

# MERKEL CELL CARCINOMA IN FLORIDA: ANALYSIS FROM A POPULATION-BASED CANCER DATA REGISTRY (1981-2009)

Kevin Moore BA<sup>1,2</sup>, Erin Dunn BA<sup>1,2</sup>, Feng Miao MS<sup>2,3</sup>, Tulay Koru-Sengul PhD<sup>2,3</sup>

<sup>1</sup>Medical Education, <sup>2</sup>Department of Public Health Sciences, <sup>3</sup>Sylvester Comprehensive Cancer Center  
University of Miami Miller School of Medicine, Miami, Florida, USA



## INTRODUCTION

- ❖ Merkel cell carcinoma (MCC) is an uncommon yet highly aggressive neuroendocrine neoplasm of the skin.
- ❖ The majority of MCC cases are associated with Merkel cell polyomavirus infection.
- ❖ The incidence of MCC has increased over the past few decades.
- ❖ Statewide cancer registries provide prevalence, trend, and determinant data to identify disparities in the burden and survival of MCC in the adult population.
- ❖ We report the demographics and survival trends of MCC from 1981 to 2009 in the Florida adult (≥18 yrs) population to identify the disparities among certain ethnic, racial, gender, and mortality due to malignant MCC.

## METHODS

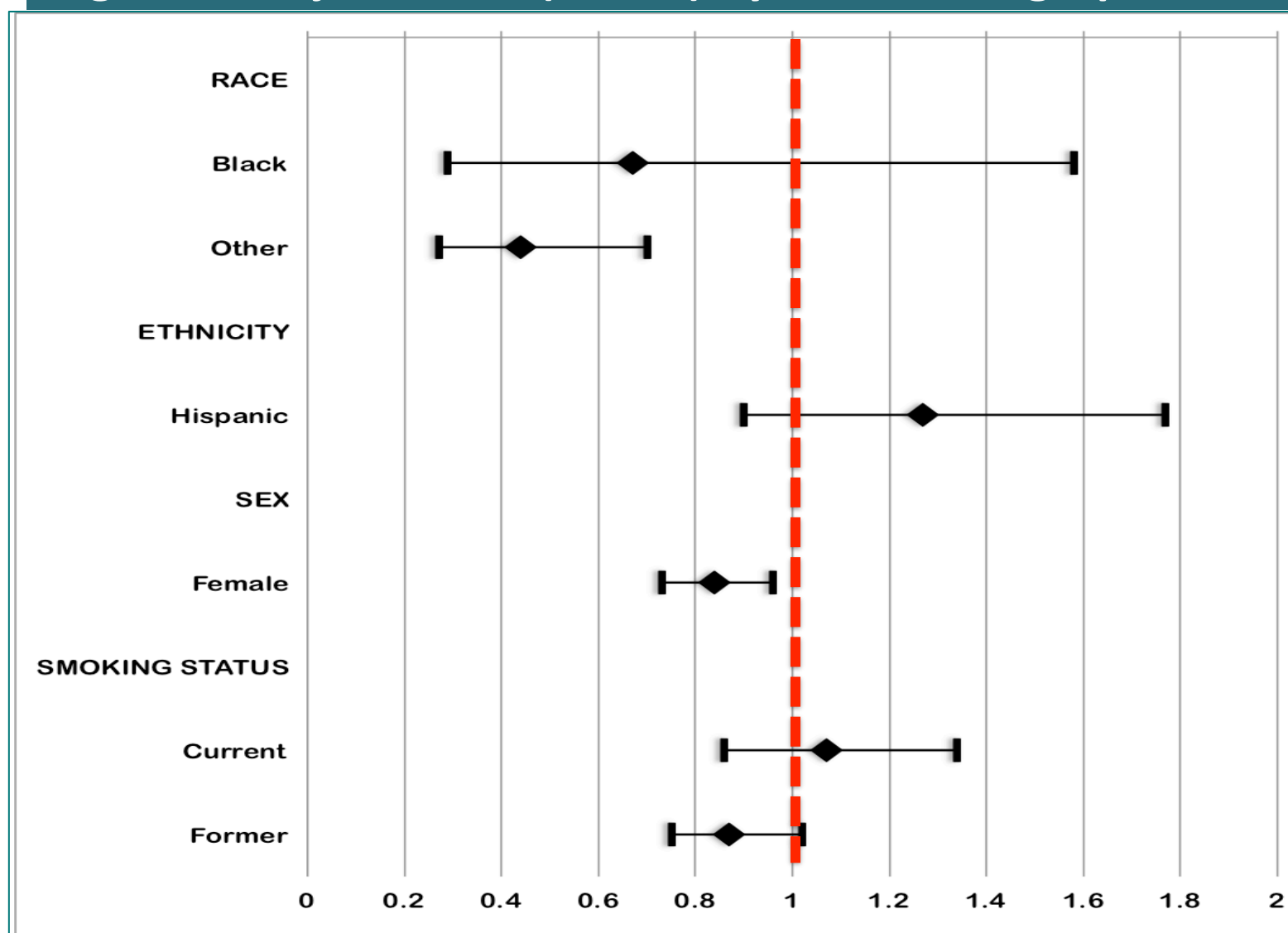
- ❖ The Florida Cancer Data System (1981-2009) was linked with US census to explore median survival and 1-, 3-, 5-year survival rates by sociodemographics.
- ❖ Survival time is the primary clinical endpoint, which is calculated as the elapsed time from date of MCC diagnosis to date of death or the date of last contact if patient is still alive.
- ❖ Survival was compared by gender, race, ethnicity, SES. A multivariable Cox regression model for overall survival is fitted to calculate adjusted hazard ratios (HR) and 95% confidence intervals (95%CI).

