

19. Suicide mortality In Appalachia

Suicide is a serious public health problem. In 1999 suicide was the 11th leading cause of death overall and the 8th leading cause of death for men (U.S. Public Health Service, 1999). Suicides in 1999 outnumbered homicides by five to three and deaths due to AIDS by two to one. National rates of suicide vary significantly among gender, age, and race/ethnicity. More men than women die from suicide by a ratio of four to one. In 1999, white men and women accounted for 90 percent of suicide and white males accounted for 72 percent of all suicides. National rates of suicide are highest for persons aged 65 years and older. Suicides are typically linked to some level of mental illness, depression, and/or substance abuse disorder. However, there are numerous factors which may serve to either initiate or exacerbate mental health problems, including loss of job or vocation, loss of a spouse or loved one, and illness or disability. The elderly are more likely to experience these conditions and may therefore be more susceptible to suicidal ideation.

In addition to an annual average of approximately 30,000 suicide deaths, around 500,000 people receive hospital treatment for attempted suicide each year. Along with placing a considerable burden on the public health infrastructure, suicide and attempted suicide adversely affect thousands of people who have had friends or family members commit suicide. County-level analyses of suicide rates may reveal local conditions which contribute to poor mental health and aid in developing intervention strategies for preventing suicides.

For small geographic areas, such as counties, deaths attributable to suicide are relatively rare. Over the period of analysis in this study, the number of suicide deaths is too small to permit the calculation of death rates by age, race/ethnicity,

and gender at the county level. Death rates for suicide were therefore calculated for six demographic subgroups; all persons, all men, and all women ages 35 to 64 and ages 65 and older.

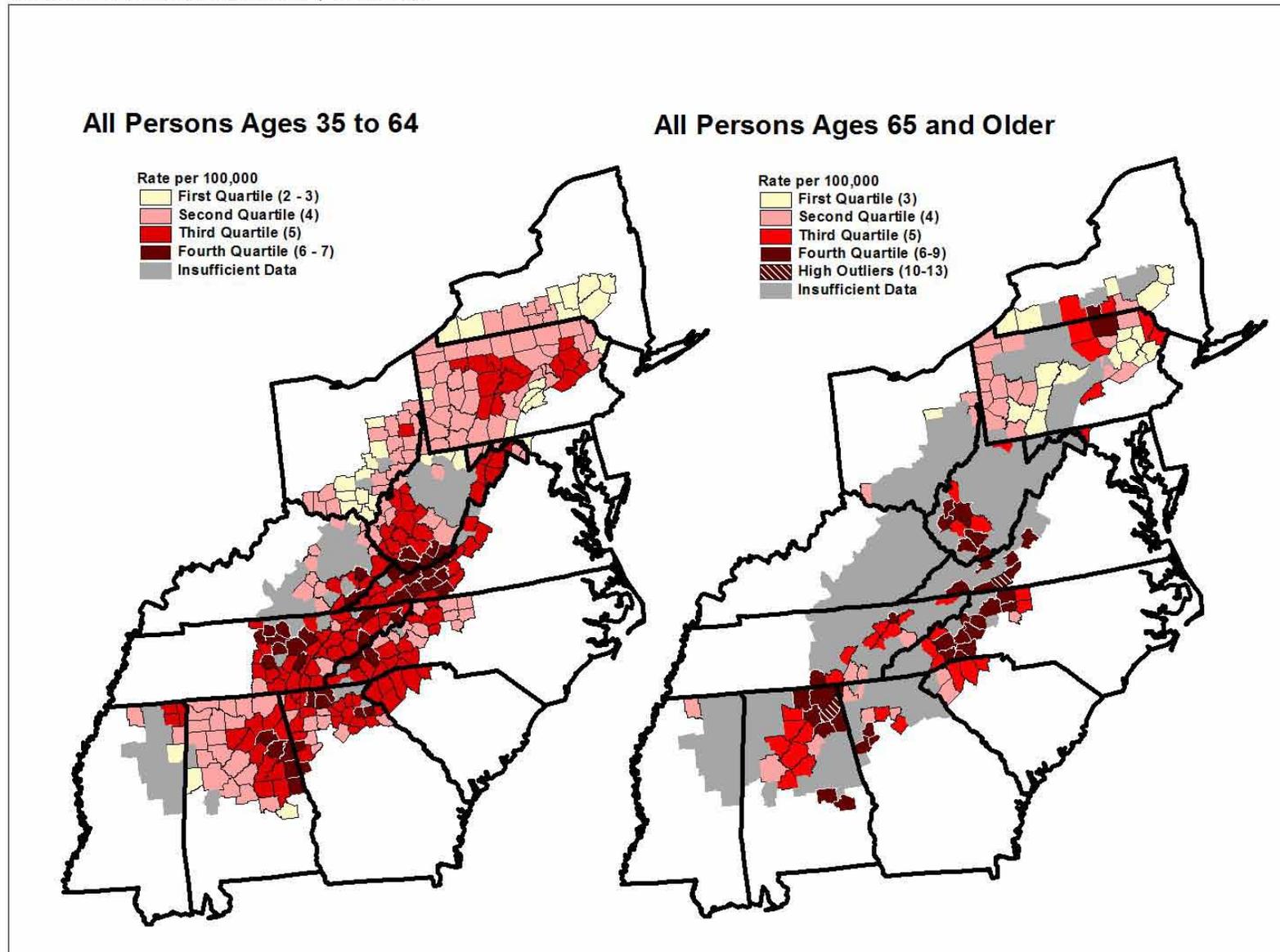
County level maps of suicide death rates are presented on pages 116-118. The death rates have been spatially ‘smoothed’ to reduce the likelihood of generating spurious rates for counties with small populations and numbers of deaths (see Appendix B). The distribution for each demographic and age subgroup has been divided into quartiles. In addition, we have identified both low outliers and high outliers. Outliers are counties that had statistically unusually low or high rates relative to the majority of counties. Low outliers were identified as counties with death rates lower than the 25th percentile minus 1.5 times the interquartile range (25th-75th percentile) and high outliers were identified as counties with death rates higher than the 75th percentile plus 1.5 times the interquartile range.

