TRENDS

What If We Were Equal? A Comparison Of The Black-White Mortality Gap In 1960 And 2000

Closing this gap could eliminate more than 83,000 excess deaths per year among African Americans.

by David Satcher, George E. Fryer Jr., Jessica McCann, Adewale Troutman, Steven H. Woolf, and George Rust

ABSTRACT: The United States has made progress in decreasing the black-white gap in civil rights, housing, education, and income since 1960, but health inequalities persist. We examined trends in black-white standardized mortality ratios (SMRs) for each age-sex group from 1960 to 2000. The black-white gap measured by SMR changed very little between 1960 and 2000 and actually worsened for infants and for African American men age thirty-five and older. In contrast, SMR improved in African American women. Using 2002 data, an estimated 83,570 excess deaths each year could be prevented in the United States if this black-white mortality gap could be eliminated.

THE 1985 TASK FORCE report on black and minority health raised national concern that 60,000 excess deaths were occurring annually because of health disparities, primarily among African Americans.[1] Healthy People 2010 named the elimination of health disparities as one of two overriding goals of the nation's public health agenda for this decade.[2] Health disparities are observed across a broad range of racial, ethnic, socioeconomic, and geographic subgroups in America, but the history of African Americans, rooted in slavery and postslavery segregation, motivates our focused analysis of black-white health disparities.[3]

In the past forty years, African Americans have witnessed some progress in civil rights, housing, education, employment, and health care. In 1960 segregation was evident in hospitals and doctors' offices throughout the South.[4] In 1960 there was no Medicare or Medicaid, and the infant mortality rate was 44.3 per 1,000 for African American babies and 29.2 for whites.[5] Health care and health status are now better for African Americans, but how far have we come in reducing inequality?

Study Data And Methods

Using vital statistics data from the National Center for Health Statistics (NCHS) for each

David Satcher, U.S. surgeon general under President Bill Clinton, is director of the National Center for Primary Care and a professor of community health and preventive medicine at the Morehouse School of Medicine in Atlanta, Georgia. George Fryer is a professor of pediatrics at the University of Rochester (New York) School of Medicine and Dentistry and associate director of its Center for Child Health Research. Jessica McCann is an analyst at the Robert Graham Center in Washington, D.C. Adewale Troutman is director of the Louisville (Kentucky) Metro Health Department. Steven Woolf is professor and director of research in the Department of Family Medicine at Virginia Commonwealth University in Richmond. George Rust (GRust@msm.edu) is deputy director of the National Center for Primary Care and a professor of family medicine at Morehouse School of Medicine.

DOI 10.1377/hlthaff.24.2.459 ©2005 *Project HOPE–The People-to-People Health Foundation, Inc.*

decade from 1960 through 2000, we examined U.S. mortality for African Americans, standardized using death rates for age and sex categories among whites in those same years. We then examined trends in standardized mortality ratios (SMRs) during the forty-year period. Since 1960 there have been minor changes in the way race was reported, but none that greatly affected this analysis.

We calculated the SMR employing the direct method of rate standardization, in which the age-specific death rate among African Americans was divided by the corresponding age-specific rate for whites.[6] We determined the number of excess deaths among African Americans by applying the age-specific mortality rate of whites to the African American population of the same age and calculated the difference between that value and the actual number of deaths.

Study Results

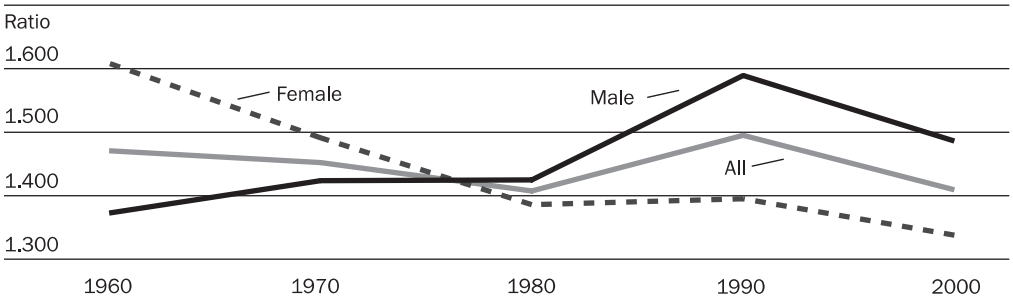
Large reductions in death rates occurred between 1960 and 2000 for all twenty-two age/sex groups, but the disparity between the higher mortality rates of blacks and lower rates among whites did not change appreciably. The SMR for blacks was 1.472 in 1960 and 1.412 in 2000. In the most recent available data, the SMR was 1.405 in 2002. Thus, in 2002, blacks suffered 40.5 percent more deaths (83,570 deaths) than would be expected if they had experienced the mortality rate of whites. This increased by a third from 62,718 in 1960 (because of population increases).

