

11. Stroke mortality In Appalachia

Stroke is the third leading cause of death nationally, behind heart disease and cancer; however, many persons who suffer from a stroke survive and are often left with either a physical or mental disability. Common risk factors for stroke include hypertension, diabetes, heart disease, smoking, obesity, physical inactivity, and alcohol use among others. Stroke death rates are typically higher for men than women and rates for black populations are commonly twice as high as those for white populations. High stroke mortality has been persistent in the Southeastern U.S. along a swath of states extending from the Atlantic coast, along the Gulf Coast, to the Mississippi River. This region is now commonly referred to as the ‘Stroke Belt’ (Casper *et al*, 1995). A significant number of Appalachian counties are within this region.

Both in the Appalachian region and the non-Appalachian U.S., death rates from stroke rank fourth among death rates used in this analysis for white and black men of both age groups and third among white and black women of both age groups (Figure. 6 – Section I).

County –Level Rates of Stroke Mortality in Appalachia

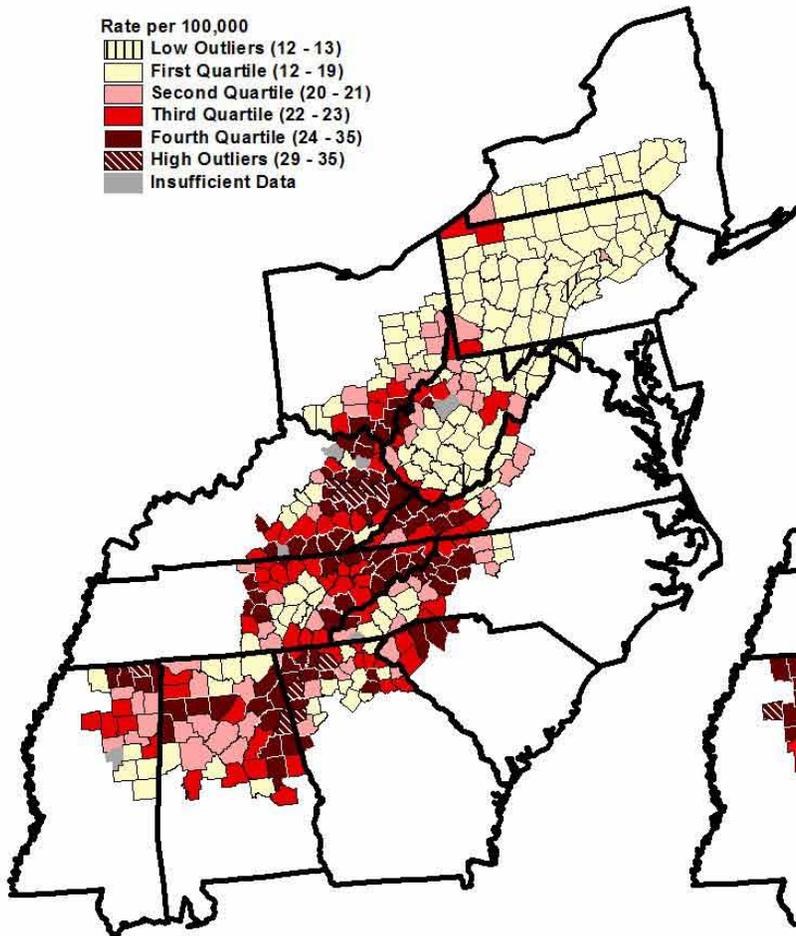
County level rates of mortality from stroke are shown on pages 76-79. County-level stroke death rates range from 12 to 35 deaths per 100,000 among white men ages 35 to 64, from 350 to 758 deaths per 100,000 among elderly white men, from 36 to 126 deaths per 100,000 among black men ages 35 to 64, from 286 to 1,036 deaths per 100,000 among elderly black men, 10 to 25 deaths per 100,000 among white women ages 35 to 64, from 307 to 680 deaths per 100,000 among elderly white women, from 29 to 76 deaths per 100,000 among black women ages 35 to 64, and from 308 to 764 deaths per 100,000

among elderly black women. The disparity among county level death rates is greatest among black men followed by black women (Table 2 & 3 - Section I).

