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Articles

Ischemic Heart Disease and Stroke Mortality in African-American, Hispanic, and Non-Hispanic White Men and Women, 1985 to 1991

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We compare recent trends in ischemic heart disease (IHD) and stroke mortality in California among the 6 major sex-racial or -ethnic groups. Rates of age-specific and -adjusted mortality were calculated for persons aged 35 and older during the years 1985 to 1991. Log-linear regression modeling was performed to estimate the average annual percentage change in mortality. During 1985 through 1991, the mortality for IHD and stroke was generally highest for African Americans, intermediate for non-Hispanic whites, and lowest for Hispanics. Age-adjusted mortality for IHD declined significantly in all sex-racial or -ethnic groups except African-American women, and stroke rates declined significantly in all groups except African-American and Hispanic men. African Americans had excess IHD mortality relative to non-Hispanic whites until late in life, after which mortality of non-Hispanic whites was higher. Similarly, African Americans and Hispanics had excess stroke mortality relative to non-Hispanic whites early in life, whereas stroke mortality in non-Hispanic whites was higher at older ages. The lower IHD and stroke mortality among Hispanics was paradoxical, given the generally adverse risk profile and socioeconomic status observed among Hispanics. An alarmingly high prevalence of self-reported cardiovascular disease risk factors in 1994 to 1996, particularly hypertension, leisure-time sedentary lifestyle, and obesity, is a serious public health concern, with implications for future trends in cardiovascular disease mortality. Of particular concern was the growing disparities in stroke and IHD mortality among younger-aged African Americans relative to Hispanics and non-Hispanic whites.

(Karter A, Gazzaniga JM, Cohen RD, Casper ML, Davis BD, Kaplan GA. Ischemic heart disease and stroke mortality in African-American, Hispanic, and non-Hispanic white men and women, 1985 to 1991. *West J Med* 1998; 169:xxx-xxx)

In the United States, mortality attributable to the two major forms of cardiovascular disease (CVD), ischemic heart disease (IHD) and stroke, has varied considerably among the three major racial or ethnic groups, African Americans, non-Hispanic whites, and Hispanics.¹ Overall, CVD mortality has dropped considerably since 1970, although the rate of the decline appears to be slowing.²⁻⁵ Trends in minority populations have not been as favorable, resulting in a widening racial or ethnic disparity.⁴⁻⁶ Consequently, the identification and continued monitoring of high-risk subgroups are important components of CVD-prevention efforts.

Although trends in CVD mortality in African Americans and non-Hispanic whites have been well docu-

mented, recent published information for this country's fastest growing minority, Hispanics, is relatively scarce, especially with regard to stroke.^{7,8} Documenting trends in Hispanics is of particular interest because of their paradoxically low CVD mortality despite unfavorable cardiovascular risk profiles.^{9,10} Historically, less than half of the states have collected Hispanic race or ethnicity on death records, and in most cases, the practice began within the past decade. The distribution of CVD risk factors varies among the three major Hispanic subgroups—Mexican Americans, Cuban Americans, and Puerto Ricans¹¹—and, in turn, the distributions of these subgroups vary widely from state to state, making the pooling of data problematic. California has reliably

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pgs 139-45.

ABBREVIATIONS USED IN TEXT

BRFSS = Behavioral Risk Factor Surveillance Survey
 CVD = cardiovascular disease
 ICD-9 = *International Classification of Diseases, 9th Revision*
 IHD = ischemic heart disease
 MI = myocardial infarction

recorded Hispanic origin on death certificates since 1985. The Hispanic population in California is overwhelmingly Mexican American and represents about 35% of Hispanics in the US population. In addition, California has a large African-American population, providing adequate statistical power for racial-ethnic comparisons. In this article, we examine the trends in IHD and stroke mortality among these three major racial-ethnic groups in California during the years 1985 to 1991 and recent results from the California Behavioral Risk Factor Surveillance Survey (BRFSS).