While overall SMRs remain remarkably flat over four decades, these data mask the effect of sex. The female SMR is trending downward (improving), while the male SMR is trending upward (Exhibit 1). The SMR for African American females improved overall from 1.607 to 1.342 between 1960 and 2000, and especially for women ages 25–34, for whom SMR dropped from 3.214 to 2.196. The SMR for African American men actually worsened from 1.376 to 1.487 during these four decades, with a peak of 1.588 in 1990.

Half of the African American population's age-sex subgroups, especially men age forty-five and older, experienced an increase in the SMR between 1960 and 2000 (Exhibits 2 and 3). Most excess deaths in 2000 occurred among middle-aged adults, which was also true in 1960. Only among the very oldest (age eighty-five and older) were African American death rates lower than those of whites.

The African American infant mortality rate has dropped by two-thirds over four decades, from 44.3 per 1000 in 1960 to 14.1 per 1,000 in 2000, in parallel with a drop in the overall U.S. infant mortality rate from 26.0 to 6.9. However, the black-white infant mortality gap as measured by SMR actually worsened from 1960 (1.970 for male and 2.073 for female infants) to 2000 (2.519 for male and 2.515 for female infants).

EXHIBIT 1
Standardized Mortality Ratios For Blacks And Whites, By Sex, For Each Decade 1960–2000



SOURCE: National Center for Health Statistics, Vital Statistics Data, 1960–2000
NOTES: Standardized mortality ratio (SMR) is calculated by the direct method of rate standardization, in which the age-specific death rate among African Americans is divided by the corresponding age-specific rate for whites.

EXHIBIT 2
Mortality Among African American Males In 1960 And 2000, Standardized On Rates For Age And Sex Categories Among The White Population That Year

	African American deaths per 100,000		White deaths per 100,000		African American excess deaths		Standardized mortality rates	
Age (years)	1960	2000	1960	2000	1960[a]	2000[b]	1960	2000
<1	5,307	1,653	2,694	656	7,342	2,951	1.970	2.519
1–4	208	61	105	32	1,121	325	1.988	1.883
5–14	75	31	53	20	489	324	1.425	1.500
15–24	212	181	144	108	891	2,163	1.475	1.686
25–34	402	272	163	134	2,680	3,411	2.466	2.022
35–44	762	457	333	234	4,663	5,967	2.291	1.949
45–54	1,625	1,060	932	503	6,171	10,472	1.743	2.109
55–64	3,316	2,173	2,225	1,178	6,733	10,390	1.490	1.845
65–74	5,799	4,066	4,848	2,950	3,630	7,977	1.196	1.378
75–84	8,605	8,240	10,300	6,818	−2,322	4,836	0.835	1.209
>84	14,845	15,495	21,750	16,898	−2,022	−1,319	0.683	0.917

SOURCE: National Center for Health Statistics, Vital Statistics Data, 1960–2000.
NOTES: See text for explanation of standardized mortality rates. 95 percent confidence intervals are available from the authors on request; contact George Rust via e-mail, GRust@msm.edu.
[a] Total African American population in 1960 = 18,872,000.
[b] Total African American population in 2000 = 35,303,000.

EXHIBIT 3
Mortality Among African American Females In 1960 And 2000, Standardized On Rates For Age And Sex Categories Among The White Population That Year

	African American deaths per 100,000		White deaths per 100,000		African American excess deaths		Standardized mortality rates	
Age (years)	1960	2000	1960	2000	1960[a]	2000[b]	1960	2000
<1	4,162	1,353	2,088	538	6,097	2,330	2.073	2.515
1–4	173	51	85	25	956	278	2.034	2.000
5–14	54	22	35	14	418	225	1.550	1.507
15–24	108	60	55	42	738	523	1.958	1.433
25–34	273	127	85	58	2,447	1,900	3.214	2.196
35–44	568	275	191	126	4,638	4,501	2.975	2.184
45–54	1,177	594	459	283	6,995	7,001	2.565	2.098
55–64	2,510	1,213	1,079	736	9,494	6,538	2.327	1.650
65–74	4,064	2,659	2,779	1,894	5,525	7,513	1.462	1.404
75–84	6,730	5,968	7,697	4,860	−1,547	6,202	0.874	1.228
>84	13,053	14,442	19,478	14,949	−2,442	−1,140	0.670	0.966
All age-gender groups[c]					62,718	83,369	1.472**	1.412**

SOURCE: National Center for Health Statistics, Vital Statistics Data, 1960–2000.
NOTES: See text for explanation of standardized mortality rates. 95 percent confidence intervals are available from the authors on request; contact George Rust via e-mail, GRust@msm.edu.
[a] Total African American population in 1960 = 18,872,000.
[b] Total African American population in 2000 = 35,303,000.
[c] Total for both males and females, significant at the .05 level.

