

# Racial and socio-economic disparities in melanoma incidence rates in Georgia: 2000-2010

## Background

- In the United States (US), skin cancer is the most frequently diagnosed cancer; with malignant melanoma accounting for 75% of all deaths.<sup>1</sup>
- Warning signs of melanoma include asymmetrical moles with irregular borders, varied color and diameter larger than 6mm.<sup>2</sup> (Figure 5)
- In Georgia (GA), the rate of new melanoma diagnoses was 13% higher than the national average from 2002-2006.<sup>3</sup>
- Studies have shown a relationship between melanoma and socioeconomic status (SES), with high SES associated with increased incidence.<sup>4</sup>
- Limited research on melanoma in GA has been conducted, so initial epidemiologic descriptions of geographic and racial trends are important.

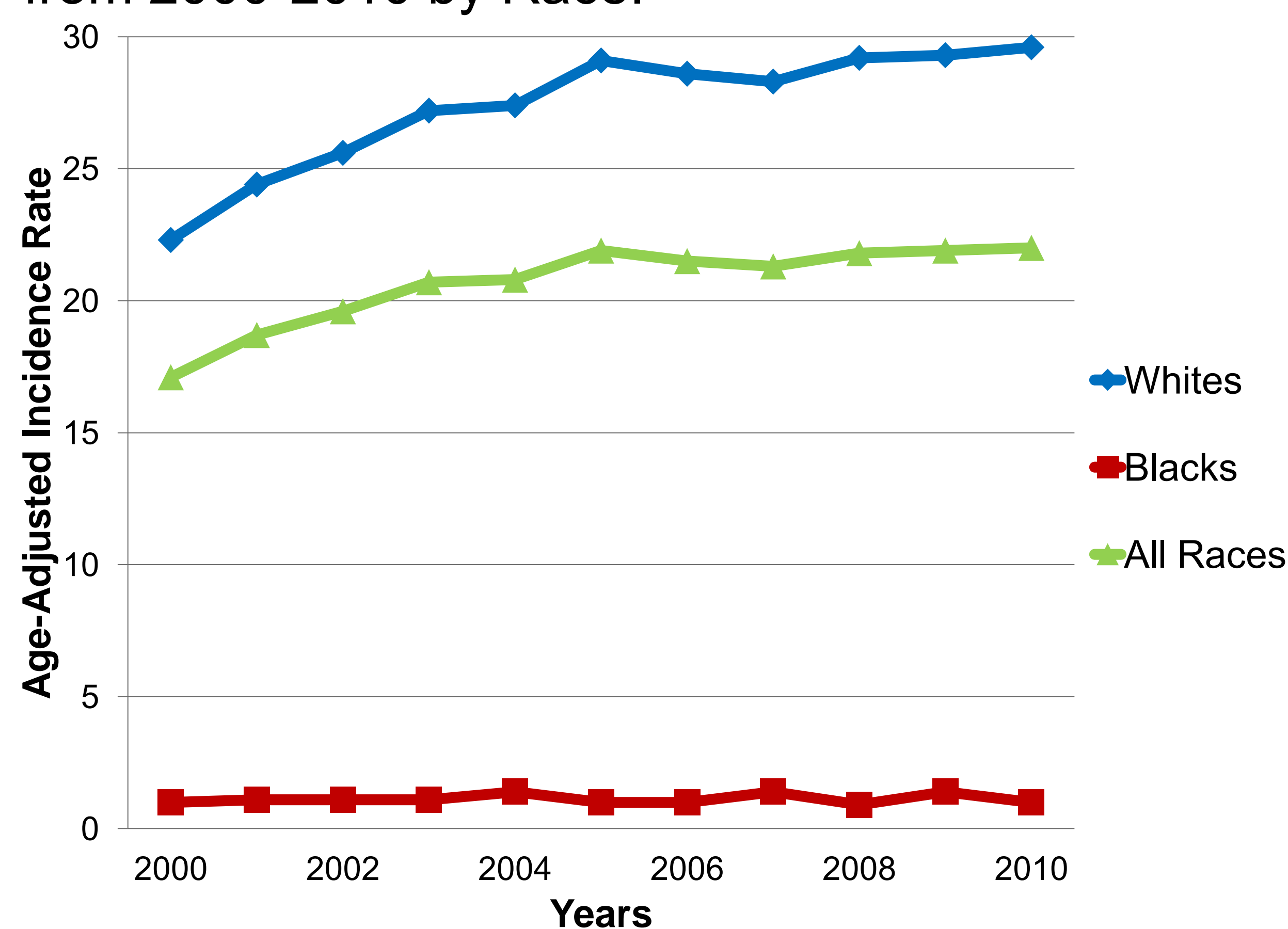
## Objective

- To explore melanoma incidence rates in GA by race and SES. Descriptive statistics were examined over time as well as geography.

## Methods

- Age-adjusted melanoma incidence rates (IRs) were obtained from the Georgia Comprehensive Cancer Registry SEER\*Stat Database for the years 2000-2010.
- Maps were generated using Geographic Information Systems (GIS) to compare incidence rates across public health districts and by race.
- Hot spots of melanoma incidence were analyzed at the county level using the Getis-Ord Gi\* Statistic in GIS.