Methods

Mortality data for California residents were obtained from the death certificate computer files of the California Department of Health Services, Health Data and Statistics Branch, Health Demographics Section for 1985 to 1991. The computer files were searched for underlying-cause-of-death codes 410 to 414 (IHD) and 430 to 438 (stroke) according to the *International Classification of Diseases, 9th Revision (ICD-9)*.¹² Race- or ethnicity-specific population estimates for California residents were obtained from the California Department of Finance.

Race- or ethnicity-specific, age-adjusted mortality rates for ages 35 and older were calculated using the 1980 US census as the standard for direct adjustment.¹³ Numerators of the age-specific rates were based on IHD and stroke deaths in ten-year age intervals to increase the stability of each age-sex-racial or -ethnic stratum. The relative change (average annual percentage change in the rate) in IHD mortality was estimated using a log-linear model that assumes a constant proportional change.¹⁴ Statistical interactions between the relative change and race or ethnicity were assessed as a test of statistical differences in the trends. Age-specific rate ratios were calculated using non-Hispanic-white age-specific rates as the referent group. Results from the California BRFSS for the years 1994 to 1996 were used to estimate the prevalence of selected cardiovascular risk factors, after age-adjusting to the 1990 California population. The BRFSS sample sizes for men and women, respectively, were as follows: African American, 274 and 406; Hispanic, 1,217 and 1,559; and non-Hispanic white, 3,413 and 4,296. In this article, the term "race or ethnicity" is meant to reflect the combination of defining human physical-biologic variations and adaptations, as well as the social context, including historical conditions, economic and social factors, and political and cultural forces.¹⁵

Results

Ischemic Heart Disease

For men, between 1985 and 1991, the age-adjusted rates of IHD mortality in California were consistently lowest for Hispanics, whereas those in African-American and non-Hispanic-white men were similar. For women, the age-adjusted rates of IHD mortality were consistently lowest for Hispanics and highest for African Americans. The racial or ethnic differences were substantial, with about a twofold higher age-adjusted IHD mortality in African-American and non-Hispanic-white men than in Hispanic men and in African-American women than in Hispanic women.

During this period, the age-adjusted IHD mortality declined more for men than for women in each of the three racial or ethnic groups (Table 1). For men, non-Hispanic whites had the largest, Hispanics intermediate, and African Americans the smallest decline in rates. For women, Hispanics again had the largest and non-Hispanic whites had slightly lesser declines, whereas African Americans showed no significant decline (95% confidence interval includes zero). Among African-American women, there was a slight increase in IHD mortality during the early years; however, by 1991 the rate had dropped back to the level observed in 1985. Racial-ethnic differences in these trends were not statistically significant for men ($P = .15$), but approached significance in women ($P = .08$).

During 1985 to 1991, the age-specific rates (Table 2) were consistently lowest for Hispanics among both men and women. Among men, the age-specific IHD mortality was lower for non-Hispanic whites than for African Americans until midlife, after which a "crossover" occurred, and African Americans had lower rates during the older ages. The age of mortality crossover for African-American and non-Hispanic whites changed over time as well, ranging from the 60s during 1985 to the 80s in 1991. A similar pattern was observed between non-Hispanic-white and African-American women, although the age at mortality crossover was later. In general, the age-specific IHD rates for those younger than 65 years have dropped between 1985 and 1991 (Table 2). The age-specific rate ratios suggest, however, that, except for men aged 35 to 44 years, the gap between the rates for African-American and non-Hispanic-white men and women has widened whereas that between Hispanic and non-Hispanic-white men and women has narrowed.

Stroke

For both men and women, the mortality for stroke was consistently highest for African Americans, lowest for Hispanics, and intermediate for non-Hispanic whites (Table 1). Substantial racial-ethnic variation occurred, with about a twofold higher age-adjusted rate in African Americans relative to Hispanic men and women during the entire period.

