and compared by rurality using a chi-square test. We constructed Kaplan-Meier curves and calculated 3, 5, and 10-year survival rates.
- ▶ Adjusting for rurality, race, age, gender, SEER staging, type of insurance & census tract poverty estimates, multivariable Cox regression models were used to estimate the hazard ratio (HR).
- ▶ All analyses were performed using SAS version 9.4 (SAS Institute, Cary, NC).

# Results

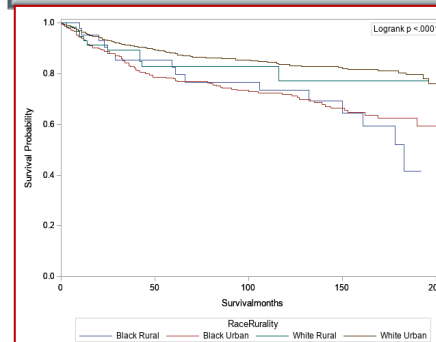
- ▶ The 10-year overall survival proportion was 51% for rural residents [vs 58% urban,  $P < .05$ ]
- ▶ Significant rural & racial differences were observed in overall 10-year survival proportion [urban Caucasian women 63% vs 46% in urban AA & 55% in rural Caucasian women vs 44% for rural AA,  $P < .001$ ]
- ▶ Rural residents who live in 0% - 5% census tract poverty levels had much lower overall 10-year survival of <40% [vs urban 72%,  $P < .001$ ]



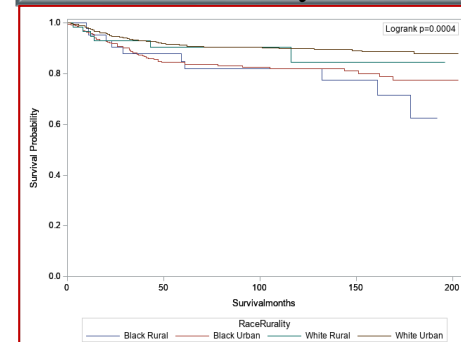
**Overall Survival by race & rurality**



**Disease free survival by race & rurality**



**Overall - Localized lesion**



**Disease free - Localized**

# Results

- ▶ In multivariable Cox regression model stratified by seer staging of the disease, even after accounting for race, rurality and other factors, the risk of death was higher among AA women with regional lesion as compared to Caucasian women.

- **Overall survival: HR, 1.40; 95% CI, 1.16 – 1.68**
- **Disease free survival: HR, 1.42; 95% CI, 1.16 – 1.74**

- ▶ Women aged 66 or higher, with a localized lesion had significantly greater risk of death as compared to 30-49 year olds.

- **Overall survival: HR, 8.92 ; 95% CI, 6.29 – 12.66**
- **Disease free survival: HR, 8.22 ; 95% CI, 5.22 – 12.94**

# Conclusions

- ▶ Significant racial & geographic disparities exist in cervical cancer survival for South Carolina Residents.
- ▶ Assessing the geographic variations in survival among patients diagnosed with cervical cancer can inform opportunities to improve screening rates & reduce mortality especially in high risk populations.

# Acknowledgement

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**Thank you!**

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