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Southeast United States Counties in Georgia and Florida with Lower Cancer Mortality Rates in Blacks: Possible Clues to Reducing Racial Inequalities

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Abstract

Introduction: In this descriptive study we explored whether there are states and counties within the United States where blacks have lower mortality rates from cancer than whites.

Methods: We used the US Centers for Disease Control (CDC) public Wide-Ranging Online Data for Epidemiological Research (WONDER) data to explore race/ethnicity related differences in cancer mortality in states and their counties. We calculated cancer mortality rate ratios (MRR) of blacks (B) to non-Hispanic whites (W) after adjustment for age in years from 1 to 85 and the US Census Bureau to identify and compare the percent of the population of Bs for each county with B: W MRR from cancer less than 1.00.

Results: From 1999 to 2015 we identified 1484 counties that had at least 20 deaths from cancer (ICD C00 to C97) in Bs. Among these counties there were 1213 (81.7%) in which the B: W MRR for cancer was greater than 1.00 and 271 (18.3%) in which the MRR was less than 1.00. In these data Georgia (35) and Florida (22) had the largest numbers of counties with B: W MRRs for cancer that was less than 1.00.

Conclusions: Higher mortality rates from cancer in Bs compared to Ws are not inevitable. Georgia and Florida have a large number of counties where B: W MRR for cancer is less than 1.00. Georgia and Florida also have higher percentages of Bs as compared with the national average but also have higher percentages of B physicians compared with the national average. These data formulate hypotheses that require testing in analytic studies which have the potential to reduce inequalities in cancer mortality as well as total mortality between Bs and Ws.

Keywords

Southeast counties; Cancer mortality; Blacks, Whites

Introduction

From the 1950's until 2015, in the United States (US), life expectancy at birth had been increasing overall as well as among the non-Hispanic white (W) and non-Hispanic black/African-American (B) populations [1]. Nonetheless, Bs continue to experience significantly higher mortality rates than Ws in total as well as cardiovascular and cancer deaths [2,3]. Specifically, for all cancers combined, the death rate is 25% higher for Bs than for Ws [4].

In the US, B women have higher mortality rates from cancer than their W counterparts, despite lower incidence rates for certain sites, such as cervical and breast [5,6]. Similarly, B men have the highest incidence of prostate cancer and are more than twice as likely to die from this disease as W men [7].

In the US, lung cancer is the most common cause of cancer mortality and is the second most commonly diagnosed cancer in both men and women [8,9]. B men have statistically significant increases in incidence and mortality ratios of 1.18 and 1.20, respectively, compared to W men [9].

The incidence of colorectal cancer has significantly declined since 1985 from approximately 80 new diagnosis per 100,000 in 1985 to less than 50 in 2010. These improvements in incidence rates in Ws have not occurred in Bs where incidence rates have remained unchanged [8,10]. As a consequence, the ratio of incidence rates between Bs and Ws for colorectal cancer has increased dramatically over the past few

decades. For example, B men experience a 50% higher likelihood of mortality due to colorectal cancer compared to W men [8,9]. Such inequalities are present for most cancer sites in incidence as well as mortality [6,9].

In this descriptive study we explored whether there are states and counties within the US where Bs have lower mortality rates from cancer than Ws and formulated hypotheses of potential clinical and public health importance.

Materials and Methods

We used the US Centers for Disease Control (CDC) public Wide-Ranging Online Data for Epidemiological Research (WONDER) data to explore race/ethnicity related differences in cancer mortality in US states and their counties.

We calculated Mortality Rate Ratios (MRR) for cancer mortality comparing Bs and Ws after adjustment for age in years from 1 to 85.

We divided the crude number of counties by the total number of counties in each state to find the percent of total counties where B; W MRR for cancer is less than 1.00 and compared the data by state. For example, Delaware has 3 counties and Texas has 254. Incorporated cities, boroughs, and parishes that qualify as county equivalents on US Census data were included in the calculation for percent total counties. In addition, the Commonwealth of Virginia has 95 counties and 38 independent cities for a total of 133 county equivalents. Alaska and Louisiana do not have counties but have boroughs and parishes respectively that were used in the calculation as county equivalents.

We used the US Census Bureau to identify the percent of the population of black Americans for each county with B: W MRR for cancer less than 1.00. We compared this percentage with the each respective state average percent B population to determine whether the counties with B: W MRR <1.00 had typically more or less Bs when compared with the state average.

The analyses of these descriptive data were classified as exempt by the Institutional Review Board of the Baylor College of Medicine (Table 1).

Results

Overall cancer incidence and death rates across all sites by racial and ethnic groups are included in Table 1. From 1999 to 2015 we identified 1484 counties that had at least 20 deaths from cancer (ICD C00 to C97) in Bs. Among these counties there were 1213 (81.7%) in which the B: W MRR for cancer was greater than 1.00 and 271 (18.3%) in which the B: W MRR was less than 1.00. In these data Georgia (35) and Florida (22) had the largest numbers

Table 1: Overall Cancer Incidence and Death Rates.

Racial/Ethnic Group	All Sites	
	Incidence	Death
All	470.1	192.7
African American/Black	504.1	238.8
Asian/Pacific Islander	314.9	115.5
Hispanic/Latino	356	129.1
American Indian/Alaska Native	297.6	160.4
White	477.5	190.7

*Statistics are for 2000-2004, age-adjusted to the 2000 US standard million population, and represent the number of new cases of invasive cancer (1) and deaths (2) per year per 100,000 men and women. Source: NCI Center to Reduce Cancer Disparities.

of counties with B: W MRR from cancer less than 1.00 (Table 2).

The states with the highest percentages of counties with B: W MRR for cancer less than 1.00 were Rhode Island (60%), Massachusetts (50%), Hawaii (40%), Delaware (33%), Florida (33%), Connecticut (25%), and Georgia (22%) (Table 3, Figure 1).

Of 271 total counties with B: W MRR for cancer less than 1.00, 207 (76%) had B populations less than the average for the state. Only 64 (24%) counties had percent B populations greater than or equal to the respective state average percent Bs (Table 4).