During 1985 through 1991, the age-adjusted stroke mortality declined slightly more for women than for men

TABLE 1. Average Annual Percentage Change in Age-adjusted Mortality of Ischemic Heart Disease and Stroke by Race or Ethnicity and Sex, Ages 25 Years, California, 1985 to 1991

	Men		Avg Annual % Change (95% CI)	Women		Avg Annual % Change (95% CI)
	Mortality Rate/100,000 1985	Mortality Rate/100,000 1991		Mortality Rate/100,000 1985	Mortality Rate/100,000 1991	
Ischemic heart disease						
African American	618	580	-2.1 (-2.3 to -1.3)	416	405	-0.3 (-1.3 to 1.3)
Hispanic	347	290	-2.8 (-4.0 to -1.5)	232	192	-2.4 (-4.0 to -0.8)
Non-Hispanic white	648	517	-3.8 (-4.4 to -3.0)	351	301	-2.3 (-3.2 to -1.5)
Stroke						
African American	173	197	1.4 (-0.7 to 3.5)	193	176	-1.2 (-2.6 to 0.2)
Hispanic	98	96	-2.8 (-4.0 to -0.6)	89	76	-2.4 (-4.1 to -0.7)
Non-Hispanic white	140	124	-1.5 (-2.3 to -0.7)	135	113	-2.2 (-3.7 to -0.9)

in each of the three racial-ethnic groups (Table 1). The rates showed no significant changes in African-American and Hispanic men or African-American women, but declines occurred in the remaining sex-racial or -ethnic groups. Racial or ethnic differences in these trends were not significant in women ($P = .58$), but approached significance in men ($P = .06$).

During 1985 to 1991, non-Hispanic whites had the lowest stroke mortality in the youngest age groups; however, their rates crossed over the Hispanic rates in the 65- to 74-year-old group and the African-American rates in the oldest age group (≥ 85 years). The 1985 to 1991 trends in age-specific stroke rates for those younger than 65 years have been mixed and have not shown as much improvement as in IHD (Table 2). As was the case with IHD, the age-specific rate ratios suggest that the gap between stroke rates for African-American and non-Hispanic-white men and women has widened. The gap between Hispanic and non-Hispanic-white men and women was also widening, however, while Hispanic age-specific stroke rates have exceeded those of non-Hispanic whites at the younger ages.

Cardiovascular Risk Factors

Table 3 details the age-adjusted prevalence estimates by race or ethnicity and sex for five major, self-reported, CVD behavioral risk factors: cigarette smoking, obesity, hypertension, diabetes mellitus, and leisure-time sedentary lifestyle. In general, the prevalence of current smoking was similar among sex-racial or -ethnic groups, except for Hispanic women, who reported a statistically lower prevalence. African-American men and women had the highest prevalence of hypertension. For African-American men, it was statistically higher than among Hispanic or non-Hispanic-white men, and for African-American women, it was statistically higher than among non-Hispanic-white women. The prevalences of obesity, diabetes mellitus, and leisure-time sedentary lifestyle

were statistically lower among non-Hispanic whites than among the two minority populations. At nearly 70%, the prevalence of a sedentary lifestyle was statistically higher among Hispanic men than among African-American men or women.

Discussion

During 1985 to 1991, the age-adjusted mortality for IHD declined statistically in all sex-racial or -ethnic groups except African-American women. Stroke rates declined statistically in non-Hispanic-white men and women and Hispanic women whereas African-American men had an increase in rates, albeit nonsignificant. For each racial-ethnic group and across the time period, men had higher age-adjusted IHD mortality than women, but stroke mortality was similar among men and women. The racial-ethnic patterns for both CVDs were consistent with the general patterns observed at the national level; Hispanics had the lowest age-adjusted rates, non-Hispanic whites had intermediate rates, and African-Americans had the highest rates.¹ The relatively greater effects of CVD for African-American men and women were clearly evident; on average, African Americans were dying at the fastest rate and at the youngest age relative to Hispanics and non-Hispanic whites and had the least favorable trends between 1985 and 1991.

