

Women and Heart Disease

**An Atlas of Racial and Ethnic
Disparities in Mortality
Second Edition**

Michele L. Casper

Elizabeth Barnett

Joel A. Halverson

Gregory A. Elmes

Valerie E. Braham

Zainal A. Majeed

Amy S. Bloom

Shaun Stanley



A Message from the Director of the Centers for Disease Control and Prevention

As the Nation's Prevention Agency, the Centers for Disease Control and Prevention (CDC) is committed to reducing the burden of heart disease – the leading cause of death and a major contributor to disability in the United States. Deaths from heart disease 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 works to closely monitor geographic and temporal trends in heart disease among racial and ethnic groups, strengthen the delivery of primary and secondary preventive health services to all such groups, and implement policy changes that support heart-healthy environments for all residents of the United States. CDC's Associate Director for Women's Health and Associate Director for Minority Health serve as the Agency's focal points for coordinating activities and monitoring programs to meet these objectives.

Among women, mortality rates for heart disease are higher than the rates for all forms of cancer combined. Approximately 373,286 women die of heart disease each year, and more than 6.5 million women alive today have suffered a heart attack or angina pectoris (chest pain). In addition, the burden of heart disease among women is not equally distributed among racial and ethnic groups within the United States. *Women and Heart Disease* comprehensively describes the unequal distribution of heart disease among these groups.

Women and Heart Disease: An Atlas of Racial and Ethnic Disparities in Mortality provides health professionals and concerned citizens at the local, State, and national levels with information essential to identifying populations of women at greatest risk of heart disease and in greatest need of prevention efforts. For the first time, county-level maps of heart disease are presented for women of the five largest racial and ethnic groups in the United States – American Indians and Alaska Natives, Asians and Pacific Islanders, Blacks, Hispanics, and Whites. In addition, *Women and Heart Disease* includes maps that depict geographic patterns of local economic and medical care resources, data on the social isolation of women, and population distributions for each racial and ethnic group. These maps provide crucial information for tailoring prevention efforts to the communities in need.

This publication is the first in a series of atlases related to cardiovascular disease that are in progress through a collaboration between CDC and West Virginia University. The next publication will be *Men and Heart Disease: An Atlas of Racial and Ethnic Disparities in Mortality*.

I am pleased to share this important publication with you. I encourage you to use these data to improve the delivery of preventive health services and to create heart-healthy environments for all women.



Jeffrey P. Koplan, M.D., M.P.H.
Director, Centers for Disease Control and Prevention

A Message from the Associate Director for Women's Health and the Associate Director for Minority Health of the Centers for Disease Control and Prevention

There is an increasing awareness of the health needs of women and minority populations in the United States. Historically, both groups have had limited access to health care resources and have been omitted from many research studies. Government and non-government health agencies are beginning to identify the gaps in health care and health outcomes that exist among these groups and are beginning to develop strategies to reduce these gaps. Since the inception of the Centers for Disease Control and Prevention's (CDC) Office of Minority Health in 1988 and Office of Women's Health in 1994, our Offices have been committed to improving the health status of women and of racial and ethnic minority populations throughout the United States.

CDC's Office of Women's Health is preparing to address the projected demographic trends of the next century and to meet the current and anticipated needs of millions of underserved women in America. By the year 2030, one of every four women will be over the age of 65, and by the year 2050 women of color will represent one-half of the adult female population. These trends toward the aging and diversification of American women highlight the need to establish health promotion policies and programs that are culturally relevant and address issues surrounding chronic diseases that an aging population will experience – particularly heart disease, the leading cause of death among women in the United States. The data presented in *Women and Heart Disease: An Atlas of Racial and Ethnic Disparities in Mortality*, provides for the first time, vital information needed to locate communities of women at greatest risk of heart disease for each racial and ethnic group. The county-level maps of heart disease and social environmental conditions provide the basis for taking actions now that could lead to substantially lower rates of heart disease among all U.S. women in the future.

A central focus of activities of CDC's Office of Minority Health is implementation of the President's *Initiative to Eliminate Racial and Ethnic Disparities in Health*. Cardiovascular disease is one of the six health status areas targeted for eliminating such disparities by the year 2010. We recognize that achieving this goal requires a major national commitment to identify and address the underlying causes of the racial and ethnic disparities. New insights are needed to understand the determinants of the racial and ethnic disparities in cardiovascular disease and to apply our knowledge toward eliminating these gaps. In this regard, you will find *Women and Heart Disease: An Atlas of Racial and Ethnic Disparities in Mortality* to be a timely publication that provides a new perspective on the racial and ethnic patterns of cardiovascular disease at the community level. The maps will enable health researchers to develop new hypotheses regarding the determinants of the geographic patterns of heart disease for each racial and ethnic group, and will also enable health professionals in local, State, and national health agencies to design new programs and policies tailored to the needs of the communities with the highest rates of heart disease mortality.

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



Karen K. Steinberg, Ph.D.
Acting Associate Director for Women's Health



Walter W. Williams, M.D., M.P.H.
Associate Director for Minority Health

I am pleased to present *Women and Heart Disease: An Atlas of Racial and Ethnic Disparities in Mortality*. For too long, heart disease has been considered as primarily a “man’s disease”; however, heart disease is also the number one killer of women. In terms of total deaths, heart disease claims the lives of more women than men. The gap between women and men is growing as the number of excess deaths from heart disease among women continues to increase over time.