Discussion

These county level data provide reassuring evidence that higher mortality rates from cancer in Bs compared to Ws are not inevitable. It is interesting to note that both Georgia and Florida have a large number of counties where B: W MRR for cancer is less than 1.00. In this regard it is also interesting to note that Georgia and Florida also have higher percentages of black residents as compared with the national average [11]. In addition, however, Georgia and Florida also have higher percentages of B physicians compared with the national average [12]. It has been reported that patients are more likely to seek care as well as be more highly satisfied with care received from a physician of their own race [12]. In another study of health satisfaction and perceived health status, whether one's physician is of a similar or dissimilar race was less important than socioeconomic status and access to quality health care [13].

The vast majority, 207 of the 271 counties (76%) with B: W MRRs for cancer <1.00 have B populations smaller than that of their respective state average. This observation contributes to the formulation of the hypothesis that access to medical care for B patients may be somewhat improved in such counties. Support for this hypothesis derives from observations among patients with cervical cancer in California [14]. In this study, the higher population density of Bs living in the community was correlated with higher mortality rates. The authors speculated that higher population densities of B may be a marker for poverty, discrimination, along with several other socio-economic factors that have been associated with poorer outcomes.

One major socio-economic factor that requires further investigation is income inequalities. It is plausible that income inequalities contribute to increased cancer mortality. This possibility has been observed by other investigators [15]. In addition, it may be of interest to investigate whether higher graduation rates are associated increased B: W inequalities in mortality.

In this study, we extend previous observations that variations in mortality within states are detectable at the county level [15,16]. We believe that the current descriptive data showing counties, especially in Georgia and Florida, with higher rates of mortality from cancer in whites may provide important clues to reduce the overall inequalities in B:W cancer mortality nationwide. It is tempting to speculate that differences in treatment, prevention, or access to care, as well as other social and cultural determinants may be playing a role since known carcinogenic factors such as smoking and obesity do not appear to increase mortality in Bs disproportionately to Ws.

For decades in the US there have been racial inequalities in the burden of cancer incidence and mortality between Bs and Ws. The potential factors contributing to these inequalities have been the subject of much research over the past several decades. The wide range of potential factors include, but is not limited to, socioeconomic status, as well as unequal access to care, quality of care, and lack of diversity in medical providers [6].

Table 2: African American and White Cancer Related Deaths by County and Relative Risk.

County	Race	Deaths	Crude Rate	Age Adjusted Rate	Race	Deaths	Crude Rate	Age Adjusted Rate	B:W MRR
Hillsborough County, NH	Black	70	54.43	99.7	White	11448	191.3	180.56	0.552171023
Nye County, NV	Black	26	172.23	135.28	White	2161	392	228.55	0.591905491
Minnehaha County, SD	Black	33	34.32	116.45	White	4835	197.99	191.01	0.609653945
Mohave County, AZ	Black	44	130.91	136.1	White	9831	381.69	215.16	0.632552519
Hendricks County, IN	Black	57	58.58	115	White	3485	171.09	180.62	0.636695825
Stearns County, MN	Black	27	41.32	102.16	White	3670	163.11	160.41	0.636868026
Long County, GA	Black	51	92.88	130.77	White	213	155.15	205.14	0.637467096
Wakulla County, FL	Black	67	105.19	141.45	White	844	219.08	218.28	0.648020891
Thurston County, WA	Black	86	64.04	126.29	White	7271	221.34	187.78	0.672542337
Monroe County, PA	Black	271	91.82	142.07	White	5064	248.96	209.72	0.677427046
Comal County, TX	Black	22	83.84	113.52	White	2866	236	167.48	0.677812276
Des Moines County, IA	Black	25	70.54	130.69	White	1728	276.46	191.18	0.683596611
Chattahoochee County, GA	Black	33	61.13	156.49	White	89	66.86	228.06	0.686179076
Le Flore County, OK	Black	31	151.2	161.06	White	1965	305.01	233.95	0.6884377
Osage County, OK	Black	116	123.51	130.37	White	1389	255.51	186.76	0.698061683
Osceola County, FL	Black	394	105.23	137.25	White	4398	235.36	195.46	0.702189706
Frederick County, VA	Black	40	80.72	139.09	White	2299	212.11	196.46	0.707981268
Boulder County, CO	Black	27	50.99	100.02	White	5293	130.32	140.55	0.711632871
Cheatham County, TN	Black	20	172.37	165.08	White	1289	211.28	228.78	0.721566571
Fairfield County, OH	Black	71	52.58	137.01	White	4298	200.96	189.69	0.722283726
Alleghany County, VA	Black	29	212.33	143.64	White	746	296	198.5	0.723627204
Sutter County, CA	Black	35	103.16	141.22	White	2134	257.91	194.02	0.727863107
Lake County, TN	Black	45	113.94	190.85	White	314	349.14	261.81	0.728963752
Bradley County, TN	Black	76	105.35	145.28	White	3231	222.76	197.06	0.73723739
Porter County, IN	Black	46	68.58	145.62	White	5030	213.13	196.28	0.741899327
Wheeler County, GA	Black	39	91.66	127.08	White	152	213.68	171.21	0.742246364
Wood County, OH	Black	20	41.16	138.12	White	3751	194.18	186.04	0.742420985
Windham County, CT	Black	24	60.83	145.5	White	3846	227.37	195.24	0.745236632
Clay County, FL	Black	232	85.32	157	White	5181	218.84	207.74	0.755752383
San Jacinto County, TX	Black	82	171.13	151.14	White	944	283.4	199.02	0.759421164
Clackamas County, OR	Black	43	68.51	134.89	White	11297	209.87	176.58	0.763903047
Clinton County, IA	Black	20	83.84	149.35	White	2044	262.64	194.79	0.766723138
Forsyth County, GA	Black	35	54.9	120.05	White	2754	128.73	156.3	0.768074216
Whatcom County, WA	Black	26	64.89	131.18	White	5364	197.76	170.7	0.768482718
Tyrrell County, NC	Black	63	223.47	197.04	White	143	371.49	253.63	0.776879707