Although observing patterns in an age-adjusted rate over time is the simplest way to evaluate trends in CVD mortality, such a population-weighted average masks the important age-specific racial-ethnic differences in the groups that we observed. In addition, identifying excess mortality, in particular race- or ethnicity-age strata, will facilitate appropriate tailoring of CVD-prevention efforts. Non-Hispanic-white IHD rates increased more rapidly with age than those for African Americans or Hispanics. Subsequently, African-American men and women had an excess IHD mortality relative to non-His-

TABLE 2. Age-Specific Mortality (10⁵/10⁵) and Rate Ratios for Ischemic Heart Disease and Stroke Mortality by Race or Ethnicity

Ischemic Mortality	25 to 34	35 to 44	55 to 64	65 to 74	75 to 84	≥85
Ischemic heart disease						
Men 1985						
African American	57 (0.73)	171 (1.20)	510 (1.14)	999 (0.93)	2,327 (0.88)	3,836 (0.82)
Hispanic	17 (0.51)	61 (0.59)	203 (0.46)	547 (0.50)	1,563 (0.59)	3,014 (0.64)
Non-Hispanic white	33 (1.00)	160 (1.00)	445 (1.00)	1,075 (1.00)	2,651 (1.00)	4,646 (1.00)
Men 1991						
African American	36 (1.62)	133 (1.40)	383 (1.28)	885 (1.14)	2,135 (1.05)	4,811 (0.89)
Hispanic	9 (0.42)	50 (0.53)	167 (0.56)	500 (0.54)	1,059 (0.52)	2,952 (0.54)
Non-Hispanic white	22 (1.00)	75 (1.00)	302 (1.00)	780 (1.00)	2,033 (1.00)	5,423 (1.00)
Women 1985						
African American	19 (2.37)	69 (2.04)	258 (1.90)	746 (1.53)	1,678 (1.06)	3,459 (0.77)
Hispanic	2 (0.23)	16 (0.46)	100 (0.74)	336 (0.72)	966 (0.61)	3,048 (0.68)
Non-Hispanic white	8 (1.00)	34 (1.00)	135 (1.00)	468 (1.00)	1,541 (1.00)	4,474 (1.00)
Women 1991						
African American	17 (2.23)	57 (2.23)	202 (1.89)	596 (1.72)	1,612 (1.02)	4,785 (1.01)
Hispanic	2 (0.45)	21 (0.85)	83 (0.73)	264 (0.76)	790 (0.64)	2,511 (0.54)
Non-Hispanic white	4 (1.00)	25 (1.00)	107 (1.00)	346 (1.00)	1,246 (1.00)	4,731 (1.00)
Stroke						
Men 1985						
African American	37 (2.02)	53 (3.16)	115 (2.08)	273 (1.49)	608 (1.18)	1,077 (0.72)
Hispanic	8 (0.36)	19 (1.19)	48 (0.87)	130 (0.81)	313 (0.59)	496 (0.67)
Non-Hispanic white	6 (1.00)	16 (1.00)	55 (1.00)	165 (1.00)	701 (1.00)	1,488 (1.00)
Men 1991						
African American	33 (2.88)	38 (2.25)	120 (2.70)	326 (2.17)	749 (1.37)	1,513 (0.88)
Hispanic	7 (1.21)	33 (1.72)	54 (1.22)	143 (0.96)	385 (0.70)	940 (0.55)
Non-Hispanic white	6 (1.00)	14 (1.00)	44 (1.00)	141 (1.00)	547 (1.00)	1,722 (1.00)
Women 1985						
African American	30 (3.56)	40 (2.84)	134 (3.03)	361 (1.74)	839 (1.35)	1,685 (0.87)
Hispanic	6 (1.12)	17 (0.73)	33 (0.94)	114 (0.76)	347 (0.56)	1,229 (0.63)
Non-Hispanic white	4 (1.00)	15 (1.00)	41 (1.00)	150 (1.00)	622 (1.00)	1,944 (1.00)
Women 1991						
African American	49 (4.01)	49 (3.88)	107 (3.09)	216 (1.84)	701 (1.42)	1,830 (0.98)
Hispanic	4 (1.37)	17 (1.33)	39 (1.12)	47 (0.83)	300 (0.61)	921 (0.49)
Non-Hispanic white	3 (1.00)	13 (1.00)	35 (1.00)	117 (1.00)	483 (1.00)	1,871 (1.00)

