

Suggested Citation

Casper ML, Barnett E, Williams GI Jr, Halverson JA, Braham VE, Greenlund KJ. *Atlas of Stroke Mortality: Racial, Ethnic, and Geographic Disparities in the United States*. Atlanta, GA: Department of Health and Human Services, Centers for Disease Control and Prevention; January 2003.

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To view interactive maps of stroke mortality or download sections of this atlas, visit www.cdc.gov/cvh/maps.

Acknowledgements

The authors would like to thank the following people for their valuable contributions to the publication of this atlas: Amanda Crowell for her outstanding editorial expertise; George A. Mensah and Janet B. Croft for their continued support and enthusiasm; Kristen Immoor and Mindy C. Barringer for their design advice; Herman L. Surles, Jr. for his contributions to the cover design and layout of the publication; Carma Ayala for her computer programming assistance; Kayanna Scott for updating Appendix C; Palladian Partners, Inc. for their publication support (contract no. 200-98-0415); and the following reviewers for their helpful comments on earlier drafts: Janet B. Croft, H. Wayne Giles, and George A. Mensah, National Center for Chronic Disease Prevention and Health Promotion, CDC, and Robert N. Anderson and Jay H. Kim, National Center for Health Statistics (NCHS), CDC.

In addition, the authors would like to acknowledge the exceptional work performed by the NCHS staff in maintaining the National Vital Statistics System. Without the rigorous and systematic recording and categorizing of the information from all death certificates nationwide performed by NCHS in collaboration with state departments of health, producing this *Atlas of Stroke Mortality* would not be possible.

Atlas of Stroke Mortality

Racial, Ethnic, and Geographic Disparities
in the United States

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As the nation's prevention agency, the Centers for Disease Control and Prevention (CDC) is committed to reducing the burden of stroke—the third leading cause of death and a leading cause of serious, long-term disability in the United States. Deaths from stroke are largely preventable, and with targeted public health efforts, we can alleviate much of the heavy burden of this disease. To meet this challenge, CDC monitors the geographic and temporal trends in stroke rates among racial and ethnic groups, strengthens the delivery of primary and secondary prevention health services to all such groups, and develops policy recommendations that support stroke-free environments for all residents of the United States.

The *Atlas of Stroke Mortality: Racial, Ethnic, and Geographic Disparities in the United States* provides health professionals and concerned citizens at local, state, and national levels with information essential to identifying populations at greatest risk for stroke and in greatest need of prevention efforts. This publication provides, for the first time, county-level maps of stroke for the five largest racial and ethnic groups in the United States—American Indians and Alaska Natives, Asians and Pacific Islanders, blacks, Hispanics, and whites. These maps provide crucial information for tailoring prevention efforts to communities most in need.

This publication is the third in a series of CDC atlases related to cardiovascular disease that have been published through a collaboration between CDC and West Virginia University. The first was *Women and Heart Disease: An Atlas of Racial and Ethnic Disparities in Mortality*, and the second was *Men and Heart Disease: An Atlas of Racial and Ethnic Disparities in Mortality*. Together, these publications have informed policy makers and researchers about the serious disparities in heart disease mortality.

Now, I am pleased to share with you the *Atlas of Stroke Mortality: Racial, Ethnic, and Geographic Disparities in the United States*. I encourage you to use these data to improve the delivery of preventive health services and to create stroke-free environments for all people.

Julie Louise Gerberding, MD, MPH
Director, Centers for Disease Control and Prevention

Awareness of the health needs of minority populations in the United States is growing, as governmental and nongovernmental health agencies continue to identify the gaps in health care and health outcomes among racial and ethnic groups and work to develop strategies to reduce these gaps. Since its inception in 1998, the CDC's Office of the Associate Director for Minority Health has been committed to improving the health status of racial and ethnic minority populations throughout the United States.

A central focus of our activities is implementing the Department of Health and Human Services (HHS) Initiative to Eliminate Racial and Ethnic Disparities in Health. Through this initiative, HHS seeks to eliminate health disparities among minority populations by 2010 in six priority health status areas—one of which is cardiovascular disease (i.e., heart disease and stroke). The cornerstone of CDC's efforts to support this initiative is the Racial and Ethnic Approaches to Community Health (REACH) 2010 program. This two-phase, 5-year demonstration project supports community coalitions in designing, implementing, and evaluating community-driven strategies to eliminate health disparities.