Cumberland County, ME	Black	61	58.64	147.1	White	10074	229.67	188.95	0.778512834
Greene County, MS	Black	57	94.09	158.96	White	361	215.81	203.94	0.779444935
Clark County, WA	Black	119	74.73	150.03	White	11269	196.28	192.3	0.780187207
Portage County, OH	Black	93	81.94	153.51	White	5055	204.21	195.78	0.784094392
Tippecanoe County, IN	Black	51	46.73	151.64	White	3997	173.61	192.43	0.788026815
Norfolk County, MA	Black	565	98.04	145.04	White	22367	239.14	183.46	0.790581053
Butler County, PA	Black	27	76.33	144.24	White	6633	225.04	181.29	0.795631309
Charlton County, GA	Black	59	95.55	151.51	White	279	209.39	190.04	0.79725321
Kent County, RI	Black	39	88.88	160.33	White	6917	263.43	199.62	0.803176034
Middlesex County, MA	Black	1065	95.48	146.38	White	44667	221.08	181.12	0.808193463
Schuylkill County, PA	Black	25	37.71	165.98	White	7261	308.71	204.88	0.810132761
Washington County, RI	Black	26	85.62	142.96	White	4299	215.75	176.45	0.81020119
Steuben County, NY	Black	39	134.94	160.69	White	3990	251.47	197.91	0.811934718
Warren County, OH	Black	65	58.44	145.55	White	5141	170.27	178.98	0.813219354
Roanoke County, VA	Black	94	124.02	136.51	White	3214	233.94	167.58	0.814596014
Calhoun County, GA	Black	108	163.87	190.15	White	119	318.24	231.4	0.821737252
Howard County, TX	Black	34	107.3	157.1	White	879	276.4	191.05	0.822297828
Limestone County, AL	Black	195	114.12	144.65	White	2017	193.04	175.69	0.823325175
Brown County, WI	Black	38	42.79	140.02	White	6381	181.81	169.37	0.826710752
Hampshire County, MA	Black	48	70.11	148.17	White	4786	205.04	178.98	0.827857861
Baker County, GA	Black	55	182.29	165.74	White	77	261.11	200.09	0.828327253
Coryell County, TX	Black	104	44.61	173.53	White	1302	167.33	209.08	0.82996939
Franklin County, WA	Black	33	130.31	158.05	White	1067	205.92	190.12	0.831317063
Hawaii County, HI	Black	32	105.9	138.14	White	2373	227.64	165.03	0.837059928
Atchison County, KS	Black	25	150.94	173.63	White	671	262.33	207.05	0.838589713
Luzerne County, PA	Black	108	72.61	165.51	White	14692	300.03	196.86	0.840749771
Williamson County, IL	Black	43	103.05	178.69	White	2869	283.24	212.18	0.842162315
Rockland County, NY	Black	700	117.97	139.46	White	7051	203.65	165.15	0.844444444
McIntosh County, OK	Black	33	231.25	172.29	White	911	369.82	203.68	0.845885703
Adams County, CO	Black	177	78.76	158.95	White	7107	177.8	187.57	0.847416964
Kendall County, IL	Black	50	65.87	150.8	White	1734	142.95	177.89	0.84771488
Charlotte County, FL	Black	292	205.36	140.79	White	9117	390.51	165.54	0.850489308
Chattooga County, GA	Black	71	148.16	181.36	White	962	263.91	213.21	0.850616763
Johnson County, GA	Black	73	126.51	148.99	White	244	243.88	175.08	0.850982408
Clay County, MO	Black	107	63.25	164.93	White	6038	197.38	193.63	0.851779166
Marion County, OH	Black	57	79.53	186.9	White	2665	263.31	218.71	0.854556262
Clayton County, GA	Black	2158	80.27	179.55	White	2574	290.93	209.91	0.855366586

Marlboro County, SC	Black	476	193.78	210.44	White	653	322.35	245.76	0.856282552
Lee County, GA	Black	97	117	170.49	White	547	154.38	198.92	0.857078222
Augusta County, VA	Black	56	114.03	152.76	White	2500	224.18	178.18	0.857335279
Montgomery County, KY	Black	33	241.49	184.31	White	927	232.78	214.92	0.857574912
Benton County, AR	Black	21	47.96	149.67	White	5561	205.93	174.43	0.858051941
Hernando County, FL	Black	229	180.2	172.54	White	9024	396.36	200.91	0.858792494
Pierce County, GA	Black	59	206.33	196.35	White	645	255.71	228.21	0.860391744
Chittenden County, VT	Black	32	63.75	149.89	White	4088	169.46	174.08	0.861040901
Spokane County, WA	Black	124	72.35	160.61	White	14415	212.11	186.47	0.861318175
Laramie County, WY	Black	40	90.6	155.71	White	2441	199.42	180.29	0.863664097
Wilkinson County, GA	Black	109	167.79	175.67	White	259	272.25	203.33	0.863964983
Roane County, TN	Black	58	221.29	181.54	White	2518	296.08	209.97	0.864599705
George County, MS	Black	49	156.46	200.66	White	738	232.02	231.98	0.864988361
Levy County, FL	Black	125	192.8	205.48	White	1939	363.18	237.47	0.865288247
Saline County, AR	Black	68	93	156.21	White	3268	214.1	180.23	0.86672585
Snohomish County, WA	Black	191	59.59	158.63	White	16549	183.28	182.77	0.867921431
Kerr County, TX	Black	25	176.33	159.61	White	2316	389.01	183.62	0.869240823
Pemiscot County, MO	Black	140	165.88	210.03	White	702	314.54	241.49	0.869725454
LaSalle County, IL	Black	23	58.17	181.58	White	4949	290.85	208.46	0.871054399
Highland County, OH	Black	22	164.18	184.14	White	1724	248.23	211.33	0.871338665
Sussex County, NJ	Black	46	110.76	167.58	White	4412	195.56	192.28	0.871541502
Broward County, FL	Black	8005	109.28	161.86	White	45317	319.17	185.57	0.872231503
Humboldt County, CA	Black	25	75.2	173.74	White	4384	243.81	198.9	0.873504274
Armstrong County, PA	Black	20	163.83	163.36	White	3085	266.93	186.99	0.873629606
Washington County, FL	Black	92	158.94	194.44	White	918	293.58	222.45	0.874084064
Paulding County, GA	Black	222	73.59	168.39	White	2234	137.45	192.63	0.874162903
Placer County, CA	Black	93	111.31	151.9	White	9756	227.21	173.75	0.874244604
Bristol city, VA	Black	32	183.34	211.16	White	980	362.15	240.93	0.876437139
Hyde County, NC	Black	73	228.52	197.08	White	191	324.34	224.26	0.878801391
Henry County, GA	Black	858	91.18	170.07	White	3096	173.52	193.36	0.879551096
Wayne County, PA	Black	21	90.51	180.6	White	2370	297.12	204.79	0.881878998
Franklin County, KY	Black	90	102.74	192.25	White	1856	263.81	217.9	0.882285452
Yuba County, CA	Black	52	118.85	203.65	White	1803	251.01	230.62	0.883054375
Sevier County, AR	Black	27	210.1	185.71	White	514	282.64	210.28	0.883155792
Trousdale County, TN	Black	38	283.79	219.65	White	313	282.56	248.57	0.883654504
Pasco County, FL	Black	350	124.17	174.26	White	20798	344.35	197.08	0.884209458
Chaves County, NM	Black	34	170.86	176.02	White	1664	331.85	198.79	0.885457015

