

Portrait of a father and his son.



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2 Reader's Guide to Understanding and Interpreting the Maps

We have designed the maps in the *Atlas of Stroke Mortality* to provide the reader with easy access to important information about the geographic distribution of stroke mortality among diverse racial and ethnic groups.

Stroke Mortality Maps

This publication includes maps of stroke death rates for the nation as a whole and for each individual state. The national maps illustrate the broadscale geographic patterns of stroke mortality for each racial and ethnic group and enable the reader to compare any region, state, or county with other parts of the country. The state maps allow the reader to identify areas with high rates and areas with low rates within each state for each racial and ethnic group.

National Maps

The *Atlas of Stroke Mortality* includes 18 national maps of stroke mortality. Section 3 presents maps for the total U.S. population and for each of the five largest racial and ethnic groups—American Indians and Alaska Natives, Asians and Pacific Islanders, blacks, Hispanics, and whites. It also presents separate maps for all women and all men, along with maps for women and men in the five racial and ethnic groups.

The national maps depict stroke death rates for each county. The death rates have been spatially smoothed to enhance the stability of rates in counties with small populations. See Appendix B for details about spatial smoothing.

For each map, the spatially smoothed county death rates were ranked from highest to lowest and then categorized into quintiles. The legend beneath each map indicates the

range of county rates, as well as the actual number of counties in each quintile. The maps also use a graded color scheme to differentiate each quintile, with the darkest color representing counties with the highest rates and the lightest color representing counties with the lowest rates. Counties for which insufficient data existed to calculate a rate are shaded gray.

Comparing Maps for Different Racial and Ethnic Groups

Because the range of stroke death rates varied substantially by racial and ethnic group, the quintile cutpoints are different for each of the national maps. The range of values represented by a given quintile also varies from map to map. Therefore, comparisons of the spatial patterns of stroke mortality across the maps enable the reader to observe the locations of counties with the highest and lowest rates for each racial and ethnic group. To determine whether the mortality rates were absolutely higher or lower for one racial or ethnic group than for another, the reader must study the legends of the relevant maps and compare the cutpoints. Making a mental note of the range of county rates for each group when comparing geographic patterns across maps will be helpful.

State Maps

In Section 4, state maps present the smoothed county stroke death rates for the entire population in that state. These maps are accompanied by tables of state-specific information on the burden of stroke for each racial and ethnic group by gender. State maps of the geographic disparities within each racial and ethnic group are not included in this publication but are available on the CDC interactive Web site (www.cdc.gov/cvh/maps).

To create the state maps of stroke mortality, we used the same spatially smoothed stroke death rates generated for the national maps. A description of the methods used to calculate the rates can be found in Appendix B. Each county rate is based on a spatial moving average of that county and its neighbors. Therefore, for counties that are located along state borders, neighboring counties in adjacent states contributed to the smoothed rate for those counties, even though the neighboring counties are not displayed on the state map.

For each map, the smoothed county death rates within each state were ranked from highest to lowest and then categorized into quintiles. The legend beneath each map indicates the range of county rates, as well as the actual number of counties in each quintile. The maps also use a graded color scheme to differentiate each quintile, with the darkest color representing counties with the highest rates and the lightest color representing counties with the lowest rates. Counties for which insufficient data existed to calculate a rate are shaded gray.

One important difference between the national and state maps is that the quintiles used for the national maps were derived from the range of stroke death rates that occurred among counties across the United States. Consequently, on a national map, all counties in a particular state could fall into the same quintile and be the same color. For the state maps, however, we derived quintiles based only on the smoothed stroke death rates for counties within a particular state. Therefore, each state map presents counties in all quintiles.

State Tables

For each state, tables are included that display summary data by racial and ethnic group for women and men separately as well as for the state population as a whole. Each table provides state data regarding population size and stroke death rate, along with the corresponding national stroke death rate. Under the federal data-reporting scheme, “Hispanic” is considered a designation of ethnicity, not race. Therefore, data for Hispanics are presented twice in the state tables and throughout the *Atlas of Stroke Mortality*—once under the category of “Hispanics,” which includes Hispanics of all racial identities (e.g., Hispanic blacks, Hispanic whites), and again under any of the four racial categories (American Indians and Alaska Natives, Asians and Pacific Islanders, blacks, and whites) according to a person’s racial identity. Consequently, data for the five racial and ethnic groups are not mutually exclusive.

Map Projections

National Maps

For the contiguous 48 states, we chose Albers Conic Equal Area, a map projection that preserves the accurate presentation of relative area and thus enhances comparison of one county with another. Alaska was projected using Miller’s Cylindrical to provide a suitable orientation on the overall layout. Hawaii was presented using geographic coordinates (latitude and longitude) because of its shape and orientation. The District of Columbia and New York City were also presented using geographic coordinates.

State Maps

All states were projected using the State Plane coordinate system. Every state has a separate, official State Plane system of map projections based on the shape and orientation of the state. Each system has a standard projection or series of projections based on the Transverse Mercator or Lambert's Conformal Conic projection. For states with multiple State Plane zones, we used the central zone or the zone that caused minimal distortion to the state as a whole.

Map Scales

National Maps

Scale is the number of distance units on the earth represented by one distance unit on a map. Scale is a dimensionless ratio and can therefore be expressed in any set of distance units (e.g., miles, kilometers, inches, centimeters). Each national map of stroke mortality presented in this publication actually encompasses five separate maps, each displayed at a different scale, so the

entire United States fits on one page. Alaska and Hawaii are displayed as insets, with Alaska presented at a smaller scale than the map of the contiguous 48 states because of its larger land area. Hawaii, the District of Columbia, and New York City are displayed at larger scales because of their relatively small land areas. Because these maps were not designed for displaying or measuring distances, we did not provide exact linear scales.

State Maps

The state maps used different scales to maximize the size of the state image presented. In other words, states with small land areas were mapped at a larger scale than those with larger land areas. When making comparisons among states, the reader should recognize that the same unit length on the pages for two maps may denote different lengths on the ground. Using the national map as a point of reference will be useful. Because these maps were not designed for displaying or measuring distances, we did not provide exact linear scales.

