Sellers-McCroan Lecture

Reducing and eliminating health disparities through prevention and public health

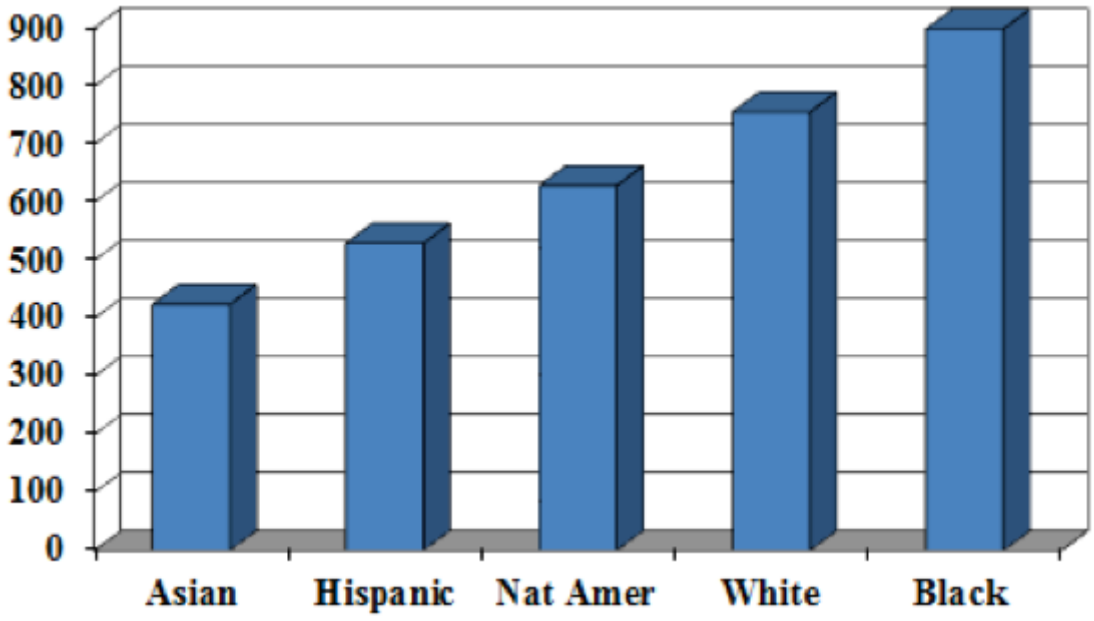
Daniel S. Blumenthal, MD, MPH, FACPM, FAAP

Dr. Blumenthal is Professor Emeritus, Community Health and Preventive Medicine, Morehouse School of Medicine, Atlanta GA; Extraordinary Professor, Community Health, Stellenbosch University Faculty of Medicine and Health Sciences, Cape Town, South Africa; and President, American College of Preventive Medicine

doi: 10.21633/jgpha.6.201

A considerable literature has developed around racial and ethnic health disparities (Institute of Medicine, 2012) since they were first brought to national attention in the mid-1980s (Heckler, 1986). However, there remain misconceptions regarding their magnitude and pervasiveness. For instance, as illustrated in Figure 1, White Americans as a group are not the healthiest Americans; in fact, they have the second-highest mortality rate of the five racial/ethnic groups for whom health statistics are routinely reported. Hence, automatically using the mortality rate of a disease or condition among Whites as the "gold standard" to which other groups are compared is not appropriate; rather, the lowest rate should be used as the standard comparator. Nonetheless, in most reports on racial and ethnic health disparities, rates for White are so used.

Figure 1. Mortality Rates, U.S., All Causes Deaths/100,000 population –age-adjusted