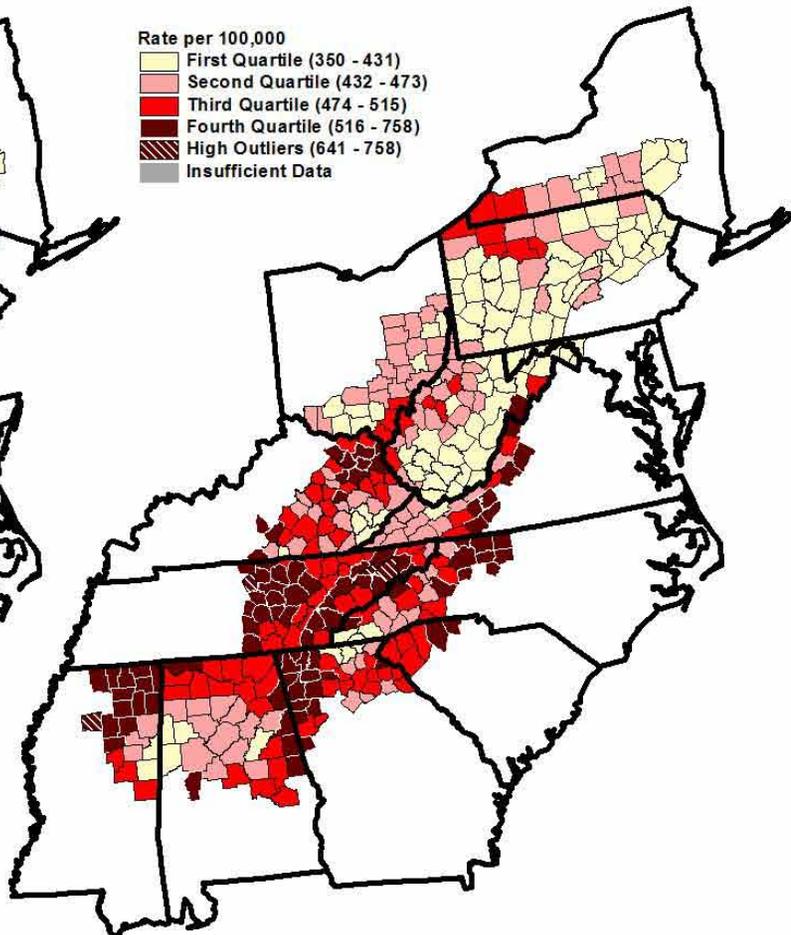
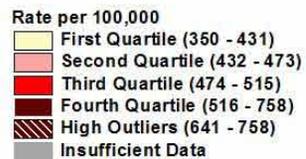
Distinct geographic patterns are evident in the distribution of stroke death rates, and there appear to be a high degree of similarity in the geographic distribution of rates among the geographic subgroups. In general, high death rates from stroke are predominant in the southern portion of the Appalachian region among all demographic subgroups. This pattern is consistent with the history of the ‘Stroke Belt’. Among white men of both age groups, high stroke death rates appear to cluster primarily in Eastern Kentucky, Southern West Virginia, and Southeastern Ohio with high outliers occurring in several counties in Eastern Kentucky, Eastern Tennessee, Northeastern Mississippi, Alabama, Northern Georgia, and Western North Carolina. Geographic patterns of stroke death rates for white women are very similar to those of white men with the primary exception of high rates counties in Southern West Virginia among white women ages 35 to 64. Geographic patterns of stroke death rates indicate high rates occurring in the more southern counties in the region, with the exception of some high rate counties in Eastern Ohio and Northwestern Pennsylvania for elderly black women.