**Figure 1. Melanoma Incidence Rates in Georgia from 2000-2010 by Race.**

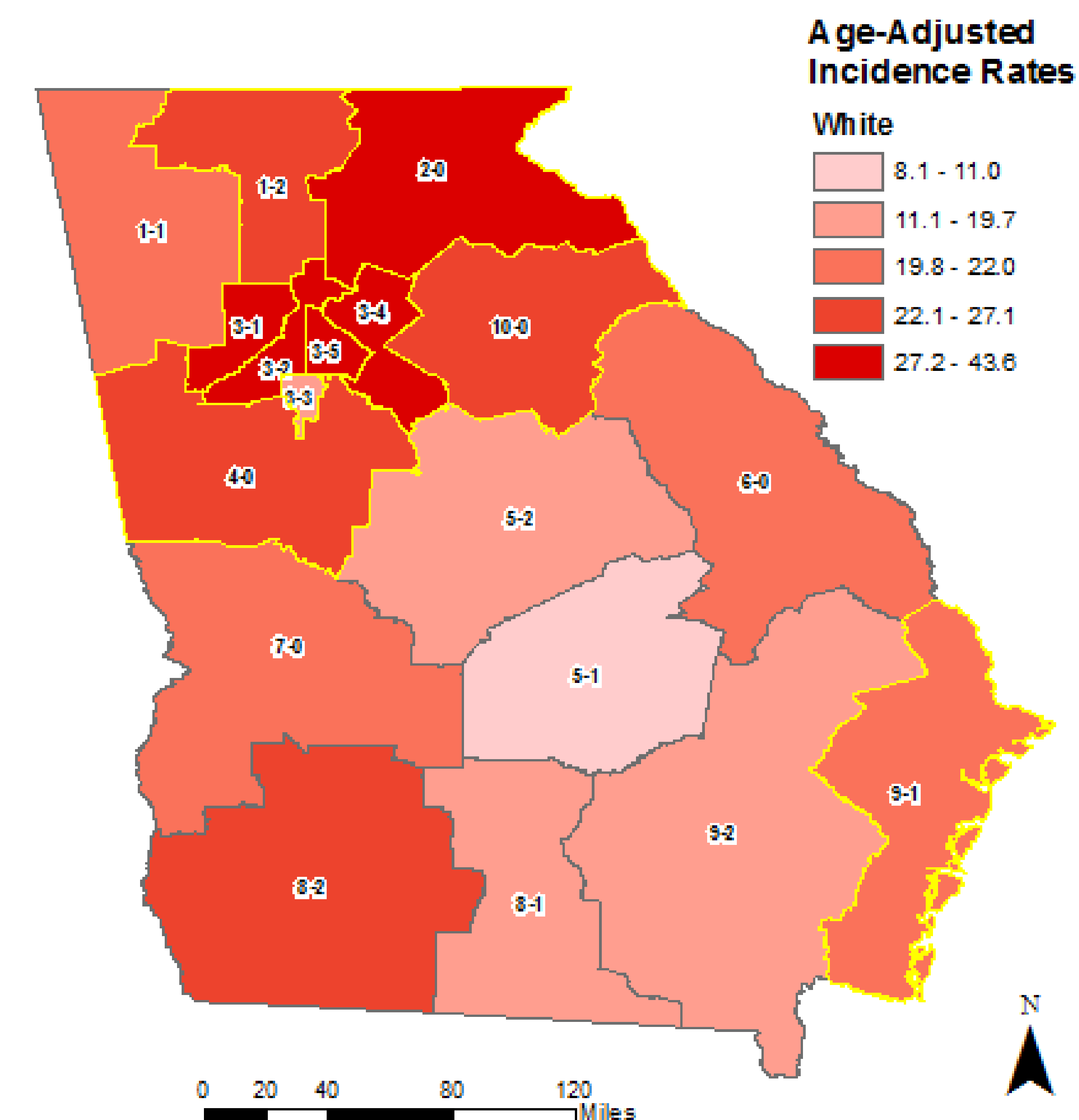


Rates are per 100,000 and age-adjusted to the 2000 US Standard Population (19 age groups - Census P25-1130).

## Results

- From 2000-2010, age-adjusted IRs of melanoma were slightly higher in GA than the US (20.8 vs. 20.2 per 100,000 population). (Table 1)
- In GA, IRs were much higher among Whites than Blacks (27.5 vs. 1.1). (Table 1)
- Over those 10 years, IRs among Whites have been steadily increasing (from 22.3 to 29.6), whereas rates for Blacks have remained constant (average of 1.1). (Figure 1)
- Of the nine districts with the highest incidence rates for Whites and Blacks, only one (1-1) was categorized as a low SES district. (Figures 2 and 3)

**Figure 2. Melanoma Incidence Rates by Public Health District for Whites, 2000-2010**



Data Source:

Georgia Comprehensive Cancer Registry SEER\*Stat Database.

\*Rates are per 100,000 and age-adjusted to the 2000 US Standard Population (19 age groups - Census P25-1130).

\*\*Highlighted areas are categorized as high SES compared to the median of the median per capita income of the Public Health districts (\$20,005).

\*\*\*Public Health District Names: 1-1 Northwest; 1-2 Northwest Georgia; 2 North; 3-1 Cobb-Douglas; 3-2 Fulton; 3-3 Clayton; 3-4 East Metro; 3-5 DeKalb; 4 LaGrange; 5-1 South Central; 5-2 North Central; 6 East Central; 7 West Central; 8-1 South; 8-2 Southwest; 9-1 Coastal; 9-2 Southeast; 10 Northeast.