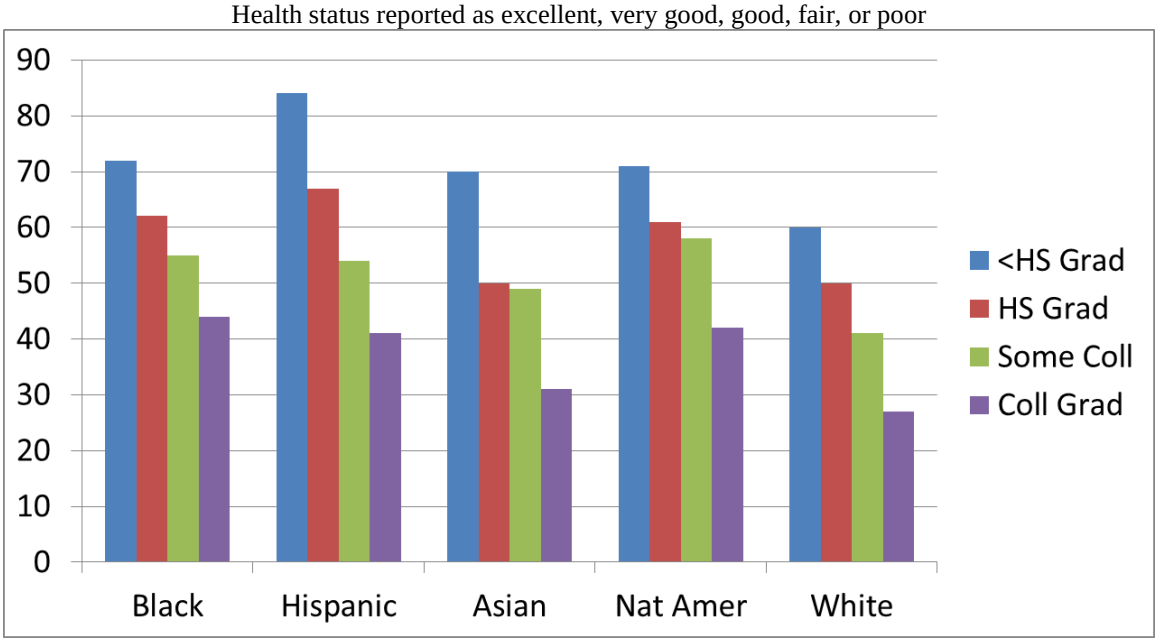


Source: Heath, United States, 2014

Further, all minority groups are not affected similarly by the disparity phenomenon; rather, African Americans not only have the highest overall mortality rate, they have the highest mortality rate for every leading cause of death. Compared to the lowest mortality rate, African Americans have 2.3 times the risk of death from heart disease, 2.1 times the risk of death from cancer, 1.9 times the risk from stroke, 2.9 times the risk from diabetes mellitus, 7.5 times the risk from homicide, and 28 times the risk from AIDS. There is no racial or ethnic group with a higher risk of death from any of these causes.

The Secretary's Task Force on the Health Status of Blacks and Other Minorities (Heckler, 1986) calculated that in the period of 1979-1981, there were 58,942 "excess deaths" among Black Americans. This is the number of Blacks who would not have died had the Black mortality rate been the same as the White mortality rate. Satcher et al. (2005) undertook a similar investigation 20 years later and calculated that for the year 2002, there were 83,570 excess deaths among African Americans. A rough calculation using 2011 mortality rates suggests that there were about 65,000 excess deaths among African Americans in that year. There has, of course, been a population increase since publication of the Secretary's Report. But considering that the 58,942 excess African-American deaths in the Report represented a two-year period (hence, 25,000-30,000 excess deaths per year) it is hard to say that we are doing any better now.

Figure 2. Percent of respondents age 25-74 self-evaluating as in less than very good health
Health status reported as excellent, very good, good, fair, or poor



The Causes of Disparities

The determinants of health status may be approximated as lifestyle 40%, biology (genetics) 30%, environment 20%, and medical care 10%. The lifestyle determinant was further parsed by Foege and McGinnis (1993) and Mokdad et al. (2004), as tobacco about 18%, physical inactivity and diet about 15% and alcohol 3.5%. There are also determinants of lifestyle, and these are commonly referred to as the *social determinants of health*, including such things as income, education, employment status, housing, discrimination, and powerlessness. For instance, in Figure 2, it can be seen that, regardless of race or ethnicity, persons with less education are consistently more likely to rate their health as less than "very good" than those with more education.