Table 1: Sociodemographics (n=80,924)

	All Skin Cancer		Merkel Cell Carcinoma	
	n	%	n	%
<b>GENDER</b>				
Male	48,018	59.3	1,303	66.8
Female	32,906	40.7	648	33.2
<b>RACE</b>				
White	79,868	99.0	1,931	99.0
Black	816	0.8	15	0.8
Other	240	0.3	5	0.3
<b>ETHNICITY</b>				
Hispanic	2,650	3.0	71	3.6
Non-Hispanic	78,274	97.0	1,880	96.4
<b>SES</b>				
Lowest	6,096	7.1	154	7.9
Middle-Low	22,095	27.1	508	26.0
Middle-High	32,700	40.5	819	42.0
Highest	20,033	25.3	470	24.1
<b>SMOKING STATUS</b>				
Never	32,386	40.0	779	39.9
Former	12,788	18.3	614	31.5
Current	9,104	11.3	143	7.3

SES: %households living below the poverty in the neighborhood as lowest (≥20%), middle-low (≥10% and <20%), middle-high (≥5% and <10%), or highest (<5%)

Figure 2: Adjusted HR (95%CI) by Sociodemographics



A multivariable Cox regression model included type of SC, race, ethnicity, SES, age at diagnosis, gender, smoking status, marital status, grade, stage, regional node positivity, surgery  
In the figure reference category for the respective groups are White, Male, and Never Smoker