Smoothed Stroke Death Rate, 1990-1997

White Men Ages 35 to 64

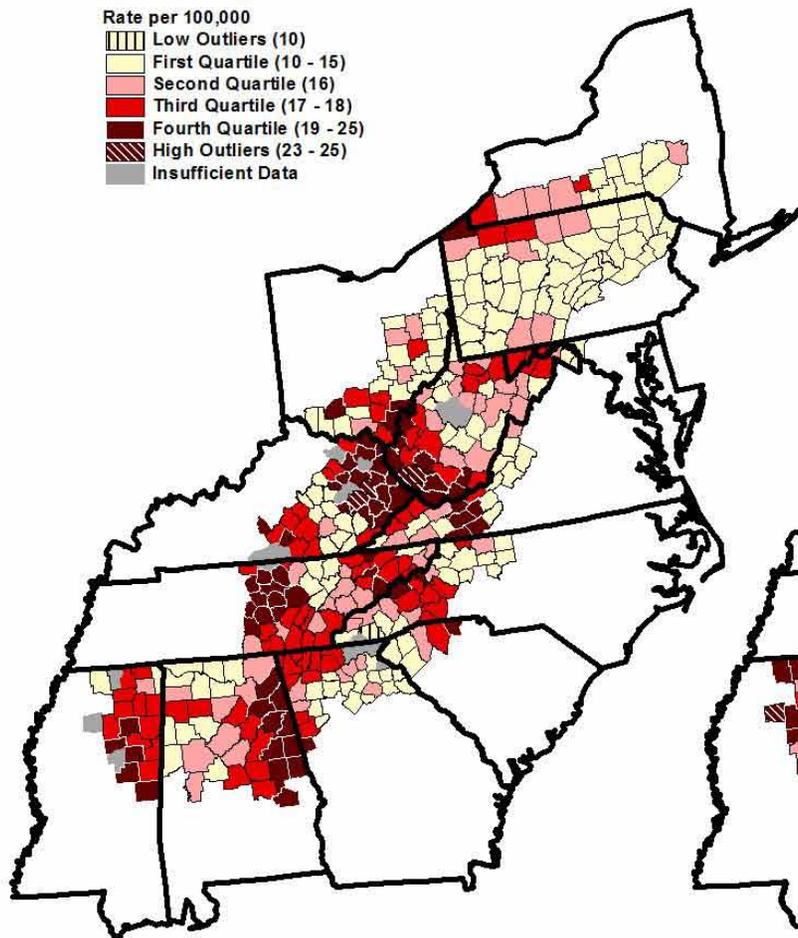


White Men Ages 65 and Older

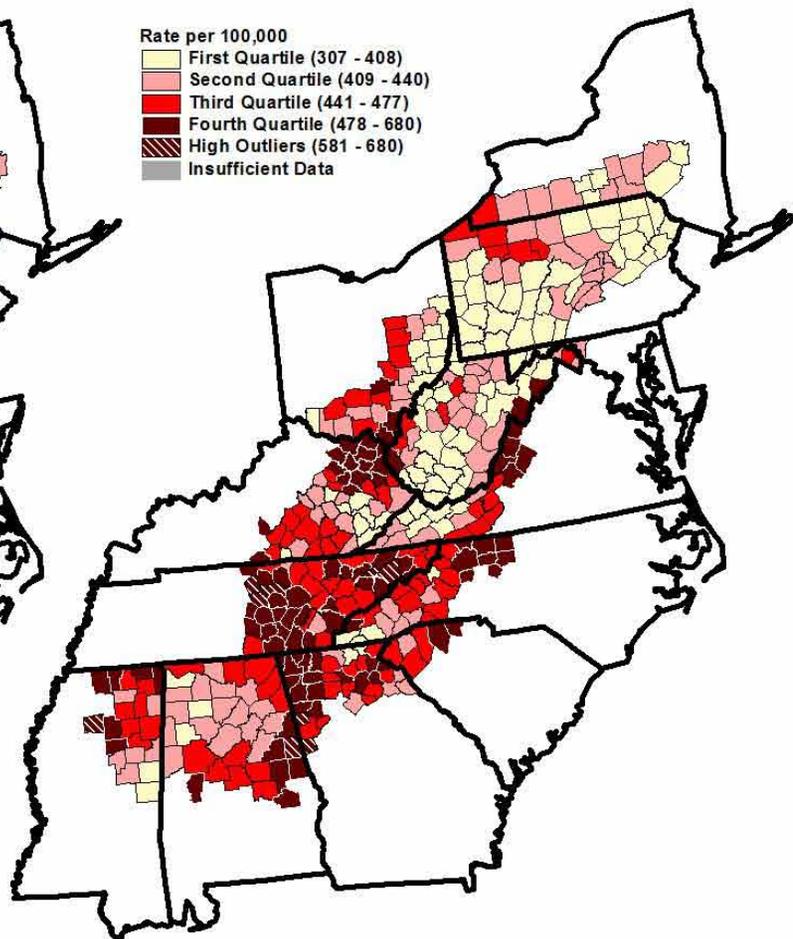
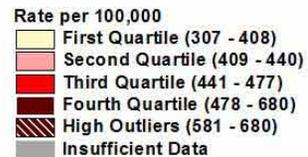


Smoothed Stroke Death Rate, 1990-1997

White Women Ages 35 to 64

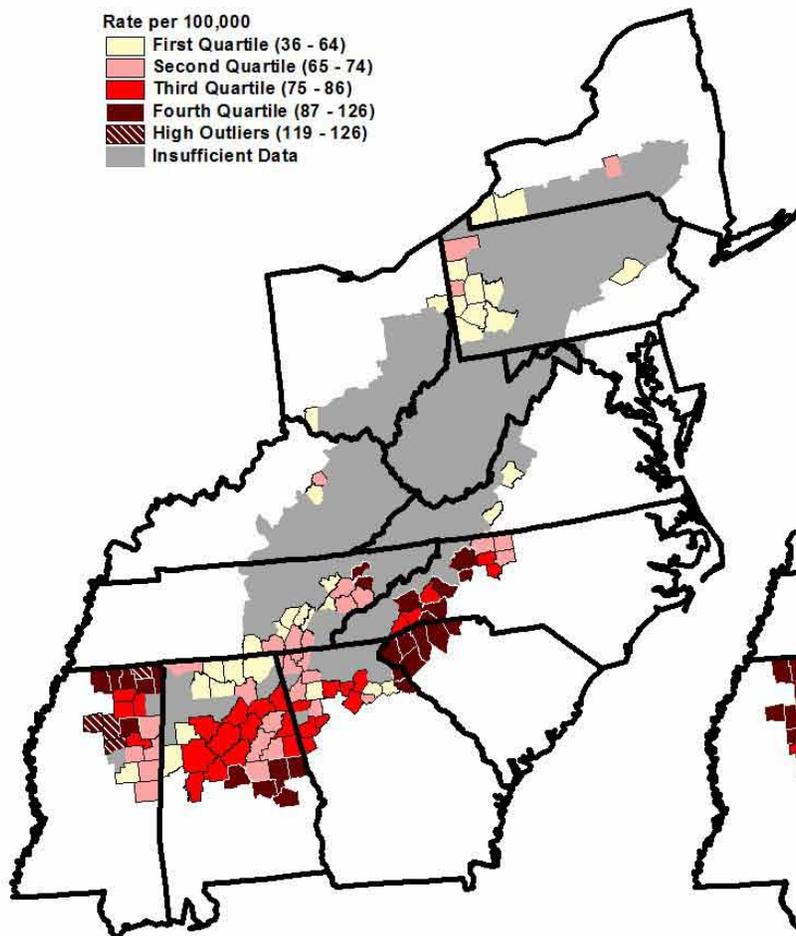
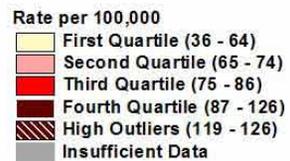


