Focus 7. Social inequalities in cancer burden between Black and White populations in the USA

Ahmedin Jemal and Rebecca Siegel

Inequalities in disease rates among racial or ethnic minority populations have been documented in many parts of the world, including England (non-Whites vs Whites) (Nazroo et al., 2007), Singapore (Malays or Indians vs Chinese) (Sabanayagam et al., 2010), the USA (Blacks, Hispanics, or Asians vs Whites), and Zimbabwe (Blacks vs Whites) (Chokunonga et al., 2016). These disparities may vary within and/or between countries and are largely based on differences in migration patterns, socioeconomic status (SES), and health systems. Blacks involuntarily immigrated to the USA during the period from the 16th century to the 18th century and are a particularly vulnerable population; disparities in cancer outcomes have been well documented since the 1970s (Burbank and Fraumeni, 1972). Because of the unique availability of long-term data on race in the USA, we can highlight these inequalities here.

Cancer death rates during 2011–2015 were higher in Black populations than in White populations for 9 of the top 15 cancers in men and women (Table F7.1), with the excess risk for some cancers persisting since the 1950s (Burbank and Fraumeni, 1972). The death rate for breast cancer in Black women was 40% higher than that in White women, despite a lower incidence rate (Siegel et al., 2018). The reasons for this disparity are complex, but it is predominantly due to inequalities in employment, wealth, education level, housing, and overall SES that contribute to excess exposure to cancer risk factors, and to barriers in both health literacy and access to good-quality health care, including primary prevention, early detection, and treatment (see Chapter 7). One study estimated that eliminating socioeconomic disparities in the USA could prevent twice as many cancer deaths as eliminating racial disparities (Siegel et al., 2011).

Table F7.1. Cancer death rate ratios of Black versus White populations for the top 15 cancer types in Black men (left) and the top 15 cancer types in Black women (right), listed in descending order by rate ratio

Cancer type	Rate for Black men[a]	Rate for White men[a]	Rate ratio (95% confidence interval)[b]	Cancer type	Rate for Black women[a]	Rate for White women[a]	Rate ratio (95% confidence interval)[b]
Stomach	8.5	3.4	2.54 (2.46–2.62)	Stomach	4.0	1.7	2.37 (2.28–2.46)
Prostate	40.8	18.2	2.24 (2.20–2.27)	Myeloma	5.6	2.4	2.31 (2.24–2.39)
Larynx	3.4	1.7	1.95 (1.86–2.05)	Uterine corpus	8.5	4.3	1.99 (1.94–2.04)
Myeloma	7.6	4.0	1.90 (1.84–1.96)	Cervix uteri	3.8	2.1	1.83 (1.76–1.90)
Liver and intrahepatic bile duct	13.5	8.2	1.65 (1.62–1.69)	Breast	29.5	20.8	1.41 (1.40–1.43)
Colon and rectum	25.1	16.9	1.48 (1.46–1.51)	Liver and intrahepatic bile duct	4.7	3.4	1.39 (1.35–1.44)
Oral cavity and pharynx	4.9	3.9	1.26 (1.21–1.30)	Colon and rectum	16.5	12.1	1.36 (1.34–1.38)
Lung and bronchus	66.9	56.3	1.19 (1.18–1.20)	Pancreas	12.5	9.5	1.31 (1.29–1.34)
Pancreas	15.2	12.8	1.19 (1.16–1.21)	Urinary bladder	2.5	2.3	1.09 (1.04–1.14)
Kidney and renal pelvis	5.7	5.8	0.98 (0.95–1.01)	Kidney and renal pelvis	2.4	2.5	0.99 (0.95–1.03)
Leukaemia	7.6	9.5	0.80 (0.78–0.83)	Lung and bronchus	34.4	39.0	0.88 (0.87–0.89)
Oesophagus	6.0	8.0	0.75 (0.73–0.77)	Leukaemia	4.6	5.2	0.88 (0.85–0.91)
Non-Hodgkin lymphoma	5.5	7.8	0.71 (0.68–0.73)	Ovary	6.5	7.6	0.85 (0.83–0.87)
Urinary bladder	5.5	8.3	0.66 (0.63–0.68)	Non-Hodgkin lymphoma	3.4	4.7	0.74 (0.71–0.77)
Brain and ONS	3.3	6.1	0.54 (0.52–0.56)	Brain and ONS	2.2	4.0	0.55 (0.52–0.57)
All sites	246.1	200.6	1.23 (1.22–1.23)	All sites	163.2	143.6	1.14 (1.13–1.14)