Due to rounding of the age-specific rates, the sum of the rates for the 6 age-specific racial-ethnic rates added by non-Hispanic white age-specific rates may not equal the overall rate.

panic whites until late in life, after which non-Hispanic-white mortality was higher. During 1985 to 1991, despite a slight drop in the age-specific rates, growing racial-ethnicity disparities in IHD were observed among the youngest ages. In particular, the youngest African-American women had high rate ratios of 3.23 in 1991 compared with 2.37 in 1985. Hispanics consistently had the lowest age-specific IHD rates, with age-specific rate ratios (relative to non-Hispanic whites) often below 0.75, although the gap narrowed during the observation period.

Stroke rates also increased most rapidly with age for non-Hispanic whites. Consequently, African-American and Hispanic men and women had an excess stroke mortality relative to non-Hispanic whites early in life, whereas non-Hispanic-white mortality was higher after

a varying mortality crossover point in the age groups 55 to 64 years and 65 to 74 years. This mortality crossover has also been noted in other vital-statistics studies of stroke in Hispanics and non-Hispanic whites.^{7,8} Despite a slight drop in the age-specific rates during 1985 to 1991, the excess stroke mortality relative to non-Hispanic whites increased; for example, in 1991, African-American men and women in the youngest age group had about a fourfold higher stroke mortality than did non-Hispanic whites. In addition, young Hispanics had, in general, higher age-specific stroke rates than non-Hispanic whites in 1991.

The substantially lower mortality of IHD in Hispanics relative to non-Hispanic whites among women, in addition to men, make our findings different from those

TABLE 3—Cardiovascular Disease Risk Factor Profiles Among California Residents Aged ≥18 Years, by Sex and Race or Ethnicity, 1994 to 1996

Risk factor	Men, 1994 to 1996		Women, 1994 to 1996	
	Prevalence	95% CI	Prevalence	95% CI
Current smoking, %				
African American	21.9	(15.8-28.4)	16.8	(11.5-24.2)
Hispanic	17.7	(15.3-20.2)	9.8	(8.1-11.4)
Non-Hispanic white	20.4	(23.8-22.0)	17.8	(18.4-19.1)
Hypertension, %				
African American	32.2	(25.8-38.5)	29.8	(24.8-34.8)
Hispanic	19.2	(18.2-22.3)	22.8	(20.7-25.5)
Non-Hispanic white	20.3	(18.8-21.7)	19.6	(18.3-20.9)
Obesity, %				
African American	35.8	(29.0-41.7)	40.6	(35.1-46.1)
Hispanic	28.7	(23.3-34.2)	35.4	(32.4-38.4)
Non-Hispanic white	25.0	(23.4-26.6)	22.1	(20.6-23.3)
Diabetes, %				
African American	9.0	(6.7-11.5)	9.1	(6.0-12.3)
Hispanic	8.4	(6.0-10.9)	7.6	(5.9-9.3)
Non-Hispanic white	7.5	(7.0-8.0)	5.3	(2.6-5.6)
Leisure-time sedentary lifestyle, %				
African American	58.2	(52.4-65.5)	59.5	(54.1-64.9)
Hispanic	69.5	(66.4-72.6)	67.4	(64.7-70.1)
Non-Hispanic white	48.8	(45.3-50.8)	48.9	(47.2-50.7)

of recent reports¹⁶⁻²⁰ (although not others²¹). Inconsistencies may be due to the inclusion of differing ICD-9 codes or temporal or geographic variations between studies. Hispanics also had the most favorable secular trends, with the steepest declines in rates of IHD in women and of stroke in men and women.