County-Level Suicide Rates

County maps depicting suicide death rates are presented on pages 116-118. The relatively small numbers of suicides at the county-level is evident in both the small value of the suicide rates as well as the narrow range of the values in each distribution. However, some distinct geographic variability is evident. The maps presenting suicide rates for all persons in both ages 35 to 64 and 65 and older show generally higher suicide rates occurring in the counties of central to southern Appalachia. Several high rate counties are coincident for ages 35 to 64 and 65 and older. These counties generally appear in Eastern Virginia and along the West Virginia border. Two high outlier (unusually high value) counties are apparent among persons ages 65 and older. These counties occur in Eastern

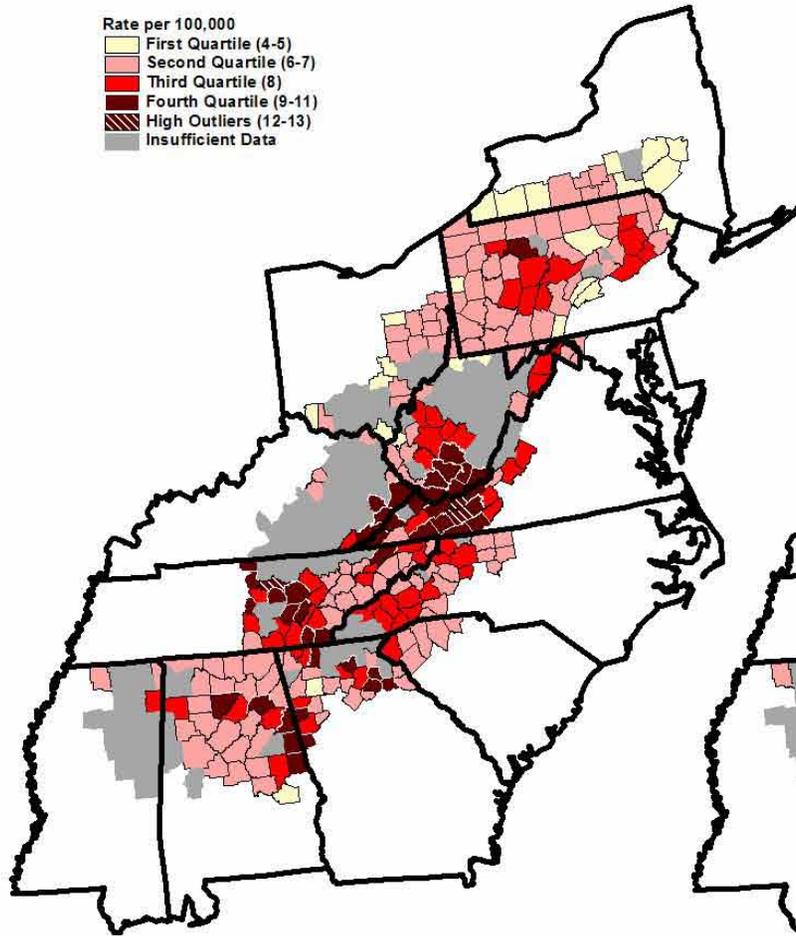
Virginia and Northeastern Alabama and generally seem to mark the ends of a swath of high rate counties that occur in the central to southern portions of the region. The maps for men and women on pages 116 and 117 reveal significant variability in suicide among both gender and age categories, while maintaining the same general geographic pattern. Fewer counties had sufficient number of suicides to calculate rates for elderly men ages 65 and older. However, for those counties with calculated rates, both the value of the rates and the range of those values is much greater than those calculated for men ages 35 to 64. Rates for women are much lower than those of men although no counties had sufficient suicide events to calculate rates for elderly women. The lack of suicides among elderly women suggests that the same age disparity that occurs in suicides among men does not occur among women of comparable ages.