Discussion

These data demonstrate that survival has improved dramatically for both African American and white populations in all age-sex strata over the past forty years but that there has been little improvement in the relative black-white mortality gap. In the words of musician Wynton Marsalis, race is the elephant in America's living room.

Surprisingly, health disparities may be even more resistant to change than other social determinants. For example, between 1960 and 2000, median income among blacks rose from 65 percent to 84 percent of the median income of whites. The ratio of African American to white high school dropout rates declined from almost 2.2 times higher in 1967 to 1.4 times higher in 1997.[7] Meanwhile, the Census Bureau reported a reduction in all five measures of residential segregation for African Americans between 1980 and 2000.[8] These data show that inequities can be reduced even as absolute rates are improving for both black and white populations.

"Data show that inequities can be reduced even as absolute rates are improving for both black and white populations."

In contrast, mortality disparities (SMRs) have displayed a remarkably flat line over four decades. The only economic indicator of inequality that has remained this flat over decades is wealth or net worth, which for African Americans in 2002 was only about 7 percent ($5,988) of the $88,651 median wealth for non-Hispanic whites.[9] In the process quality control models of Joseph Juran, this lack of variability in SMR over time would be considered a statistical process that is "under control"—that is, this complex system is consistently producing a predictable result.[10]

■ **What will it take to reduce disparities?** What "systems change" could we undertake as a nation to assure that these mortality ratios do not remain flat over the next four decades? Examples of systems change in health care would include universal health insurance coverage, a primary care medical home for each American, proportionate representation of African Americans in the health professions, and the elimination of bias in the delivery of diagnostic and therapeutic interventions. Systems change related to the health of communities would have to be much broader: from nonviolent and exercise-friendly neighborhoods to more nutritious food outlets, educational equality, career opportunities, parity in income and wealth, home ownership, and ultimately hope.[11]

Some age-sex subgroups are doing better than others. For example, SMR improved among nonelderly, African American adult women, especially in the childbearing ages (15–44). Improvements were greatest from 1960 to 1980, but rates have been relatively flat during the past two decades. This pattern is similar to women's gains in earnings, which rose steadily for African American women from around 66 percent of white women's earnings in 1960 to 92 percent in 1980, then flattened and gradually slipped back to 89 percent by 2000.[12] Medicaid, with its coverage for prenatal care and family planning, may also have contributed. Medicaid covers 62 percent of African American births but only 23 percent of births to white, non-Hispanic mothers.[13]

■ **Focus on African American men.** African American men, especially those ages 45–64, experienced a significant increase in SMR, or less improvement in mortality rates for African American men than among white men in the same age group.[14] One factor is that health access expansions have consistently excluded nonelderly, nondisabled adult men. When Medicare was passed into law, the average African American man did not live long enough to become eligible for Medicare. Low-income adult men generally can only become eligible for Medicaid coverage by becoming blind, disabled, or elderly.

Three other trends may contribute to increasing health inequities of African American men. First, black men have not experienced

the same improvements in income inequality (earning only 78 percent of white men's earnings in 2000 compared with black women's 89 percent of what white women earn). Second, there was a spike in gun-related homicide deaths starting in 1983 and peaking in 1994–95.[15] Third, the death rate related to HIV infection has disproportionately affected communities of color, with the black-white ratio of deaths from infectious diseases rising threefold from 1.86 in 1979 to 5.80 in 1998.[16] Mitchell Wong and colleagues recently demonstrated that racial disparities in years of potential life lost were largely attributable to cardiovascular disease (34 percent of racial differences), HIV/AIDS (11.2 percent), trauma (10.7 percent), and diabetes (8.5 percent).[17] Robert Levine found that from 1979 to 1998, the black-white ratio of age-adjusted, sex-specific mortality increased for all but one of nine causes of death that accounted for 83.4 percent of all U.S. mortality.[18]

■ **Study limitations.** Limitations of our analysis must be acknowledged. First, we examined only mortality data and not measures of morbidity, functional status, and quality of life. Second, we did not control for covariates such as income, education, socioeconomic status, and region. Third, we examined only five data points over forty years. Finally, these data document the problem, but not its causes or potential solutions.

THE INTERRELATEDNESS of personal health behavior, social determinants, neighborhood ecology, provider bias, structural inequities, and institutionalized racism suggests that eliminating disparities will require large-scale, multidimensional, community-participatory interventions focused explicitly on health disparities for specific population groups, as well as on broader dimensions of social equality and economic justice.[19] Even so, disparities-specific interventions could eliminate thousands of premature deaths in the United States each year.