The Hispanic results are paradoxical considering the relatively low socioeconomic status of this racial-ethnic group and the well-established association between socioeconomic status and CVD mortality.²²⁻²⁴ Hispanics have advantageous rates of other key health indicators, such as infant mortality, life expectancy, and measures of functional health, while having a greater proportion of persons living in poverty, without health insurance, and with reduced access to health care than non-Hispanic whites.^{9,25,26} With 22% of Hispanics falling below the federally established poverty threshold, Hispanics have higher rates of poverty than African Americans (21%) or non-Hispanic whites (9%) in California.²⁷ A national study has suggested a "healthy migrant effect," with foreign-born Hispanics having lower mortality than native-born persons.²¹ In that study, however, the Hispanic advantage remained even after adjusting for nativity.

The paradoxically low rates in Hispanics are made even more perplexing by the generally adverse cardiovascular risk profile in this racial-ethnic group.²⁸ On average, Hispanics have higher triglyceride levels, lower high-density-lipoprotein-cholesterol levels, higher systolic blood pressures, higher body mass index and central obesity, and a greater incidence and prevalence of

non-insulin-dependent diabetes mellitus.^{27,29-39} Among the racial-ethnic groups participating in the first National Health and Nutrition Examination Survey (NHANES-1) (1976-1980) and the Hispanic Health and Nutrition Examination Survey (HHANES) (1982-1984), Hispanics aged 45 to 74 years had the highest prevalence of diabetes mellitus (diagnosed plus undiagnosed): 12% in non-Hispanic whites, 19% in African Americans, and 24% in Mexican Americans.⁴⁰ Whereas the overall prevalence of hypertension is lower among Hispanics than among African Americans and similar to that of non-Hispanic whites,^{27,32,41-43} the proportion of hypertensive persons with poor blood pressure control is high in both Hispanics and African American.^{32,33,44} These adverse risk factors may be partially offset by a lower rate of smoking; in one study, California Hispanics were statistically less likely than non-Hispanic whites to be current smokers and, among smokers, smoked fewer cigarettes.⁴⁵ The recent BRFSS results also support a lower prevalence of current smoking in Hispanics, although significant only in women.

Vital-statistics studies and surveillance studies of incident and prevalent CVD have presented inconsistent findings with regard to the Hispanic paradox, especially for IHD. The Corpus Christi (Texas) Heart Project has shown a greater incidence of hospitalized myocardial infarction (MI) among Hispanics than among non-Hispanic whites.²⁸ This study, however, lacks data on silent MIs and fatal, out-of-hospital coronary events, which comprise a third to half of the fatal coronary events.⁴⁶

The same study group also observed higher case-fatality rates after MI in Hispanics than in non-Hispanic whites.^{40,47} In the San Luis Valley (Colorado) Diabetes Study, the prevalence of coronary heart disease in men with diabetes was 50% lower among Hispanics than non-Hispanic whites, but little difference was evident among those without diabetes.⁴⁸ In contrast to the San Luis study, the San Antonio (Texas) Heart Study showed a lower prevalence of MI in Hispanics than in non-Hispanic-white men in those without diabetes.⁴⁹ The higher case-fatality rate in Hispanics may explain the higher incidence of MI observed in one study and the lower prevalence observed in the other.^{28,43} The lower IHD mortality observed in Hispanics in this and other vital-statistics studies, however, is not consistent with a concomitant high case-fatality and high incidence rate of MI previously reported for this racial-ethnic group.

Vital-statistics data have limitations that may explain these inconsistencies. We have not validated death certificate coding, and thus, coding artifacts could account for a portion of the observed racial-ethnic differences, especially for Hispanics. Substantial underreporting for Hispanic race or ethnicity has been noted in death certificates by some.^{44,45} The National Longitudinal Mortality Study, however, observed that 94% of self-reported Hispanics were classified as Hispanic on the death certificate (98.7% overall agreement for Hispanic origin).⁵⁰ Inflating Hispanic rate numerators by an additional 6%, however, would not account for the sizable CVD rate discrepancies observed between Hispanics and African Americans or non-Hispanic whites. Previous studies have discounted coding artifacts because of the consistency in results across state borders.³³ Additional missed deaths could have resulted if Hispanics chose to return to Mexico or other countries of origin to die after severe CVD events and thus not be reported,³ although this probably represents a small fraction of the total.