Kaplan-Meier Overall Survival Curves

Figure 1a: by Race

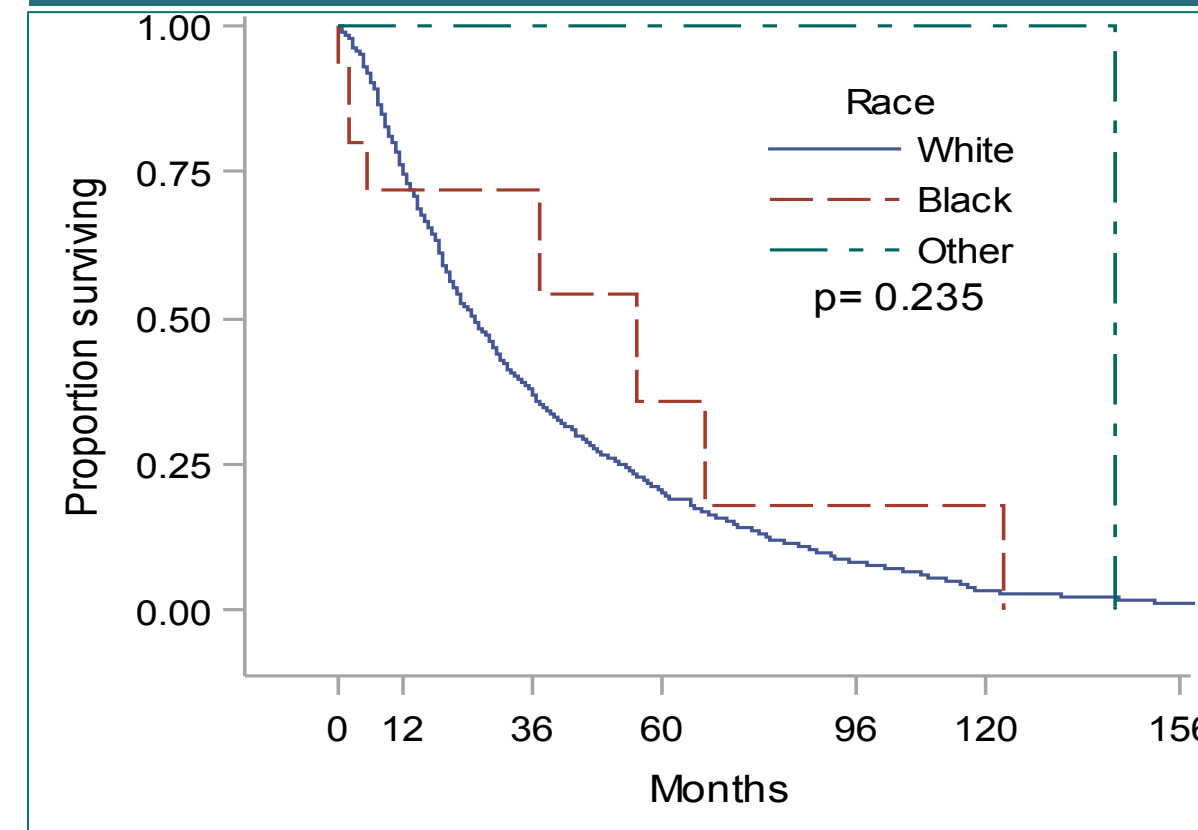


Figure 1b: by SES

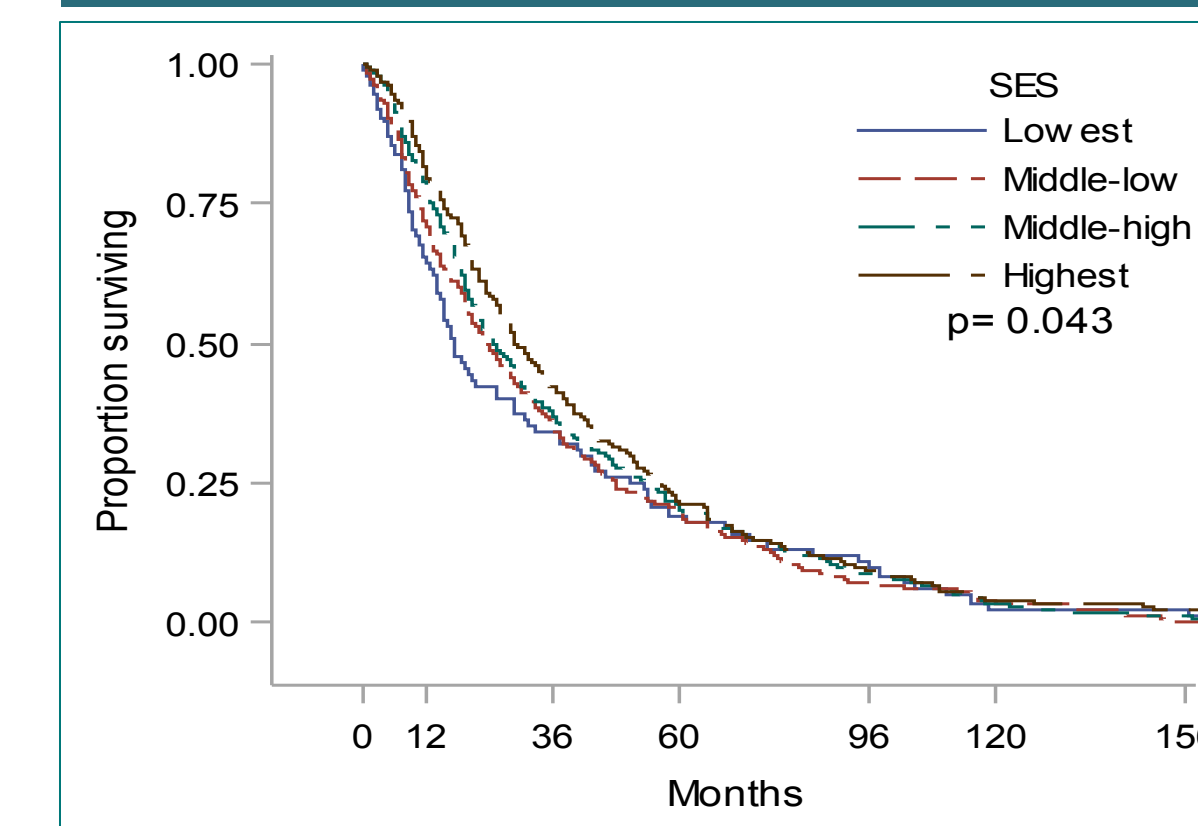
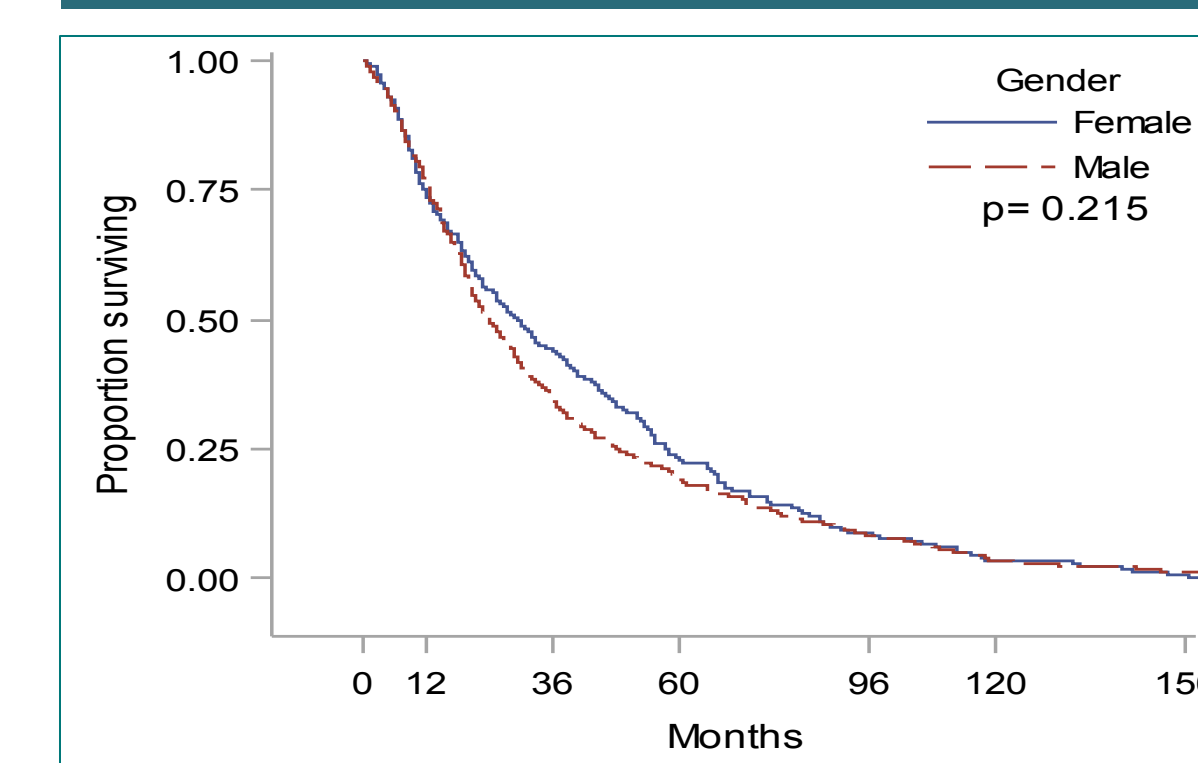