White Women Ages 65 and Older

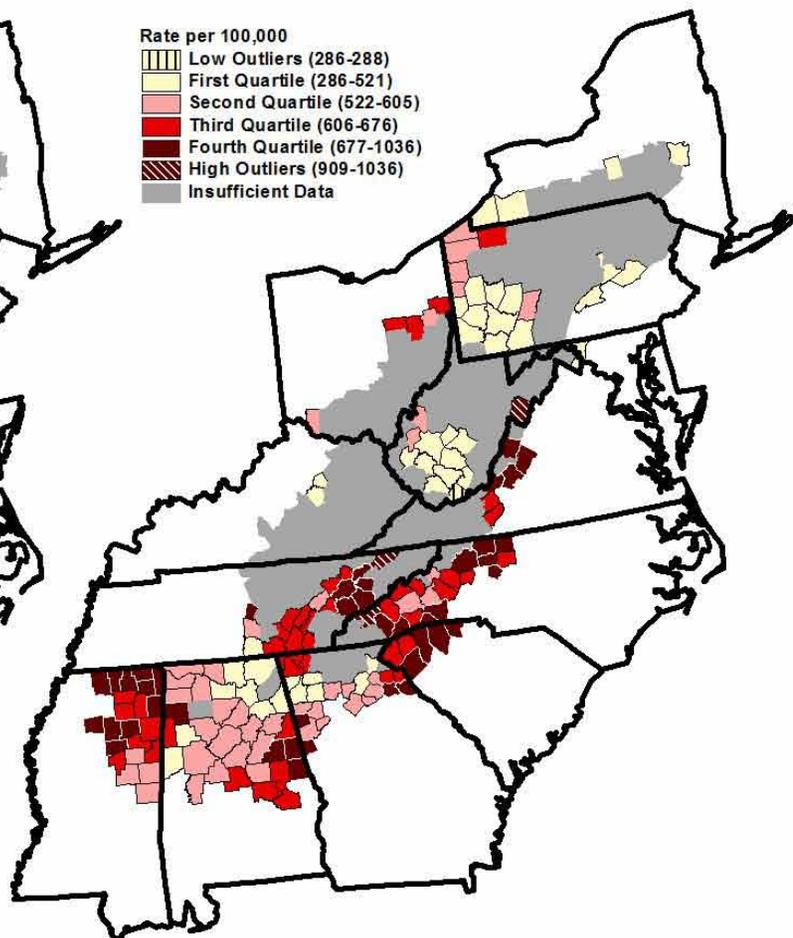


Smoothed Stroke Death Rate, 1990-1997

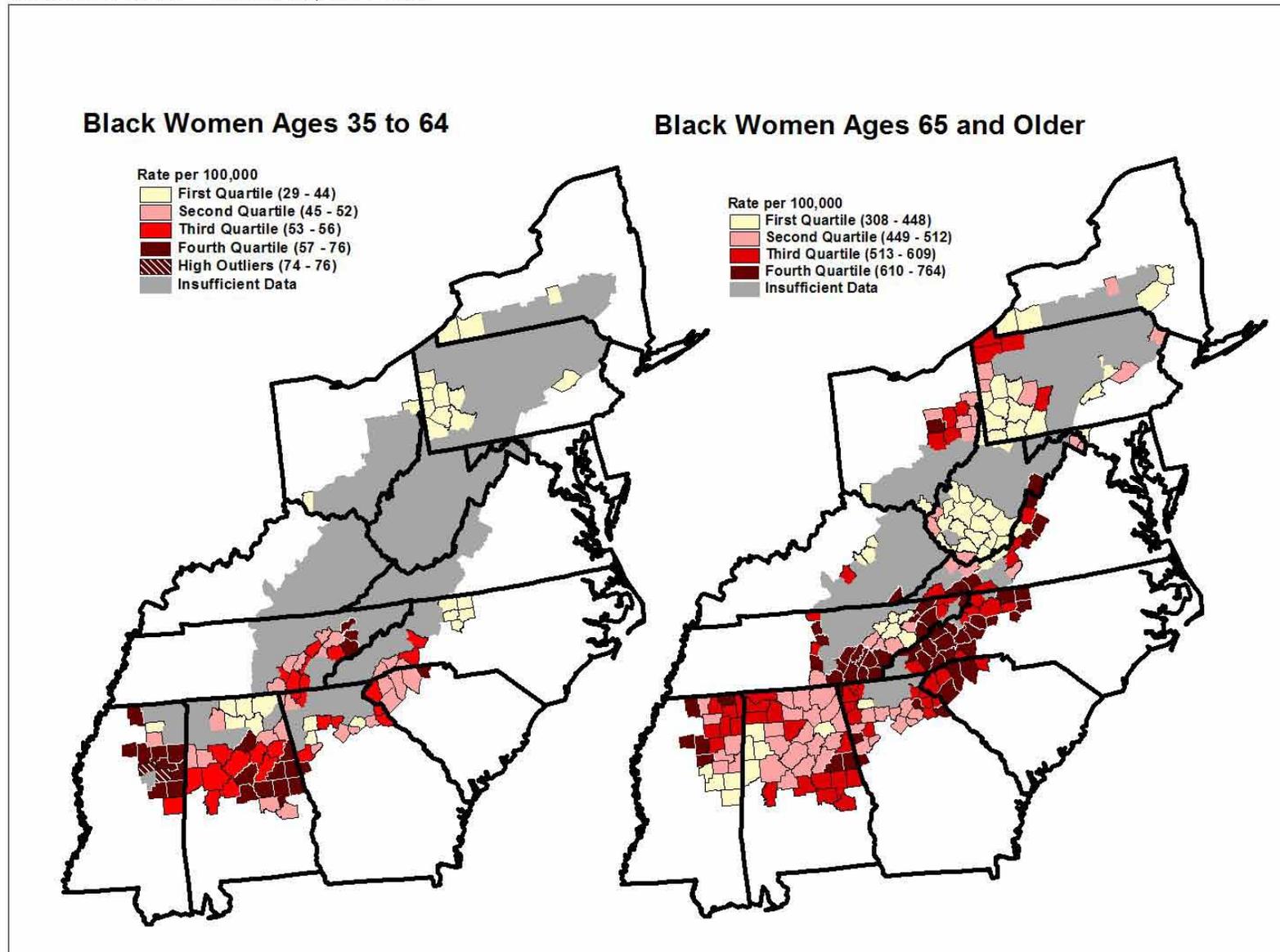
Black Men Ages 35 to 64



Black Men Ages 65 and Older



Smoothed Stroke Death Rate, 1990-1997



12. County-Level Trends in Stroke Mortality

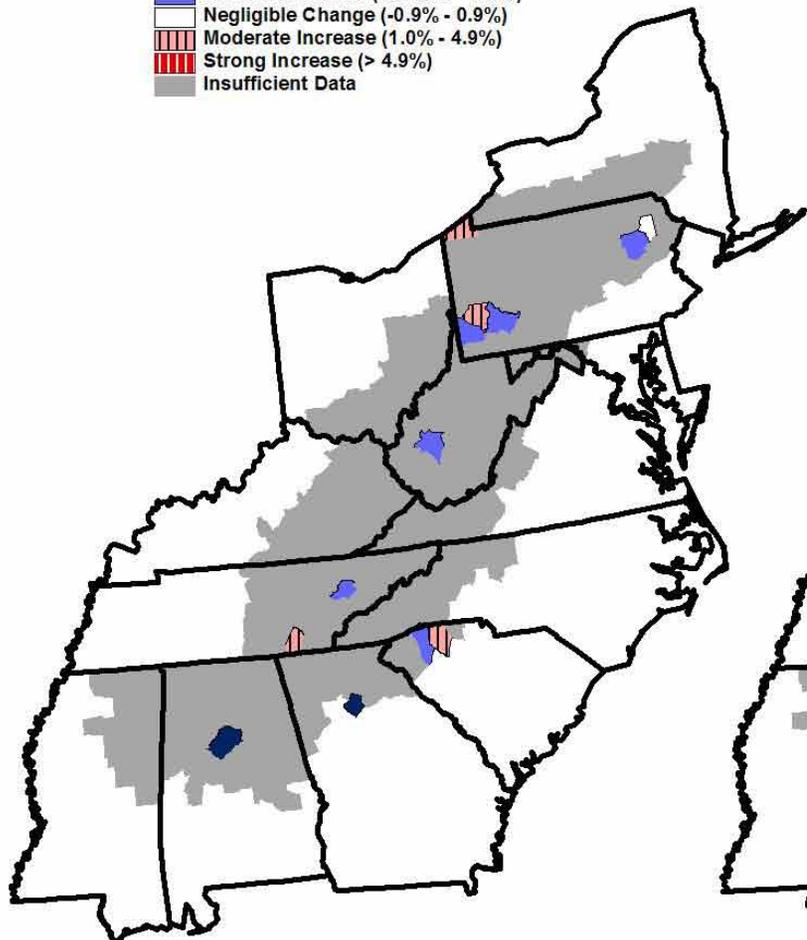
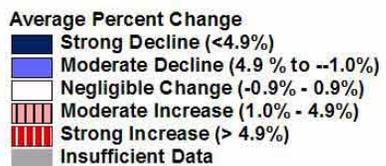
Maps depicting trends for stroke death rates over the period 1985-1997 are presented on pages 81-84. Overall, death rates from stroke have steadily declined since the 1900's. The county-level trends presented in the following maps indicate significant variability in the stroke mortality trends among counties in the Appalachian region. For many counties there were insufficient data to calculate county-level stroke mortality trends, particularly among the 35 to 64 age groups and all black population subgroups (refer to Section I B. County level Mortality Analyses and the Technical Appendix B for details on the estimation of mortality trends).