Alarming higher IHD and stroke mortality in African Americans than in non-Hispanic whites has resulted in a targeting of preventive efforts. Public health efforts to reduce the disparity in CVD outcomes require a continued identification and characterization of racial-ethnic and age-specific risks. It is important to evaluate not only group differences in mortality when considering possible target groups, but also current differences and secular trends in CVD risk factor profiles that affect future mortality. In recent years, the prevalences of cigarette smoking and obesity showed competing trends; the favorable decline in the prevalence of cigarette smoking in all sex-racial or -ethnic groups among California's adult population (27.5% decrease since 1984–1987) was offset by a dramatic rise in the prevalence of obesity (52.1% increase since 1984–1987). Between 1984 to 1987 and 1994 to 1996, the prevalence of a sedentary lifestyle was relatively stable at 55% for all Californians. Combined with the greater prevalence of diabetes in the minority populations, these are serious public health concerns with implications for future trends in CVD mortality. The

effect of increasing levels of these risk factors on mortality trends may be somewhat offset by recent improvements in the management of patients at risk.

Clearly the forces behind the recent declines in CVD mortality have not benefited all demographic groups equally. The benefits of improved secondary prevention especially will likely lag for more economically disadvantaged groups. For African Americans, particularly early in life, the highest IHD and stroke mortality, lack of a comparable decline in age-adjusted IHD and stroke rates, and unfavorable trends in CVD risk factors suggest that increased primary and secondary prevention efforts should be focused on this race or ethnicity currently at greatest risk. Although comparing different populations requires caution, national data on IHD mortality from 1968 through 1985 indicate that the average annual percentage decline may be slowing dramatically for African-American women (−3.9% in 1968 to 1978, −2.0% in 1979 to 1985 in the national data,⁴ and −0.3% in 1985 to 1991 in California data). A similar but more gradual decelerating decline occurred in African-American men and non-Hispanic white women, whereas an acceleration in the declines occurred in non-Hispanic white men. Despite the lower and declining age-adjusted IHD mortality, Hispanics had higher stroke mortality than non-Hispanic whites early in life. Taken together with Hispanics' less favorable CVD risk profile and the large number of Hispanics entering the ages of greater risk for IHD and stroke over the next several decades,²⁸ this minority population also deserves careful monitoring efforts. The interplay between race or ethnicity, risk factor profile, and the trends in CVD mortality and, in particular, the paradoxical finding of unexpectedly low CVD rates in Hispanics despite an adverse cardiovascular risk profile, lower socioeconomic status, and inconsistent epidemiologic findings need further investigation.

Acknowledgment

We thank David C. Goff, MD; Steven Haffner, MD; Joe V. Selby, MD; Steve Sidney, MD; and Patrick Fox, MD, for their helpful comments on earlier versions of this manuscript.

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AUTHORQUERIES

- Q1 <<AUTHOR: Please verify that Ann Arbor is the correct city for Dr. Kaplan's affiliation.>
- Q2 <<AUTHOR: Is Colorado correct? If not, provide correct state.>
- Q3 <<AUTHOR: Please verify the academic degrees or provide the correct one(s).>
- Q4 RFP 40 <<AUTHOR: Please check the title "Americans' America?" <<AUTHOR: Please verify that the location is correct or give the correct city and state.>
- Q5 <<AUTHOR: The title of Table 1, please verify that "95%" is correct; the original symbol did not translate electronically (in the hard copy it was "95" which is unclear in this context). Also, confidence interval represents a range (expressed as x to x), and confidence limit represents the upper and lower extremes (expressed as x, x). Therefore, we have substituted "to" for the comma for 95% CI.>