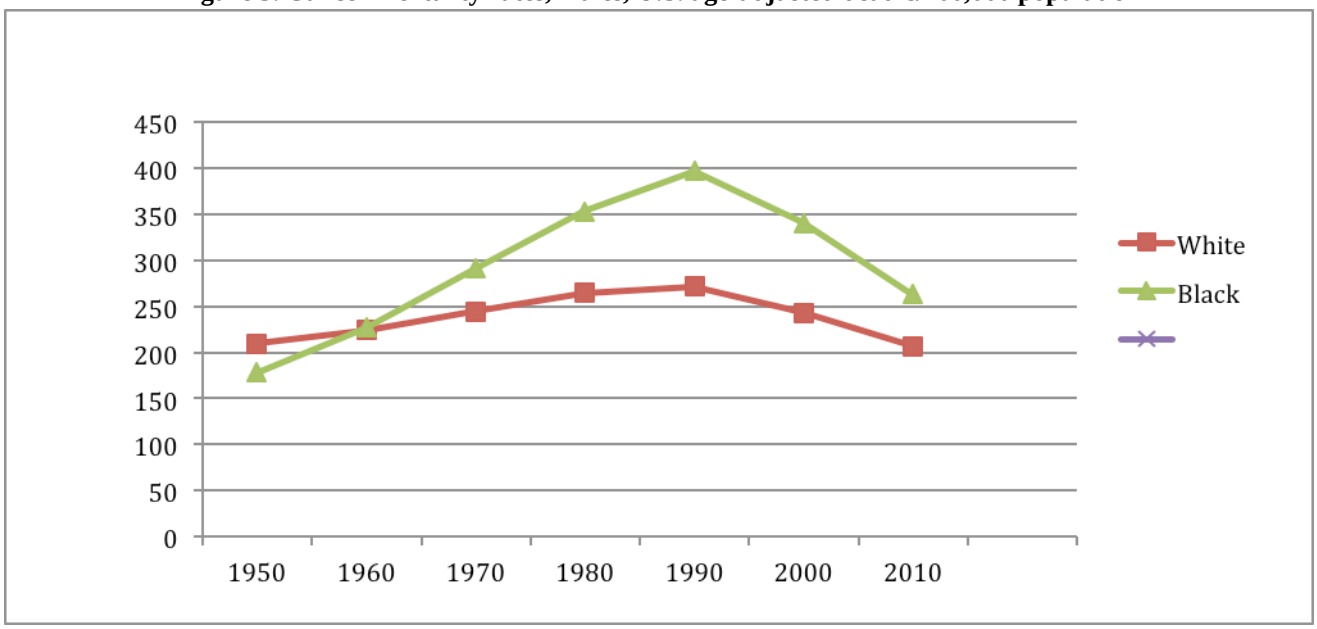
Life expectancy is proportional to income (Chetty et al., 2016), a relationship that has been known since the 19th century (Villermé, 1830). In the US, low-income persons are more likely than middle-income persons to have high blood pressure, obesity, high cholesterol, heart attack, cancer, depression, diabetes, headaches, and even colds or the flu. Middle income persons, in turn, are more likely to have any of these conditions than high-income persons (Mendes, 2010).

The Whitehall Study of the British Civil Service offers the most well-known documentation of the relationship between occupation and health: workers in the professional and executive classifications were found to have the lowest mortality rates, followed by clerical staff; the highest mortality rates were found among those in the lowest classifications (Marmot, 2004). A voluminous literature on the impact of racism and discrimination on health and health care is documented and summarized in the Institute of Medicine Study, *Unequal Treatment* (Smedley, Smith, and Nelson, 2013).

Disparities and Prevention

An examination of disparities in cancer offers an attractive model for reducing disparities more generally. Figure 3 illustrates the US cancer mortality rate among Black and White males from 1950.

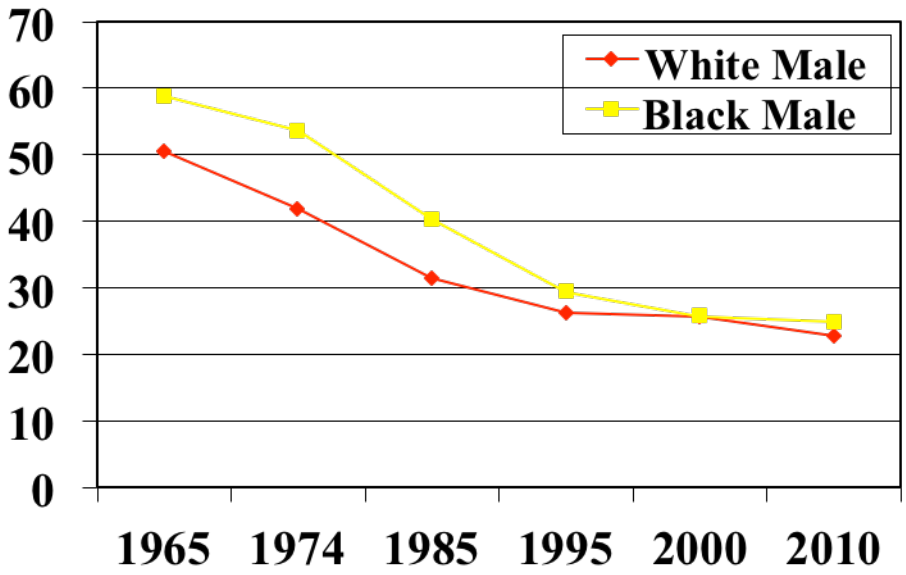
Figure 3. Cancer mortality rates, males, U.S. age-adjusted deaths/100,000 population



This graph offers several interesting features. The first is that prior to about 1960, there was almost no racial disparity. If there was any, it was a "reverse disparity" – a higher cancer mortality rate among Whites than Blacks. In the years following the early 60's, cancer mortality steadily increased, as did the black-white cancer mortality disparity. Then, beginning in the early 1990s, cancer mortality began to experience a steady decrease. At the same time, the black-white mortality disparity also began a steady decrease, falling from a difference of 125 deaths/100,000 population in 1990 to 60 deaths/100,000 population in 2010.