We recognize that achieving HHS's goal depends on a major national commitment to identify and address the underlying causes of racial and ethnic disparities. New insights are needed to understand the determinants of these disparities among stroke rates and to apply our knowledge toward eliminating them. In this regard, the *Atlas of Stroke Mortality: Racial, Ethnic, and Geographic Disparities in the United States* is a timely publication that provides a new perspective on the racial and ethnic patterns of stroke at the community level.

The maps in this publication will enable health researchers to develop new hypotheses regarding the determinants of the geographic patterns of stroke for each racial and ethnic group. These maps will also allow health professionals in local, state, and national health agencies to design new programs and policies tailored to the needs of communities with the highest rates of stroke mortality.

As we continue to identify the health needs of racial and ethnic minority populations, additional opportunities will arise to expand and modify our public health and medical care strategies for preventing and treating stroke among all people.

Walter W. Williams, MD, MPH
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A Message from the Director of CDC's National Center for Chronic Disease Prevention and Health Promotion

The National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) is committed to continuing the strong tradition of using state-of-the-art mapping technologies to highlight geographic, racial, and ethnic disparities in chronic diseases. I am excited about the *Atlas of Stroke Mortality: Racial, Ethnic, and Geographic Disparities in the United States*, which uses Geographic Information Systems (GIS) to highlight the existing disparities in stroke mortality—the third leading cause of death and a leading cause of serious, long-term disability in the United States.

With public health professionals working in an environment that is increasingly information-intensive, GIS can play a critical role in determining where prevention activities are most needed. This information can lead to action to improve the quality of primary and secondary health care and the accessibility of needed services. This report highlights the large geographic disparities in stroke deaths, as well as the differences reported by race and gender. We know a great deal about how to prevent stroke and how to effectively treat it when the signs and symptoms are recognized early. Disparities as large as those reported here tell us that what is known to science is not being applied to people at risk. Although the maps in this publication might look attractive, they paint a picture of where our nation stands in terms of disparities in stroke mortality, and the picture is not pretty.

My hope is that the availability of stroke mortality data at the local level, presented in the *Atlas of Stroke Mortality*, will galvanize the formation of new partnerships and enhance existing ones among state and local health agencies and community organizations working together to create stroke-free working and living environments.

James S. Marks, MD, MPH
Director, National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention

I am pleased to present the *Atlas of Stroke Mortality: Racial, Ethnic, and Geographic Disparities in the United States*. Each year in the United States, an estimated 600,000 people suffer a stroke, and more than 150,000 people die of a stroke. Approximately 4.5 million stroke survivors are believed to be alive today. In addition to this heavy burden of death and disability, there are marked racial and ethnic disparities related to stroke. Although much is known about the excess burden of stroke mortality among African Americans, relatively less has been published about the burden among other racial and ethnic minorities. This atlas identifies the disparities among other racial and ethnic groups and places special emphasis on the geographic disparities in stroke mortality that exist for all groups. An important finding is the substantial differences in the patterns of geographic disparity by racial and ethnic group. These differences underscore the need for stroke prevention programs and policies to be tailored to the needs of specific communities in specific locales.

This landmark document supports elimination of health disparities, one of the two overarching goals of *Healthy People 2010*, and addresses the important need to reduce the risk for stroke among all racial and ethnic groups. The maps in this *Atlas of Stroke Mortality* present county-by-county stroke mortality rates for the entire United States and identify the places where members of each of the five largest racial and ethnic groups experience the highest rates. With this information, public health professionals at local, state, and national levels will be able to tailor prevention resources to the populations in greatest need of additional services.

Although stroke mortality has been declining for several decades, the rate of decline has varied by racial and ethnic group, and recent data indicate that this decline is leveling off. This alarming trend underscores the importance of enhancing our efforts to support innovative, community-based strategies for reducing the risk for stroke. For all racial and ethnic groups, we can expect to achieve the greatest cardiovascular health benefits through prevention. The *Atlas of Stroke Mortality* indicates where prevention programs and policies are most needed and can have the greatest benefit.