For the most part, county level trends on pages 81-84 show that most counties have continued the historic trend in decline. Most counties have experienced at least moderate declines in stroke mortality over the study period. However, a number of counties have experienced moderate to strong increases in mortality from stroke. While these increases appear to be spread throughout the region, Northern Pennsylvania seems to exhibit a disproportionate number of increases for elderly white men. Most of the counties which experienced increases in stroke mortality among elderly white women occur in the southern portion of the Appalachian region.

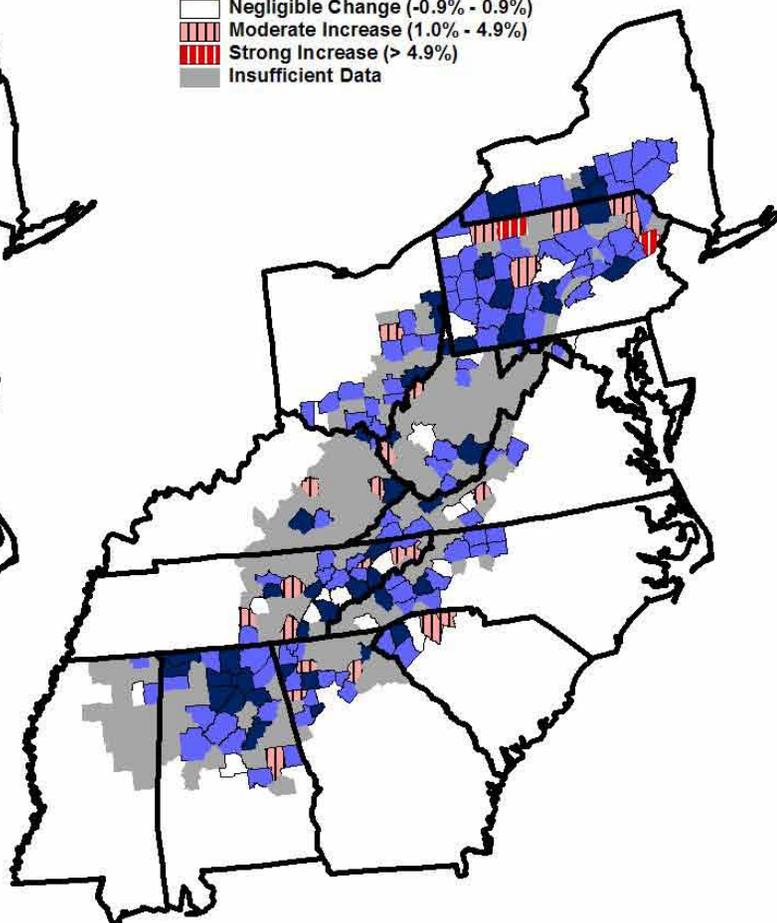
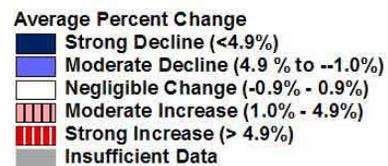
Despite a greater risk of mortality from stroke among black populations, these analyses were unable to estimate stroke mortality trends among black population groups for most counties in the region. This is likely due to generally small black populations in the region.