## Results Continued

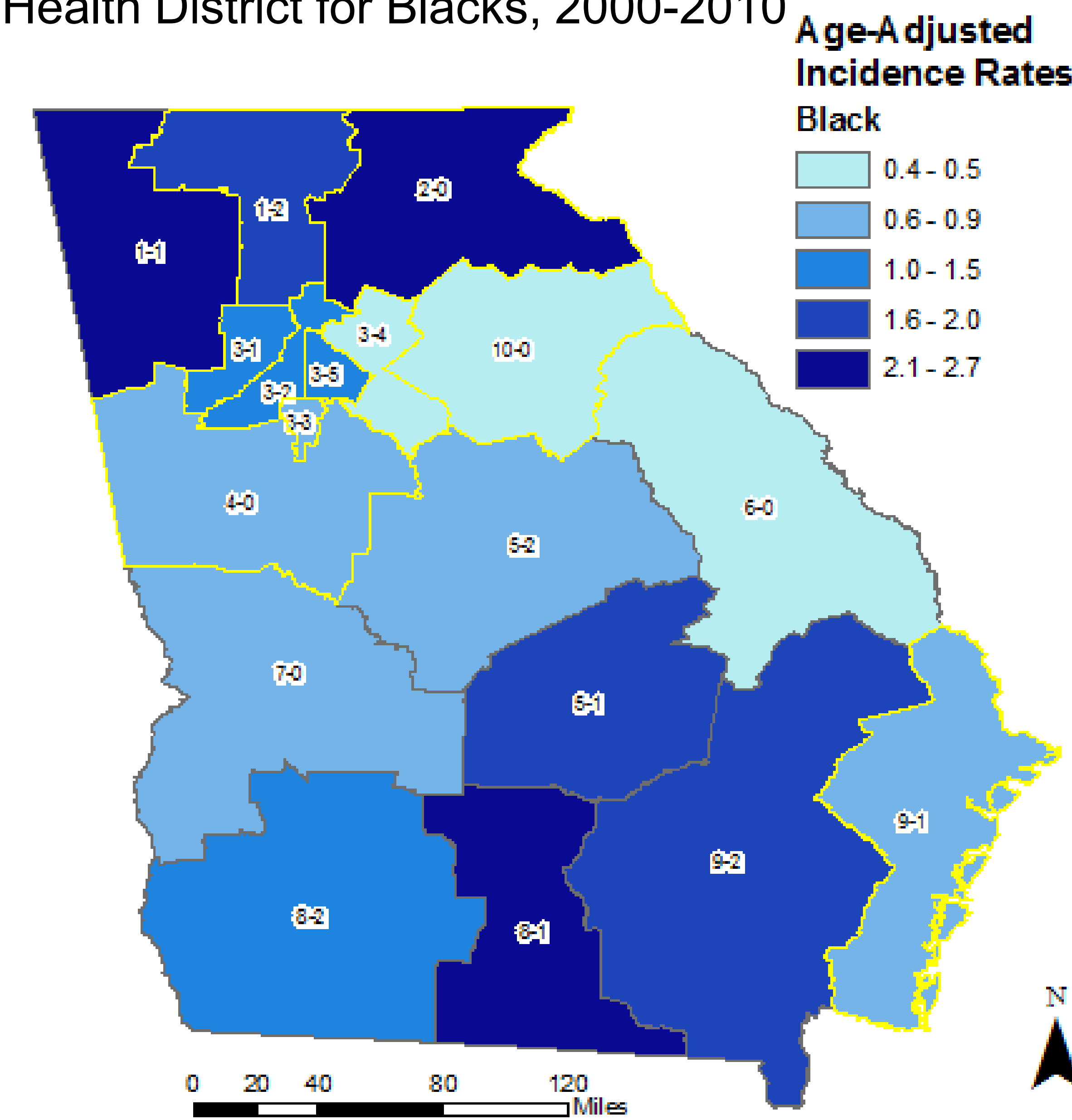
- All but one of the districts with high SES were located in the northern part of GA. (Figures 2 and 3)
- For Whites, the highest melanoma incidence rates were concentrated in the urban areas surrounding Atlanta. (Figure 2)
- For Blacks, the highest melanoma incidence rates were spread to the more rural areas in the northern and southern regions of GA. (Figure 3)
- For all races, there were statistically significant hotspots of melanoma IRs in 27 of the northern counties of GA (17% of all GA counties). (Figure 4)
- There were statistically significant "cold spots" (areas with low melanoma IRs) in 18 counties in the central area of GA (11% of GA counties). (Figure 4)