The decline in cancer mortality is not difficult to explain. The shape of the cancer mortality curve is primarily driven by lung cancer, which is by far the leading cause of cancer-related death. Lung cancer is mainly caused by smoking; many other cancers are also associated with smoking. From the mid-1960s onward, smoking rates declined (Figure 4), a phenomenon that is often attributed to the First Surgeon General's Report on Smoking and Health (USDHHS, 1964).

Figure 4. Smoking prevalence, males, U.S., persons ≥18 years old



About 25 years after smoking rates began to decrease – roughly the "incubation period" for lung cancer – cancer mortality rates began to decrease. And, as shown in Figure 4, the smoking disparity between Black and White men also decreased. Although the smoking rate among Black men exceeded that among White men by about 20% in 1960, by

the late 1990s, Black and White men were smoking at about the same rate. Hence, we see a happy confluence of phenomena: with a decline in smoking came a decline in cancer, and with a decline in the black-white smoking disparity came a decline in the cancer disparity. Prevention emerges as the key to reducing the cancer mortality disparity and is more effective in this regard than is the pursuit of a better treatment – which, in the case of lung cancer, has been essentially a futile pursuit for decades.

Summary

African Americans suffer more from health disparities than any other racial or ethnic group. In fact, African Americans have the highest mortality rate from every major cause of death. If public health is (as it fancies itself) social justice in health and health care, then it must address this injustice.

The underlying cause of disparities is social determinants: income, education, discrimination, powerlessness, and other social factors. In the long run, a "level playing field" must be developed for these factors. But considerable progress in reducing disparities can be achieved through health promotion and disease prevention initiatives that focus on lifestyle determinants of health: tobacco control, improvements in diet, increases in physical activity, firearm control, and other well-known measures.

Acknowledgements
This work was supported by grant 1R01CA166785 (National Cancer Institute) and cooperative agreement 1U58DP005945 (Centers for Disease Control and Prevention).

References

Chetty R, Stepner M, Abraham S, et al (2016). The Association between Income and Life Expectancy in the United States, 2001-2014. JAMA 315: 1750-1766

Heckler, M: Report of the Secretary's Task Force on Black and Minority Health in the United States. Dept. of Health and Human Services. Task Force on Black and Minority Health, 1986. Washington, D.C. : U.S. Dept. of Health and Human Services

IOM (Institute of Medicine). 2012. How far have we come in reducing health disparities? : Progress since 2000: Workshop summary. Washington, DC: The National Academies Press.

Marmot M: The Status Syndrome: How Social Standing Affects Our Health and Longevity. New York, NY. Owl Books, 2004

McGinnis JM, Foege WH.Actual causes of death in the United States. JAMA. 1993; 270:2207-12.

Mendes E: In U.S., Health Disparities Across Incomes Are Wide-Ranging. Gallup, Oct 18, 2010. http://www.gallup.com/poll/143696/health-disparities-across-incomes-wide-ranging.aspx. Accessed May15, 2016.

Mokdad AH, Marks JS, Stroup DF, Gerberding JL : Actual causes of death in the United States, 2000. JAMA. 2004;291:1238-45.

Satcher D, Fryer GE Jr, McCann J, Troutman A, Woolf SH, Rust G. What if we were equal? A comparison of the black-white mortality gap in 1960 and 2000. Health Aff (Millwood). 2005; 24:459-64.

Smedley BD, Smith AY, and Nelson AR (eds). 2013. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Institute of Medicine, Washington, DC

USDHHS. Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service. Atlanta GA: U.S. Department of Health, Education and Welfare; 1964. DHHS Publication No. 1103

Villermé L (1830): De la mortalité dans les divers quartiers de la ville de Paris, et des causes qui la rendent très différente dans plusiers d'entre aux, ansi que les divers quartiers de beaucoup de grandes villes. Annales d'Hygiène Publique et de Médecine Légale 3 :294-341.