Washington County, MN	Black	64	48.33	148.57	White	5234	155.1	167.54	0.886773308
Essex County, MA	Black	324	92.09	165.52	White	24759	252.09	186.55	0.887268829
Bradford County, FL	Black	116	121.36	188.72	White	954	275.3	212.29	0.888972632
Sullivan County, NY	Black	164	146.52	184.51	White	2731	276.2	207.17	0.890621229
Plymouth County, MA	Black	735	109.96	172.52	White	16384	228.33	193.67	0.890793618
Crawford County, GA	Black	92	185.59	185.69	White	328	210.07	208.3	0.891454633
Henry County, KY	Black	26	299.5	206.87	White	633	262.93	232.03	0.891565746
Wood County, WV	Black	23	116.36	172.34	White	3569	251.67	193.16	0.892213709
Barren County, KY	Black	55	185.57	185.18	White	1640	257.05	207.48	0.892519761
Boone County, KY	Black	36	76.69	176.52	White	2773	165.28	197.58	0.893410264
Okeechobee County, FL	Black	65	122.1	198.43	White	1531	348.1	221.59	0.895482648
Cass County, MO	Black	52	101.99	171.94	White	3103	214.26	191.28	0.898891677
Lawrence County, AL	Black	146	205.87	197.88	White	1190	260.07	219.07	0.903272926
Prince George's County, MD	Black	13087	141.47	190.56	White	7615	292.73	210.35	0.905918707
Santa Cruz County, CA	Black	44	80.25	147.64	White	5534	200.06	162.74	0.907213961
St. Charles County, MO	Black	193	82.91	161.64	White	8700	168.2	178.14	0.907376221
Collier County, FL	Black	271	85.29	125.02	White	11091	313.59	137.74	0.907652098
Logan County, WV	Black	46	305.71	235.79	White	1876	316.59	259.76	0.907722513
Douglas County, GA	Black	538	78.61	177.33	White	2245	197.4	195.28	0.908080705
Lebanon County, PA	Black	37	99.75	168.32	White	5108	265.07	185.35	0.908119773
Suwannee County, FL	Black	151	184.36	198.91	White	1736	328.01	219.03	0.908140437
Providence County, RI	Black	950	109.44	177.16	White	20242	272.03	194.94	0.908792449
Perry County, MS	Black	77	179.7	208.98	White	412	259.66	229.64	0.910033095
Allegany County, MD	Black	56	61.6	173.68	White	3154	278.5	190.72	0.910654362
Prairie County, AR	Black	44	222.26	206.02	White	428	333.62	226.06	0.911350969
Baker County, FL	Black	77	130.67	202.66	White	766	216.9	222.3	0.911650922
Waukesha County, WI	Black	52	64.68	154.79	White	12043	203.46	169.67	0.912300348
Onslow County, NC	Black	528	111.35	189.69	White	2815	144.85	207.82	0.912761043
Stafford County, VA	Black	282	86.58	176.46	White	2076	143.31	193.24	0.913164976
Brevard County, FL	Black	1421	166.02	180.94	White	23359	326.68	197.97	0.913976865
Dakota County, MN	Black	148	51.13	151.86	White	8434	151.55	166.14	0.914048393
Hoke County, NC	Black	405	159.31	208.88	White	526	175.89	228.24	0.915177007
Harlan County, KY	Black	41	308.64	254.88	White	1605	329.64	278.49	0.915221372
Ross County, OH	Black	123	142.13	201.27	White	2851	243.4	219.57	0.916655281
Seneca County, OH	Black	28	113.49	175.63	White	2084	234.01	191.59	0.916697114
Warren County, NJ	Black	67	116.25	175.51	White	3711	233.31	191.31	0.917411531
New London County, CT	Black	279	99.71	163.75	White	8387	227.01	178.32	0.918292956