ONS, otherwise non-specified.
[a] Average annual rate per 100 000 people of non-Hispanic ethnicity during 2011–2015; age-adjusted to the 2000 United States standard population.
[b] Rate ratio is the 2011–2015 rate for Black populations divided by the rate for White populations before rounding; all results are statistically significant ($P < 0.05$), with the exception of kidney cancer for both sexes.
Source: compiled from Surveillance, Epidemiology, and End Results Program (SEER) (https://seer.cancer.gov/) SEER*Stat Database: Mortality – All COD, Aggregated With State, Total U.S. (1990–2016) <Early release with Vintage 2016 Katrina/Rita Population Adjustment>, National Cancer Institute, DCCPS, Surveillance Research Program, released May 2018. Underlying mortality data provided by NCHS (www.cdc.gov/nchs).

According to the United States Census Bureau, one quarter of Black people lived in poverty in 2015, compared with one tenth of White people. Poor health is not only strongly correlated with impoverishment but is also exacerbated by inequalities in medical advances in cancer control (because of slower dissemination to disadvantaged groups). For example, the racial disparity in tobacco-related cancer mortality began to narrow in the early 1990s because of faster declines in smoking among Black people (DeLancey et al., 2008), but the disparities in female breast cancer and colorectal cancer mortality continued to widen until recently (Fig. F7.1), coinciding with the increased uptake of screening and improved access to advances in treatment for these diseases for the Black population. Furthermore, recent studies reported that differences in insurance status (a proxy for health-care access) among non-elderly cancer patients accounted for more than one third of the Black versus White survival disparity for female breast cancer and one half of the Black versus White survival disparity for colorectal cancer; differences in tumour characteristics accounted for one quarter of the Black versus White survival disparity for both cancer types (Jemal et al., 2018; Sineshaw et al., 2018).