Trends in Stroke Mortality, 1985-1997

White Men Ages 35 to 64

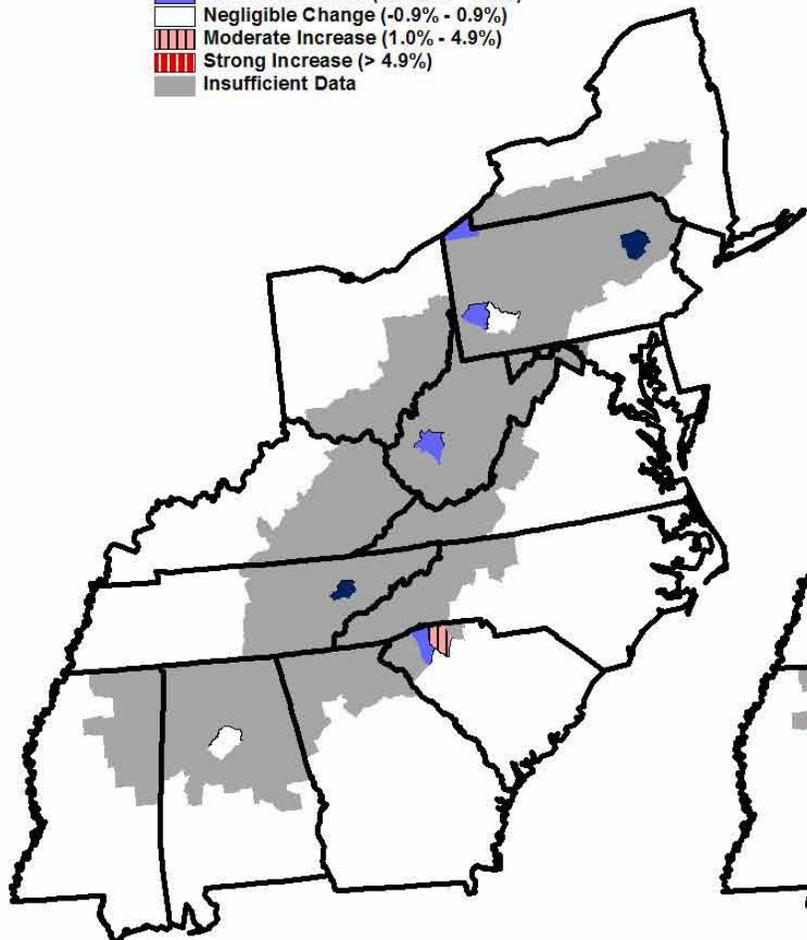


White Men Ages 65 and Older

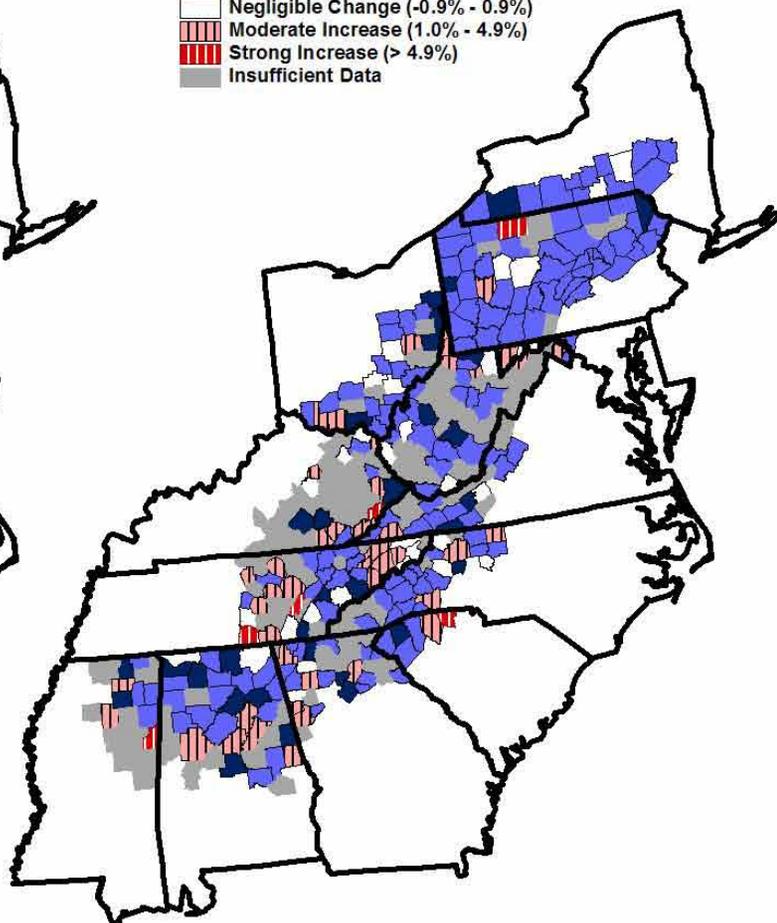


Trends in Stroke Mortality, 1985-1997

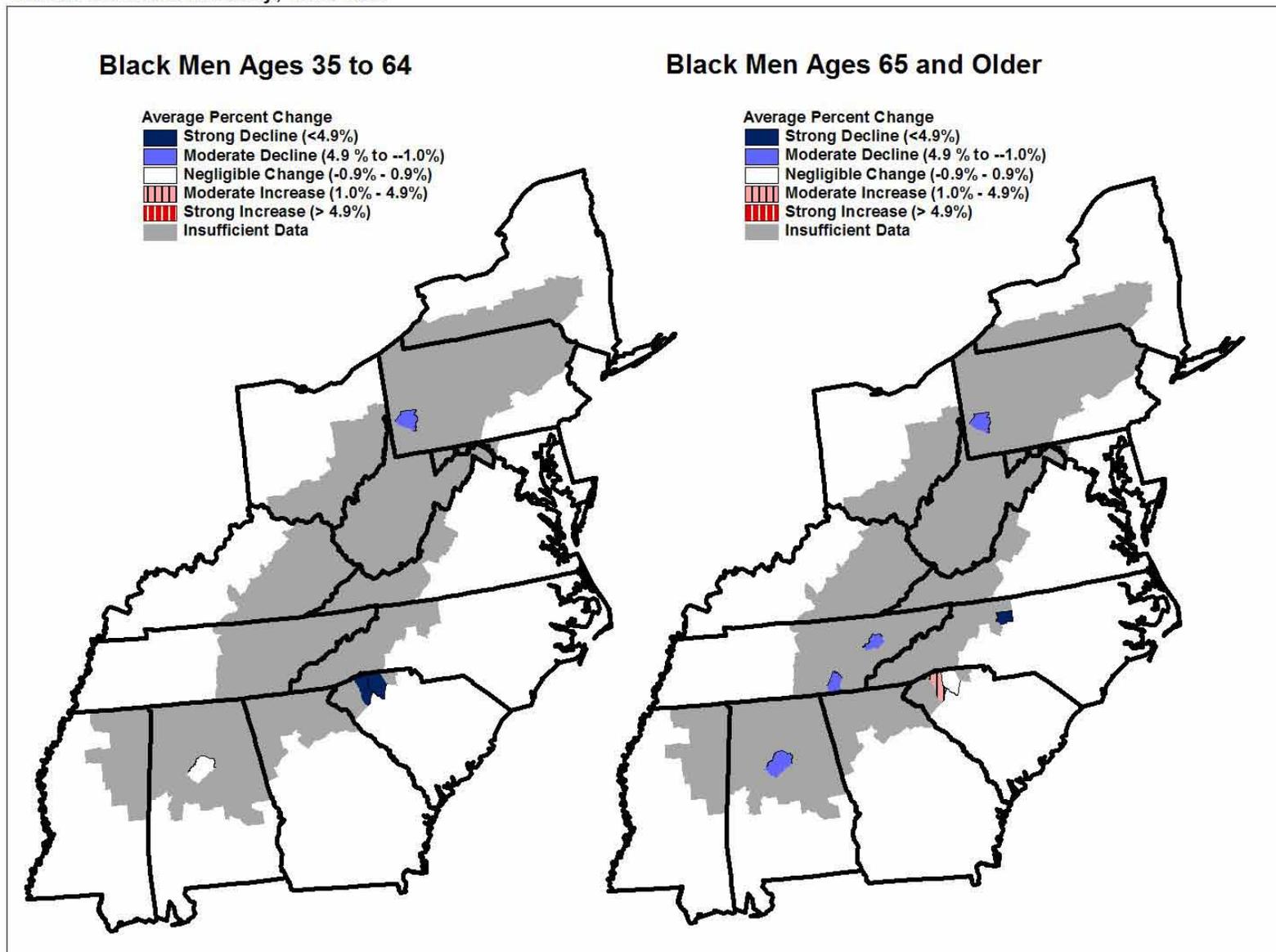