This landmark document supports the President’s *Initiative to Eliminate Racial and Ethnic Disparities in Health* and addresses the important need to reduce the risk of heart disease among women of all racial and ethnic groups. The maps in *Women and Heart Disease* depict heart disease mortality rates among women, county-by-county, for the entire United States, and identify the places where women of each of the five major racial and ethnic groups experience the highest rates of mortality from heart disease. With this information, public health professionals at the local, state, and national levels will be able to target prevention resources to populations of women in greatest need of additional services.

Although mortality from heart disease has been declining for several decades, the rate of decline has varied by racial and ethnic group, resulting at times in a widening of the gap between such groups for both women and men. Moreover, recent trends indicate a slowing down in the rate of decline of heart disease mortality and underscore the importance of enhancing our efforts to support innovative community-based strategies for reducing the risk of heart disease. For women of all racial and ethnic groups (as well as for men) it is through prevention that we can expect to achieve the greatest cardiovascular health benefits. *Women and Heart Disease* indicates where those programs are most needed and can have the greatest benefit.

It is my hope that *Women and Heart Disease: An Atlas of Racial and Ethnic Disparities in Mortality* will be used to guide the distribution of funds and resources to those communities of women experiencing excess mortality from heart disease and will promote the development of culturally sensitive prevention strategies.



James S. Marks M.D., M.P.H.
Director, National Center for Chronic Disease Prevention and
Health Promotion, Centers for Disease Control and Prevention

Table of Contents

A Message from the Director of the Centers for Disease Control and Prevention	iii
A Message from the Associate Director for Women's Health and the Associate Director for Minority Health of the Centers for Disease Control and Prevention	v
Foreword by James S. Marks, M.D., M.P.H.	vii
List of Figures	xiii
Introduction	15
Section 1. Racial and Ethnic Disparities in Heart Disease among Women	19
The Social Construction of Race	20
Misreporting of Race and Ethnicity on Death Certificates	21
Specific Categories of Heart Disease Deaths Among Women	22
Age Distribution of Heart Disease Deaths Among Women	22
Heart Disease Death Rate Trends for 1991-1995	23
County Variation in Heart Disease Death Rates	23
Section 2. Reader's Guide to Understanding and Interpreting the Maps	27
Calculation of Heart Disease Death Rates	28
National Heart Disease Mortality Map Layouts	29
National Map Projections	29
Scale of the National Maps	30
Guide to National Maps of Local Social Environment	30
National Population Distribution Map Layouts	31
Guide to State Maps of Heart Disease Mortality	31
State Map Layouts	32

Section 2 (continued)

State Map Projections	32
Scale of the State Maps	33

Section 3. Local Social Environment and Women's Risk for Heart Disease Mortality 35

Population Distributions	39
Local Economic Resources	51
Social Isolation of Elderly Women	55
Medical Care Resources	61

Section 4. National Maps of Heart Disease Mortality among Women 69**Section 5. State Maps of Heart Disease Mortality among Women 85**

Alabama	88
Alaska	90
Arizona	92
Arkansas	94
California	96
Colorado	98
Connecticut	100
Delaware	102
District of Columbia	104
Florida	106
Georgia	108
Hawaii	110
Idaho	112

Section 5 (continued)

Illinois	114
Indiana	116
Iowa	118
Kansas	120
Kentucky	122
Louisiana	124
Maine	126
Maryland	128
Massachusetts	130
Michigan	132
Minnesota	134
Mississippi	136
Missouri	138
Montana	140
Nebraska	142
Nevada	144
New Hampshire	146
New Jersey	148
New Mexico	150
New York	152
New York City	154
North Carolina	156
North Dakota	158

Section 5 (continued)

Ohio	160
Oklahoma	162
Oregon	164
Pennsylvania	166
Rhode Island	168
South Carolina	170
South Dakota	172
Tennessee	174
Texas	176
Utah	178
Vermont	180
Virginia	182
Washington	184
West Virginia	186
Wisconsin	188
Wyoming	190
Appendix A. State Rankings of Heart Disease Mortality Among Women	193
Appendix B. Methodological and Technical Notes	207
Appendix C. Resources	219
Index	233
About the Authors	239

Figure 1.1	
Specific categories of heart disease deaths among women 35 years of age and older, by race and ethnicity, 1991-1995	20
Figure 1.2	
Age distribution of heart disease deaths among women 35 years of age and older, by race and ethnicity, 1991-1995	21
Figure 1.3	
Trends in heart disease mortality among women 35 years of age and older, by race and ethnicity, 1991-1995	22
Figure 1.4	
Frequency distribution of smoothed county heart disease death rates for women 35 years of age and older, by race and ethnicity, 1991-1995	23
Figure 2.1	
Example of layout for national heart disease mortality maps	30
Figure 2.2	
Example of layout for national population distribution maps	31
Figure 2.3	
Example of layout for state heart disease mortality maps	33
Figure 3.1	
Asian Populations in the United States, 1990	42
Figure 3.2	
Hispanic Populations in the United States, 1990	46
Figure 4.1	
Frequency Distribution of Smoothed Heart Disease Death Rates for Counties, All Women, 1991-1995	72
Figure 4.2	
Frequency Distribution of Smoothed Heart Disease Death Rates for Counties, American Indian and Alaska Native Women, 1991-1995	74
Figure 4.3	
Frequency Distribution of Smoothed Heart Disease Death Rates for Counties, Asian and Pacific Islander Women, 1991-1995	76
Figure 4.4	
Frequency Distribution of Smoothed Heart Disease Death Rates for Counties, Black Women, 1991-1995	78
Figure 4.5	
Frequency Distribution of Smoothed Heart Disease Death Rates for Counties, Hispanic Women, 1991-1995	80
Figure 4.6	
Frequency Distribution of Smoothed Heart Disease Death Rates for Counties, White Women, 1991-1995	82