Pamlico County, NC	Black	115	237.6	173.18	White	495	304.18	188.56	0.918434451
Queens County, NY	Black	11353	156.54	160.85	White	33321	291.41	174.91	0.919615802
Worcester County, MA	Black	396	81.35	174.42	White	25293	229.01	189.23	0.921735454
Montgomery County, GA	Black	57	142.63	188.48	White	227	223.74	204.35	0.922339124
Guadalupe County, TX	Black	162	133.29	161.8	White	2387	214.05	175.23	0.923357873
Ozaukee County, WI	Black	27	134.5	158.7	White	2874	211.4	171.73	0.92412508
Flagler County, FL	Black	371	256.97	170.23	White	3699	341.46	184.17	0.924309062
Quitman County, GA	Black	46	228.49	207.92	White	93	441.28	224.84	0.924746486
Manassas Park city, VA	Black	30	112.94	163.94	White	132	122.74	177.11	0.925639433
Webster County, IA	Black	21	76.95	178.88	White	1594	269.21	193.18	0.925975774
Pueblo County, CO	Black	72	145.91	160.4	White	3777	261.35	173.19	0.926150471
Calloway County, KY	Black	24	96.52	180.12	White	1311	233.31	193.95	0.928692962
Denton County, TX	Black	474	58.78	151.25	White	8280	120.91	162.74	0.929396584
Clinton County, NY	Black	24	44.46	178.3	White	2689	212.9	191.54	0.930876057
Anoka County, MN	Black	93	43.15	164.94	White	7359	153.43	177.18	0.930917711
Jeff Davis County, GA	Black	68	190.41	198.01	White	430	241.2	212.67	0.931066911
Eaton County, MI	Black	121	102.09	164.36	White	3239	206.88	176.26	0.9324861
Massac County, IL	Black	32	200.19	177.13	White	634	271.04	189.9	0.932754081
El Paso County, TX	Black	414	112.66	177.14	White	4743	251.54	189.82	0.933199874
Licking County, OH	Black	108	118.9	184.72	White	5413	214.43	197.93	0.933259233
Cherokee County, GA	Black	120	71.6	154.09	White	3853	141.74	164.95	0.934161867
Ulster County, NY	Black	227	122.42	178.03	White	6317	246.66	190.35	0.935277121
Calhoun County, FL	Black	52	151.63	189.55	White	489	264.49	202.53	0.935910729
Amelia County, VA	Black	143	279.32	208.28	White	394	265.19	222.12	0.937691338
Webster County, KY	Black	27	252.64	207.86	White	581	275.65	221.27	0.939395309
Greene County, TN	Black	44	174.13	198.61	White	2958	277.31	211.26	0.940121178
Madison County, TX	Black	60	126.64	181.98	White	390	292.77	193.2	0.941925466
Dooly County, GA	Black	143	127.79	146.5	White	225	225.95	155.47	0.942303981
Sabine County, TX	Black	36	240.35	195.41	White	599	384.52	207.15	0.943326092
Rockdale County, GA	Black	522	101.23	176.92	White	1606	233.77	187.47	0.943724329
Dare County, NC	Black	25	150.51	177.62	White	1183	232.47	188.2	0.943783209
Orange County, FL	Black	4176	116.09	182.42	White	18472	203.02	193.01	0.945132377
Alexander County, NC	Black	61	179.33	172.65	White	1166	215.52	182.48	0.946131083
Spotsylvania County, VA	Black	348	121.02	176.09	White	2478	170.03	185.99	0.946771332
Polk County, TX	Black	154	173.7	222.69	White	2157	385.53	235.16	0.946972274
Butts County, GA	Black	181	171.24	212.03	White	638	247.62	223.42	0.949019783
Jasper County, MO	Black	43	102.01	192.06	White	3905	232.97	202.21	0.949804659

Orange County, NY	Black	721	126.42	185.69	White	9305	211.41	195.38	0.95040434
Geauga County, OH	Black	35	154.26	154.4	White	2914	192.32	162.44	0.950504802
Otero County, NM	Black	52	126.8	174.18	White	1476	254.44	183.19	0.950816093
Clark County, NV	Black	4336	137.37	191.46	White	39441	249.99	201.35	0.95088155
Citrus County, FL	Black	136	215.43	191.69	White	9009	437.05	201.27	0.952402246
Columbia County, GA	Black	306	108.29	165.08	White	2362	161.42	173.09	0.953723496
Franklin County, FL	Black	42	165.16	211.98	White	487	319.86	222.19	0.954048337
Pulaski County, MO	Black	46	45.88	209.43	White	1002	167.21	219.49	0.954166477
Kent County, DE	Black	912	153.41	198.81	White	4283	247.5	208.29	0.954486533
Gwinnett County, GA	Black	1685	64.02	161.53	White	9357	146.45	169.19	0.954725457
Mingo County, WV	Black	30	292.6	237.51	White	1217	277.52	248.74	0.954852456
Morris County, NJ	Black	362	143.93	168.89	White	13965	219.12	176.31	0.957915036
Platte County, MO	Black	60	77.73	162.38	White	2115	170.5	169.46	0.958220229
Marion County, WV	Black	69	198.72	203.67	White	2596	289.02	212.52	0.958356861
Hickman County, TN	Black	25	129.7	211.3	White	924	248.48	220.43	0.958580955
Pontotoc County, MS	Black	98	140.5	172.93	White	809	206.07	180.4	0.958592018
Botetourt County, VA	Black	34	177.39	153.87	White	1031	200.8	160.33	0.959708102
Siskiyou County, CA	Black	27	218.04	193.1	White	2008	325.24	201.13	0.960075573
Marion County, FL	Black	1141	182.22	193.29	White	15507	389.16	200.83	0.962455808
Union County, SC	Black	316	205.2	206.79	White	1008	308.37	214.84	0.962530255
McHenry County, IL	Black	37	68.81	189.62	White	7617	179.82	196.82	0.963418352
Cullman County, AL	Black	26	160.74	191.94	White	3108	247.11	199.09	0.964086594
Vernon Parish, LA	Black	125	92.71	214.6	White	1225	193.95	222.56	0.964234364
Henry County, VA	Black	457	218.23	188.91	White	1959	291.72	195.84	0.964613971
Covington County, MS	Black	180	156.72	192.71	White	556	270.52	199.74	0.964804246
Ben Hill County, GA	Black	204	203.87	233.77	White	560	322.68	242.15	0.965393351
Bronx County, NY	Black	12385	170.59	199.12	White	10787	375.07	206.05	0.966367387
Hamilton County, IN	Black	99	69.94	153.43	White	4662	126.25	158.52	0.967890487
Talbot County, GA	Black	159	238.54	220.55	White	142	324.42	227.83	0.96804635
Suffolk County, MA	Black	4380	164.7	204.72	White	14228	234.09	211.47	0.968080579
Conway County, AR	Black	88	205.21	179.02	White	728	248.83	184.84	0.968513309
Prince William County, VA	Black	1011	81.82	170.81	White	4569	137.41	176.23	0.969244737
DuPage County, IL	Black	539	80.08	169.91	White	22293	197.26	175.3	0.96925271
Sullivan County, TN	Black	103	175.82	196.89	White	6980	279.93	203.05	0.969662645
Jackson County, AR	Black	91	173.95	222.95	White	767	318.01	229.75	0.970402612
Saratoga County, NY	Black	70	116.21	178.77	White	6990	205.81	184.18	0.970626561
Liberty County, GA	Black	416	92.48	197.35	White	605	129.38	202.5	0.974567901