This work was supported in part by NIH/NCMHD EXPORT Grant no. P20 MD00272-02.

NOTES

1. U.S. Department of Health and Human Services, *Report of the Secretary's Task Force on Black and Minority Health*, 8 vols. (Washington: U.S. Government Printing Office, 1985).
2. U.S. Department of Health and Human Services, *Healthy People 2010: Understanding and Improving Health*, 2d ed. (Washington: U.S. GPO, November 2000).
3. W.M. Byrd and L.A. Clayton, "Race, Medicine and Health Care in the United States: A Historical Survey," *Journal of the National Medical Association* 93, no. 3 Supp. (2001): 11S–34S; and R.G. Hood, "The 'Slave Health Deficit': The Case for Reparations to Bring Health Parity to African Americans," *Journal of the National Medical Association* 93, no. 1 (2001): 1–5.
4. Byrd and Clayton, "Race, Medicine, and Health Care."
5. E. Arias et al., "Table 31: Infant, Neonatal, and Post-Neonatal Mortality Rates by Race and Sex: United States, 1940, 1950, 1960, 1970, and 1975–2001," *Deaths: Final Data for 2001*, National Vital Statistics Reports 52, no. 3 (Hyattsville, Md.: National Center for Health Statistics, 18 September 2003), 92.
6. N.E. Breslow and N.E. Day, "Rates and Rate Standardization," in *Statistical Methods in Cancer Research, Vol. 2: Design and Analysis of Cohort Studies* (Lyon, France: Oxford University Press, International Agency for Research on Cancer, 1987), 65–72.
7. U.S. Census Bureau, School Enrollment, Historical Tables, "Table A-4: Annual High School Dropout Rates by Sex, Race, Grade, and Hispanic Origin, 1967–2002," 9 January 2004, www.census.gov/population/socdemo/school/tabA-4.pdf (10 December 2004).
8. U.S. Census Bureau, "Residental Segregation of Blacks or African Americans: 1980 to 2000," chap. 5 in *Racial and Ethnic Residential Segregation in the United States: 1980–2000*, Series CENSR-3, 7 May 2003, www.census.gov/hhes/www/housing/resseg/ch5.html. (27 October 2004).
9. B. Beck, "Wealth Gap Widens between Hispanics and Whites," Press Release, 18 October 2004, www.pewhispanic.org/site/docs/pdf/Wealth%20Press%20Release.pdf (27 October 2004).
10. H.M. Wadsworth, "Statistical Process Control," chap. 45 in J.M. Juran and A.B. Godfrey, *Juran's Quality Handbook*, 5th ed. (New York: McGraw Hill, 1999), 45.1–45.9.
11. G.K. Singh, "Area Deprivation and Widening Inequalities in U.S. Mortality, 1969–1998," *American Journal of Public Health* 93, no. 7 (2003): 1137–1143.
12. Income Surveys Branch, Housing and Household

Economic Statistics Division, U.S. Census Bureau, "Historical Income Tables—People (P-54)," 13 May 2004, www.census.gov/hhes/income/histinc/p54.html (27 October 2004).

13. J.C. Abma et al., *Fertility, Family Planning, and Women's Health: New Data from the 1995 National Survey of Family Growth,* Vital and Health Statistics 23, no. 19 (Hyattsville, Md.: NCHS, 1997).
14. E. Arias, *United States Life Tables, 2000,* National Vital Statistics Report 51, no. 3 (Hyattsville, Md.: NCHS, 19 December 2002).
15. U.S. Department of Health and Human Services, "Fig. 2-3: Firearm and Nonfirearm-related Homicides by Youths, 1980–1997," in *Youth Violence: A Report of the Surgeon General* (Rockville, Md.: DHHS, 2001), 22.
16. R.S. Levine et al., "Black-White Inequalities in Mortality and Life Expectancy, 1933–1999: Implications for Healthy People 2010," *Public Health Reports* 116, no. 5 (2001): 474–483.
17. M.D. Wong et al., "Contribution of Major Diseases to Disparities in Mortality," *New England Journal of Medicine* 347, no. 20 (2002): 1585–1592.
18. Levine et al., "Black-White Inequalities."
19. D.R. Williams, "Racial/Ethnic Variations in Women's Health: The Social Embeddedness of Health," *American Journal of Public Health* 92, no. 4 (2002): 588–597; D.R. Williams, "Race, Socioeconomic Status, and Health: The Added Effects of Racism and Discrimination," *Annals of the New York Academy of Science* 896 (1999): 173–188; and R. Lavizzo-Mourey and J.R. Knickman, "Racial Disparities—The Need for Research and Action," *New England Journal of Medicine* 349, no. 14 (2003): 1379–1380.