White Women Ages 35 to 64



White Women Ages 65 and Older

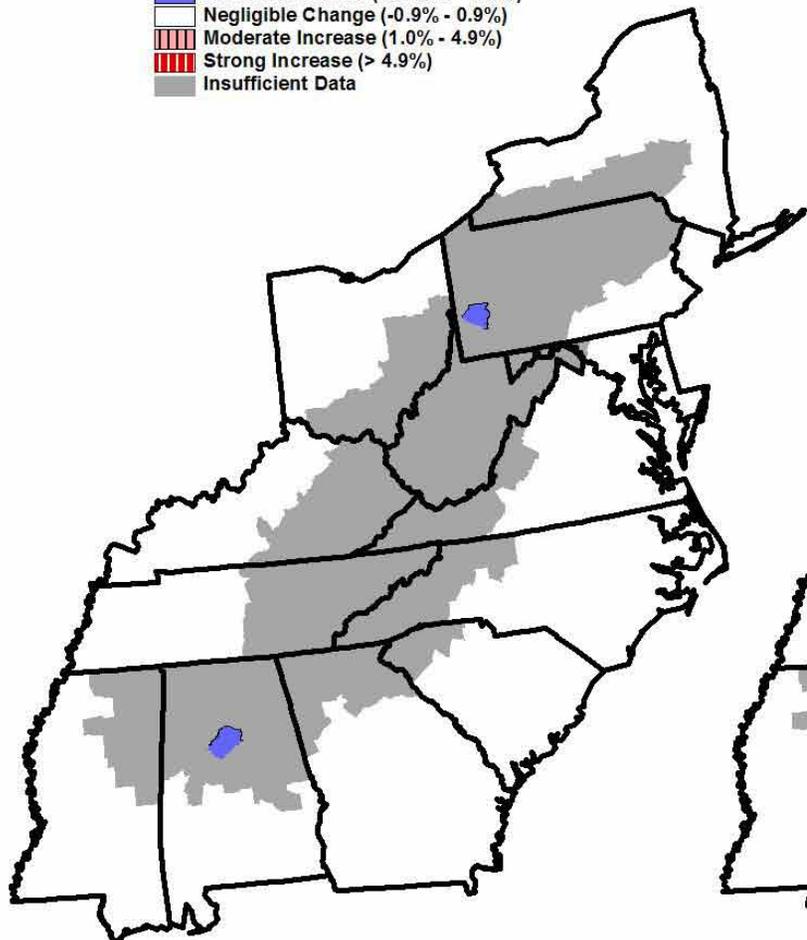
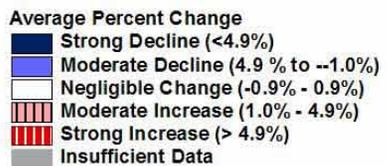


Trends in Stroke Mortality, 1985-1997



Trends in Stroke Mortality, 1985-1997

Black Women Ages 35 to 64



Black Women Ages 65 and Older