Hawkins County, TN	Black	32	216.41	199.7	White	2290	252.95	204.8	0.975097656
Jefferson County, MO	Black	46	122.16	206.22	White	6722	195.55	211.19	0.976466689
Stanislaus County, CA	Black	316	129.67	197.09	White	10890	253.02	201.73	0.976998959
Clinch County, GA	Black	55	167.14	225.85	White	212	272.11	230.98	0.977790285
Lincoln County, KY	Black	30	283.5	222.86	White	1016	260.17	227.8	0.978314311
Honolulu County, HI	Black	248	53.02	157.91	White	5814	163.35	161.33	0.978801215
Franklin County, AL	Black	48	220	213.65	White	1258	287.24	217.81	0.980900785
Nassau County, NY	Black	3530	144.7	165.03	White	38470	248.5	168.24	0.980920114
Allen Parish, LA	Black	136	131.57	179.83	White	622	205.81	183.31	0.981015766
Fayette County, PA	Black	212	197.22	198.91	White	6485	291.19	202.6	0.981786772
Monongalia County, WV	Black	45	73.66	176.3	White	2282	161.64	179.45	0.982446364
Carson City, NV	Black	30	159.08	210.36	White	2270	331.92	214.03	0.982852871
Camden County, GA	Black	196	121.37	182.51	White	818	139.55	185.67	0.982980557
Crenshaw County, AL	Black	128	223.57	198.33	White	463	274	201.57	0.983926179
Berkeley County, SC	Black	1063	145.81	188.8	White	3191	172.07	191.86	0.98405087
Wilcox County, GA	Black	90	167.58	205.38	White	260	286.39	208.68	0.984186314
Blount County, AL	Black	24	164.63	186.17	White	1895	225.32	188.99	0.985078576
Twiggs County, GA	Black	146	215.88	198.92	White	224	249.01	201.87	0.985386635

Table 3: Counties where B:W RR for Cancer mortality is <1 shown in crude number of counties and percent of total counties per state.

State	Number of Counties	Percent of Total Counties
Rhode Island	3	60.00
Massachusetts	7	50.00
Hawaii	2	40.00
Deleware	1	33.33
Florida	22	32.84
Connecticut	2	25.00
Georgia	35	22.01
New York	11	17.74
Nevada	3	17.65
Maryland	4	16.67
California	9	15.52
Washington	6	15.38
New Jersey	3	14.29
Arizona	2	13.33
Ohio	11	12.50
Pennsylvania	8	11.94
Tennessee	10	10.53
New Hampsire	1	10.00

Virginia	13	9.77
West Virginia	5	9.09
New Mexico	3	9.09
North Carolina	9	9.00
Alabama	6	8.96
South Carolina	4	8.70
Kentucky	10	8.33
Arkansas	6	8.00
Mississippi	6	7.32
Vermont	1	7.14
Missouri	8	6.96
Illinois	7	6.86
Oklahoma	5	6.49
Maine	1	6.25
Texas	15	5.91
Alaska	1	5.00
Colorado	3	4.69
Minnesota	4	4.60
Indiana	4	4.35
Wyoming	1	4.35
Wisconsin	3	4.17
Louisiana	2	3.13
Iowa	3	3.03
Oregon	1	2.78
South Dakota	1	1.52
Michigan	1	1.20
Nebraska	1	1.08
Kansas	1	0.95
Utah	0	0.00
North Dakota	0	0.00
Montana	0	0.00
Idaho	0	0.00

Table 4: Percent Population African American of each county compared to state average.

County	B:W MRR	Percent County that is African American	Percent African American By Individual State	African American Population in County Compared to State Average (percent difference)
Cullman County, AL	0.964086594	1.3	26.8	0.05
DeSoto County, MS	0.992648454	2	37.7	0.05
Blount County, AL	0.985078576	1.6	26.8	0.06
Armstrong County, PA	0.873629606	0.9	11.8	0.08
Hawkins County, TN	0.975097656	1.4	17.1	0.08