Smoothed Suicide Death Rate, 1990-1997

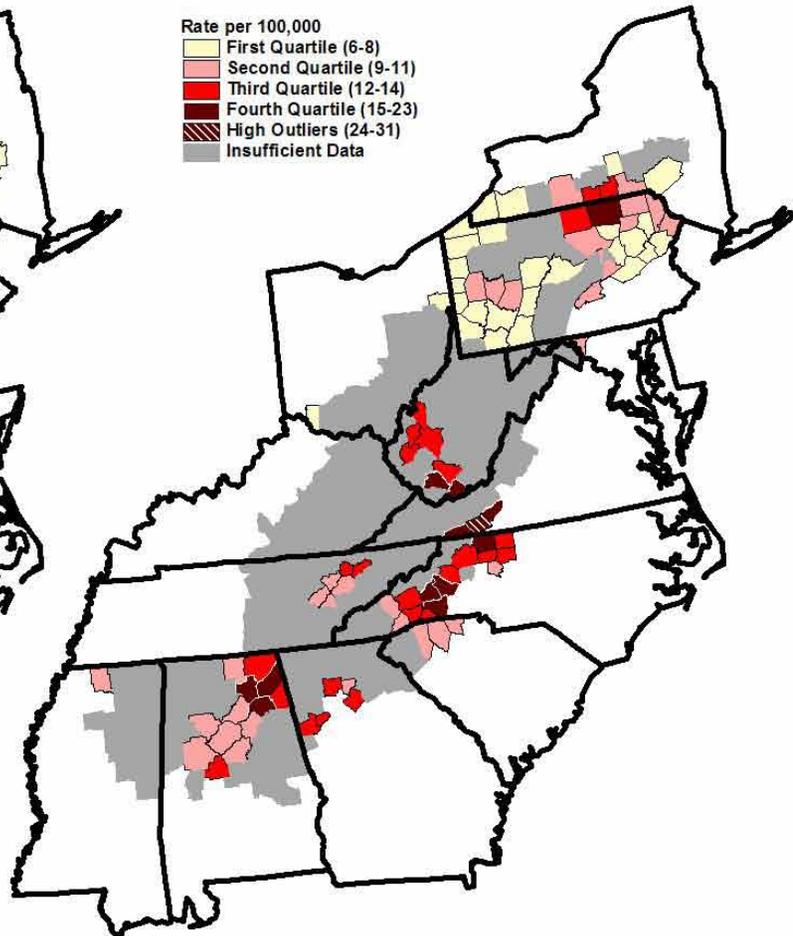
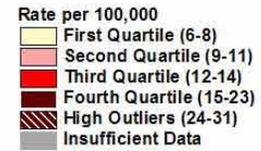


Smoothed Suicide Death Rate, 1990-1997

All Men Ages 35 to 64



All Men Ages 65 and Older



Smoothed Suicide Death Rate, 1990-1997