Figure 1c: by Gender



## RESULTS

- ❖ From 1981 to 2009, there were 1,951 diagnosed cases of MCC with 66.8% of those diagnosed in males. (Table 1)
- ❖ 60.1% of those diagnosed with MCC were on Medicare, and 95.9% of those diagnosed lived in an urban setting.
- ❖ The five-year survival rate was 20.5% overall with a median survival time of 2.1 years from diagnosis.
- ❖ Black race showed better survival than White race with median survival time from diagnosis of 4.6 years (95% CI: 0.2, 10.3) and a hazard ratio of 0.81 (0.4, 1.63). (Figure 1a)
- ❖ Hispanic ethnicity demonstrated worse survival than non-Hispanic ethnicity with a hazard ratio of 1.23 (0.83, 1.83).
- ❖ Females diagnosed with MCC had a median survival time from diagnosis of 2.5 years (2.1 – 2.9) and a hazard ratio of 0.9 (0.8, 1.02) when compared to males diagnosed with MCC. (Figure 1c)
- ❖ The highest income category of neighborhood status had longest median survival of 2.4 years from diagnosis compared to all other categories of neighborhood status. (Figure 1b)

## CONCLUSION

- ❖ Using the statewide Florida cancer registry, it is evident that there are clear disparities across genders, ethnicities, races, and neighborhood income levels in Merkel cell carcinoma survival in the Florida adult population.
- ❖ By identifying which groups carry the largest burden of Merkel cell carcinoma, we can establish group-specific screening efforts.
- ❖ In addition, the survival disparities demonstrate which groups carry the greatest mortality burden due to Merkel cell carcinoma.