Steuben County, NY	0.811934718	1.6	17.7	0.09
Jefferson County, MO	0.976466689	1.1	11.8	0.09
Geauga County, OH	0.950504802	1.3	12.8	0.10
Butler County, PA	0.795631309	1.2	11.8	0.10
Saratoga County, NY	0.970626561	1.8	17.7	0.10
Cheatham County, TN	0.721566571	1.8	17.1	0.11
McHenry County, IL	0.963418352	1.6	14.7	0.11
Medina County, OH	0.987838617	1.4	12.8	0.11
Forsyth County, GA	0.768074216	3.6	32	0.11
Highland County, OH	0.871338665	1.5	12.8	0.12
Benton County, AR	0.858051941	1.9	15.7	0.12
Dare County, NC	0.943783209	2.7	22.2	0.12
Clermont County, OH	0.998368429	1.6	12.8	0.13
Greene County, TN	0.940121178	2.2	17.1	0.13
Sullivan County, TN	0.969662645	2.3	17.1	0.13
Haralson County, GA	0.997781763	4.8	32	0.15
Kerr County, TX	0.869240823	1.9	12.6	0.15
Sussex County, NJ	0.871541502	2.3	15	0.15
Roane County, TN	0.864599705	2.7	17.1	0.16
Botetourt County, VA	0.959708102	3.2	19.8	0.16
Washington County, RI	0.81020119	1.4	8.1	0.17
Franklin County, AL	0.980900785	4.8	26.8	0.18
Comal County, TX	0.677812276	2.3	12.6	0.18
Citrus County, FL	0.952402246	3.1	16.8	0.18
LaSalle County, IL	0.871054399	2.8	14.7	0.19
Jasper County, MO	0.949804659	2.3	11.8	0.19
Hardin County, TN	0.989784999	3.4	17.1	0.20
Seneca County, OH	0.916697114	2.6	12.8	0.20
George County, MS	0.864988361	7.9	37.7	0.21
Cherokee County, GA	0.934161867	6.8	32	0.21
Humboldt County, CA	0.873504274	1.4	6.5	0.22
Santa Cruz County, CA	0.907213961	1.4	6.5	0.22
Augusta County, VA	0.857335279	4.3	19.8	0.22
Wood County, OH	0.742420985	2.8	12.8	0.22
Frederick County, VA	0.707981268	4.4	19.8	0.22
Waukesha County, WI	0.912300348	1.5	6.6	0.23
Ozaukee County, WI	0.92412508	1.5	6.6	0.23

Carson City, NV	0.982852871	2.2	9.6	0.23
Siskiyou County, CA	0.960075573	1.5	6.5	0.23
Alleghany County, VA	0.723627204	4.6	19.8	0.23
Boulder County, CO	0.711632871	1.1	4.5	0.24
Mohave County, AZ	0.632552519	1.2	4.9	0.24
Hickman County, TN	0.958580955	4.2	17.1	0.25
Morris County, NJ	0.957915036	3.7	15	0.25
Kent County, RI	0.803176034	2	8.1	0.25
Harlan County, KY	0.915221372	2.1	8.3	0.25
Windham County, CT	0.745236632	3	11.8	0.25
Clinton County, NY	0.930876057	4.5	17.7	0.25
Alexander County, NC	0.946131083	5.8	22.2	0.26
Johnson County, TX	0.998915241	3.3	12.6	0.26
Alleghany County, MD	0.910654362	8.1	30.7	0.26
Schuylkill County, PA	0.810132761	3.2	11.8	0.27
Pierce County, GA	0.860391744	8.8	32	0.28
Placer County, CA	0.874244604	1.8	6.5	0.28
Lincoln County, KY	0.978314311	2.3	8.3	0.28
Sevier County, AR	0.883155792	4.4	15.7	0.28
Warren County, OH	0.813219354	3.6	12.8	0.28
Bristol city, VA	0.876437139	5.6	19.8	0.28
Bradley County, TN	0.73723739	4.9	17.1	0.29
Lebanon County, PA	0.908119773	3.4	11.8	0.29
Whatcom County, WA	0.768482718	1.2	4.1	0.29
Des Moines County, IA	0.683596611	5.8	19.8	0.29
Le Flore County, OK	0.6884377	2.3	7.8	0.29
Roanoke County, VA	0.814596014	6	19.8	0.30
Licking County, OH	0.933259233	3.9	12.8	0.30
Chattooga County, GA	0.850616763	10	32	0.31
Williamson County, IL	0.842162315	4.6	14.7	0.31
Wayne County, PA	0.881878998	3.7	11.8	0.31
El Paso County, TX	0.933199874	4	12.6	0.32
Warren County, NJ	0.917411531	4.8	15	0.32
Cass County, MO	0.898891677	3.9	11.8	0.33
Wood County, WV	0.892213709	1.2	3.6	0.33
Hernando County, FL	0.858792494	5.7	16.8	0.34
Nye County, NV	0.591905491	3.3	9.6	0.34

Montgomery County, KY	0.857574912	2.9	8.3	0.35
Henry County, KY	0.891565746	2.9	8.3	0.35
Pasco County, FL	0.884209458	5.9	16.8	0.35
Portage County, OH	0.784094392	4.5	12.8	0.35
DuPage County, IL	0.96925271	5.2	14.7	0.35
Bucks County, PA	0.989718203	4.2	11.8	0.36
Charlotte County, FL	0.850489308	6	16.8	0.36
Hawaii County, HI	0.837059928	0.8	2.2	0.36
Washington County, MD	0.99547817	11.4	30.7	0.37
Hampshire County, MA	0.827857861	3.2	8.6	0.37
Massac County, IL	0.932754081	5.8	14.7	0.39
Ulster County, NY	0.935277121	7	17.7	0.40
Boone County, KY	0.893410264	3.3	8.3	0.40
Fayette County, PA	0.981786772	4.7	11.8	0.40
Sutter County, CA	0.727863107	2.6	6.5	0.40
Porter County, IN	0.741899327	3.9	9.7	0.40
Lawrence County, AL	0.903272926	10.9	26.8	0.41
St. Charles County, MO	0.907376221	4.8	11.8	0.41
Pontotoc County, MS	0.958592018	15.4	37.7	0.41
McIntosh County, OK	0.845885703	3.2	7.8	0.41
Hamilton County, IN	0.967890487	4.1	9.7	0.42
Brown County, WI	0.826710752	2.8	6.6	0.42
Wood County, TX	0.998059114	5.4	12.6	0.43
Collier County, FL	0.907652098	7.3	16.8	0.43
Yolo County, CA	0.995558685	2.9	6.5	0.45
Vernon Parish, LA	0.964234364	14.6	32.6	0.45
Luzerne County, PA	0.840749771	5.4	11.8	0.46
Saline County, AR	0.86672585	7.2	15.7	0.46
Ross County, OH	0.916655281	5.9	12.8	0.46
Spokane County, WA	0.861318175	1.9	4.1	0.46
Jeff Davis County, GA	0.931066911	15.3	32	0.48
Webster County, KY	0.939395309	4	8.3	0.48
Brunswick County, NC	0.991563275	10.7	22.2	0.48
Kendall County, IL	0.84771488	7.2	14.7	0.49
Eaton County, MI	0.9324861	7	14.2	0.49
Barren County, KY	0.892519761	4.1	8.3	0.49
Calloway County, KY	0.928692962	4.1	8.3	0.49