**Table 1. Overall Incidence Rates for Georgia and the United States by Race, 2000-2010**

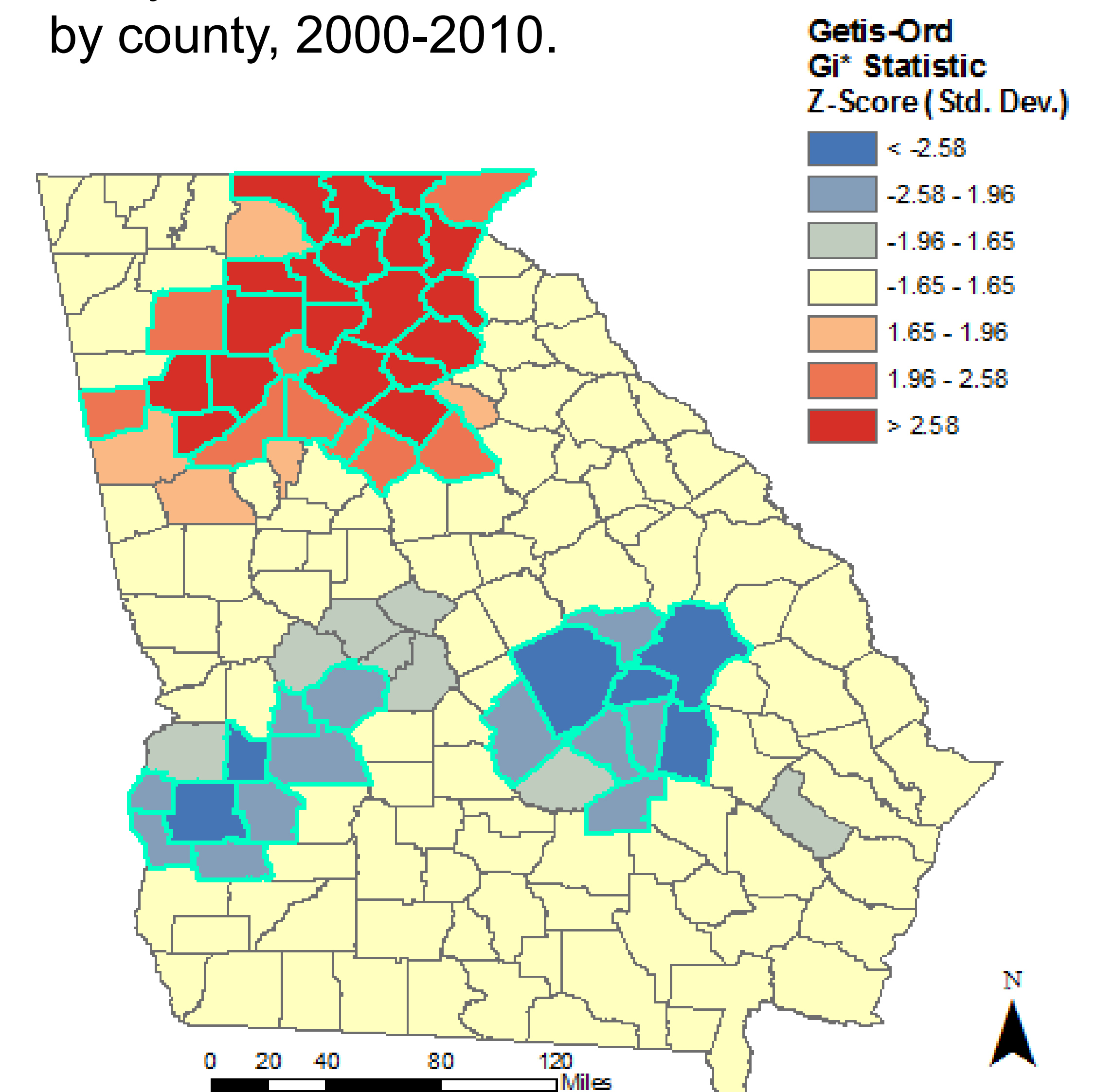
Race	Incidence Rate	
	Georgia	United States
White	27.5	23.8
Black	1.1	1.0
All	20.8	20.2

Rates are per 100,000 and age-adjusted to the 2000 US Standard Population (19 age groups - Census P25-1130).

**Figure 3. Melanoma Incidence Rates by Public Health District for Blacks, 2000-2010**



**Figure 4. Getis-Ord Gi\* Statistic for hot spot analysis of melanoma incidence for all races by county, 2000-2010.**



Positive Z-score indicates clustering of high values. Negative Z-score indicates clustering of low values. Highlighted area indicates statistically significant cluster,  $p < 0.05$ .

## Discussion

- Map comparisons of public health districts in GA are consistent with previous research findings that higher melanoma incidence rates are associated with high SES in Whites and, to a lesser extent, in Blacks.<sup>4</sup>
- Understanding the difference in geographic distribution of high melanoma incidence rates among Blacks and Whites will help target prevention and education efforts.
- Future research will focus on additional factors that contribute to SES besides median per capita income as well as individual-level cancer data.

**Figure 5. Melanoma of the skin.**



## Conclusion

- Melanoma interventions in Georgia should focus on urban White and rural Black at-risk populations, especially those with high SES.