This publication is an extremely valuable resource in our endeavors to further prevent stroke across the nation. We hope that you will also find it a useful tool as you design programs and policies to prevent stroke among people in your communities.

George A. Mensah, MD, FACP, FACC, FESC
Branch Chief, National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention

A Message from the Director of CDC iii

A Message from CDC’s Associate Director for Minority Health v

A Message from the Director of CDC’s National Center for Chronic Disease Prevention and Health Promotion vii

Foreword ix

List of Figures xii

Introduction 1

Section 1. Racial and Ethnic Disparities in Stroke 7

Section 2. Reader’s Guide to Understanding and Interpreting the Maps 17

Section 3. National Maps of Stroke Mortality by Race, Ethnicity, and Gender 23

Section 4. State Maps and Tables of Stroke Mortality 61

Appendix A. State Rankings of Stroke Mortality 125

Appendix B. Methodological and Technical Notes 133

Appendix C. Resources 141

About the Authors 155

List of Figures

Figure 1.1 Categories of Stroke Deaths Among People Ages ≥ 35 Years, by Racial and Ethnic Group	10
Figure 1.2 Age Distribution of Stroke Deaths Among People Ages ≥ 35 Years, by Racial and Ethnic Group	11
Figure 1.3 Trends in Stroke Death Rates Among People Ages ≥ 35 Years, by Racial and Ethnic Group	12
Figure 1.4 Frequency Distribution of Smoothed County Stroke Death Rates Among People Ages ≥ 35 Years, by Racial and Ethnic Group	13
Figure 3.1 Frequency Distribution of Smoothed County Stroke Death Rates Among All People Ages ≥ 35 Years	25
Figure 3.2 Frequency Distribution of Smoothed County Stroke Death Rates Among All Women Ages ≥ 35 Years	26
Figure 3.3 Frequency Distribution of Smoothed County Stroke Death Rates Among All Men Ages ≥ 35 Years	26
Figure 3.4 Frequency Distribution of Smoothed County Stroke Death Rates Among American Indians and Alaska Natives Ages ≥ 35 Years	31
Figure 3.5 Frequency Distribution of Smoothed County Stroke Death Rates Among American Indian and Alaska Native Women Ages ≥ 35 Years	32
Figure 3.6 Frequency Distribution of Smoothed County Stroke Death Rates Among American Indian and Alaska Native Men Ages ≥ 35 Years	32
Figure 3.7 Frequency Distribution of Smoothed County Stroke Death Rates Among Asians and Pacific Islanders Ages ≥ 35 Years	37

Figure 3.8	Frequency Distribution of Smoothed County Stroke Death Rates Among Asian and Pacific Islander Women Ages ≥ 35 Years	38
Figure 3.9	Frequency Distribution of Smoothed County Stroke Death Rates Among Asian and Pacific Islander Men Ages ≥ 35 Years	38
Figure 3.10	Frequency Distribution of Smoothed County Stroke Death Rates Among Blacks Ages ≥ 35 years	43
Figure 3.11	Frequency Distribution of Smoothed County Stroke Death Rates Among Black Women Ages ≥ 35 Years	44
Figure 3.12	Frequency Distribution of Smoothed County Stroke Death Rates Among Black Men Ages ≥ 35 Years	44
Figure 3.13	Frequency Distribution of Smoothed County Stroke Death Rates Among Hispanics Ages ≥ 35 Years	49
Figure 3.14	Frequency Distribution of Smoothed County Stroke Death Rates Among Hispanic Women Ages ≥ 35 Years	50
Figure 3.15	Frequency Distribution of Smoothed County Stroke Death Rates Among Hispanic Men Ages ≥ 35 Years	50
Figure 3.16	Frequency Distribution of Smoothed County Stroke Death Rates Among Whites Ages ≥ 35 Years	55
Figure 3.17	Frequency Distribution of Smoothed County Stroke Death Rates Among White Women Ages ≥ 35 Years	56
Figure 3.18	Frequency Distribution of Smoothed County Stroke Death Rates Among White Men Ages ≥ 35 Years	56