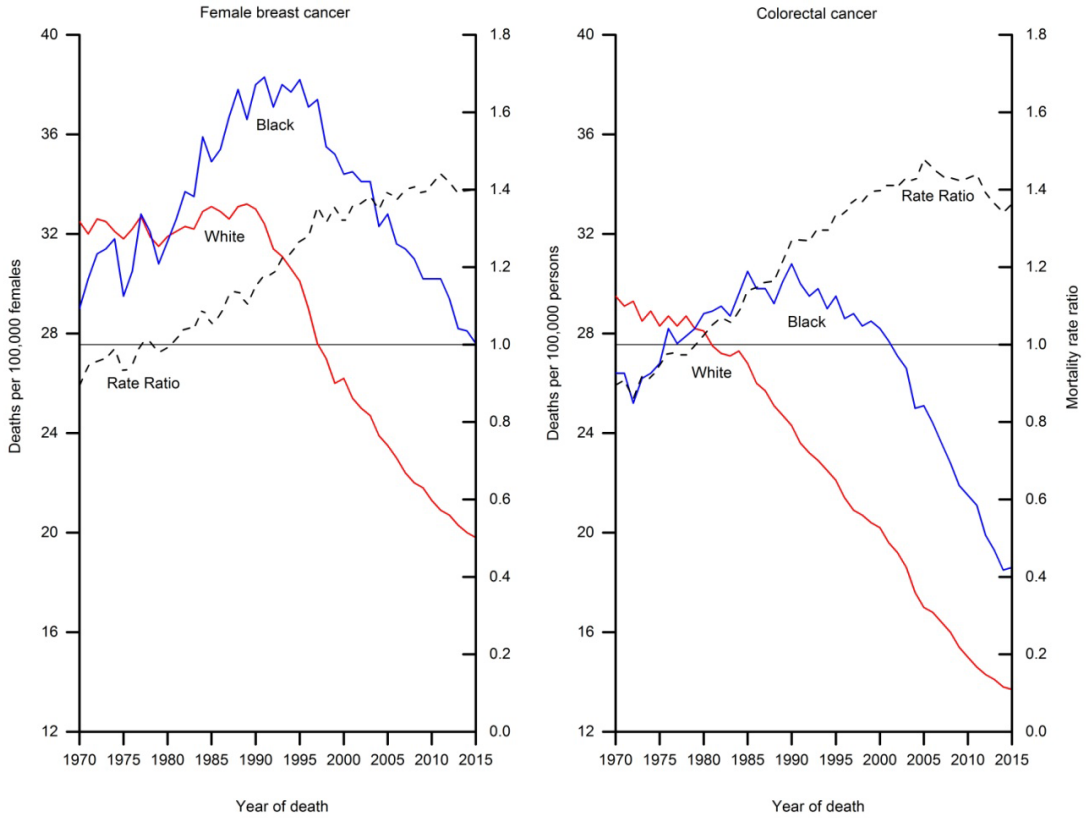

Fig. F7.1. Disparities in death rates for female breast and colorectal cancer between Black and White populations in the USA.

However, the disparity in cancer mortality with race in the USA varies substantially by state and age, partly reflecting differences in public policies that affect access to health care. For instance, the overall cancer death rate in 2015 in Blacks compared with Whites was 31% higher in those younger than 65 years but only 7% higher in those aged 65 years and older (Siegel et al., 2018), partly because of access to universal health coverage through Medicare for older adults. Similarly, the excess risk of breast cancer mortality in Black women in 2015 ranged from a non-significant 8% in Massachusetts to more than 60% in Louisiana and Mississippi (DeSantis et al., 2017). Unique among all the other states, Massachusetts implemented sweeping health-care reform in 2006, resulting in the lowest uninsured rate in the country and significant reductions in all-cause and health-care-amenable mortality (Sommers et al., 2014). Likewise, the state of Delaware almost eliminated a 50% excess in colorectal cancer mortality among Black people in less than a decade with the establishment of a comprehensive statewide colorectal cancer screening and treatment programme in 2002 (Grubbs et al., 2013). Delaware and Massachusetts serve as social laboratories, exhibiting the importance of removing barriers to primary prevention, early detection, and high-quality treatment in eliminating racial inequalities in cancer mortality.

Despite a concerted national public health effort to address racial disparities, both as a moral imperative and to reduce the overall cancer burden, several challenges remain. For instance, research on the specific mechanisms that cause cancer disparities requires high-quality data not only on race and/or ethnicity but also on the mediators of health (e.g. SES, place of birth, and comorbidities), which are lacking at the individual level in the USA. In addition, racial gaps in cancer treatment have been perpetuated by the underrepresentation of Blacks in the oncology profession and in clinical trials because of shortfalls in recruitment and participation (Smedley et al., 2003). For example, although Black men in the USA have prostate cancer mortality rates that are among the highest in the world (Siegel et al., 2018), the first prospective study of treatment for metastatic prostate cancer in Black men, specifically designed to reduce barriers to participation, was prematurely terminated because of insufficient patient accrual (Tsao et al., 2016).

Similarly to disadvantaged groups in many countries, Black people in the USA experience disparities in cancer incidence rates and outcomes largely because of deficits in

a wide array of social resources that affect health. For most cancers that are amenable to early detection and treatment, such as colorectal cancer and breast cancer, the gap in Black versus White inequalities in cancer death rates in the USA dramatically widened as a result of progress in detection and treatment. Overcoming these disparities involves reducing socioeconomic inequalities and/or weakening the link between SES and health through multipronged approaches that increase access to care. Examples of such approaches in the USA are provided by Delaware and Massachusetts, whereby racial disparities and treatment-amenable mortality were reduced by removing barriers to prevention, early detection, and treatment services. In a longitudinal study of 75 countries, Maruthappu et al. (2016) found that the main factor that protected against increased cancer mortality associated with the global economic crisis during 2008–2010 was universal health coverage. With a gross domestic product (GDP) of US$ 15 trillion, the USA has the resources to be a global leader in eliminating disparities. The Patient Protection and Affordable Care Act (PPACA), which became law in 2010 and has expanded health insurance coverage to more than 20 million previously uninsured people, predominantly low-income and minority Americans, was a step in the right direction. However, the impact of the PPACA on reducing cancer inequalities has yet to be determined, especially given uncertainties about its future in the current political climate.

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