Logan County, WV	0.907722513	1.8	3.6	0.50
Limestone County, AL	0.823325175	13.5	26.8	0.50
Perry County, MS	0.910033095	19	37.7	0.50
Trousdale County, TN	0.883654504	8.8	17.1	0.51
Marion County, OH	0.854556262	6.6	12.8	0.52
Stanislaus County, CA	0.976998959	3.4	6.5	0.52
Clackamas County, OR	0.763903047	1.1	2.1	0.52
Okeechobee County, FL	0.895482648	8.8	16.8	0.52
Mingo County, WV	0.954852456	1.9	3.6	0.53
Clark County, WA	0.780187207	2.2	4.1	0.54
Columbia County, GA	0.953723496	17.3	32	0.54
Tippecanoe County, IN	0.788026815	5.3	9.7	0.55
Clay County, MO	0.851779166	6.5	11.8	0.55
Sullivan County, NY	0.890621229	9.8	17.7	0.55
Pueblo County, CO	0.926150471	2.5	4.5	0.56
Levy County, FL	0.865288247	9.4	16.8	0.56
Sabine County, TX	0.943326092	7.1	12.6	0.56
Platte County, MO	0.958220229	6.8	11.8	0.58
Howard County, TX	0.822297828	7.3	12.6	0.58
New London County, CT	0.918292956	6.9	11.8	0.58
Paulding County, GA	0.874162903	19.2	32	0.60
Camden County, GA	0.982980557	19.3	32	0.60
Fairfield County, OH	0.722283726	7.8	12.8	0.61
Chattahoochee County, GA	0.686179076	20.2	32	0.63
Brevard County, FL	0.913976865	10.7	16.8	0.64
Guadalupe County, TX	0.923357873	8.1	12.6	0.64
Yuba County, CA	0.883054375	4.2	6.5	0.65
Lee County, GA	0.857078222	20.7	32	0.65
Crawford County, GA	0.891454633	20.8	32	0.65
Worcester County, MA	0.921735454	5.6	8.6	0.65
Cleveland County, OK	0.992122838	5.1	7.8	0.65
Flagler County, FL	0.924309062	11	16.8	0.65
Manassas Park city, VA	0.925639433	13	19.8	0.66
Greene County, MS	0.779444935	24.8	37.7	0.66
Middlesex County, MA	0.808193463	5.7	8.6	0.66
Clay County, FL	0.755752383	11.3	16.8	0.67
Bay County, FL	0.986656402	11.3	16.8	0.67

Hendricks County, IN	0.636695825	6.6	9.7	0.68
Allen Parish, LA	0.981015766	22.6	32.6	0.69
Orange County, NY	0.95040434	12.3	17.7	0.69
Franklin County, WA	0.831317063	2.9	4.1	0.71
Washington County, MN	0.886773308	4.4	6.2	0.71
Onslow County, NC	0.912761043	15.9	22.2	0.72
Hancock County, WV	0.997461171	2.6	3.6	0.72
Nassau County, NY	0.980920114	12.8	17.7	0.72
Conway County, AR	0.968513309	11.6	15.7	0.74
Rockland County, NY	0.844444444	13.3	17.7	0.75
Prairie County, AR	0.911350969	12.1	15.7	0.77
Calhoun County, FL	0.935910729	13	16.8	0.77
Essex County, MA	0.887268829	6.7	8.6	0.78
Suwannee County, FL	0.908140437	13.3	16.8	0.79
Marion County, FL	0.962455808	13.3	16.8	0.79
San Jacinto County, TX	0.759421164	10	12.6	0.79
Denton County, TX	0.929396584	10	12.6	0.79
Collin County, TX	0.986911506	10	12.6	0.79
Clark County, IN	0.999240338	7.7	9.7	0.79
Snohomish County, WA	0.867921431	3.3	4.1	0.80
Osceola County, FL	0.702189706	13.6	16.8	0.81
Will County, IL	0.990524027	11.9	14.7	0.81
Montgomery County, GA	0.922339124	26.2	32	0.82
Long County, GA	0.637467096	26.4	32	0.83
Baker County, FL	0.911650922	13.9	16.8	0.83
Franklin County, FL	0.954048337	13.9	16.8	0.83
Spotsylvania County, VA	0.946771332	16.4	19.8	0.83
Atchison County, KS	0.838589713	5.2	6.2	0.84
Wakulla County, FL	0.648020891	14.1	16.8	0.84
Adams County, CO	0.847416964	3.8	4.5	0.84
Norfolk County, MA	0.790581053	7.3	8.6	0.85
Polk County, TX	0.946972274	10.7	12.6	0.85
Thurston County, WA	0.672542337	3.5	4.1	0.85
Clinch County, GA	0.977790285	27.4	32	0.86
Sarpy County, NE	0.992326789	4.3	5	0.86
Clinton County, IA	0.766723138	3.2	3.7	0.86
Stearns County, MN	0.636868026	5.4	6.2	0.87

Pamlico County, NC	0.918434451	19.4	22.2	0.87
Dona Ana County, NM	0.999054038	2.2	2.5	0.88
Crenshaw County, AL	0.983926179	23.6	26.8	0.88
Butts County, GA	0.949019783	28.2	32	0.88
Gwinnett County, GA	0.954725457	28.2	32	0.88
Carter County, OK	0.993959669	6.9	7.8	0.88
Berkeley County, SC	0.98405087	24.7	27.5	0.90
Washington County, FL	0.874084064	15.2	16.8	0.90
Dodge County, GA	0.989639862	29.8	32	0.93
Stafford County, VA	0.913164976	18.5	19.8	0.93
Cochise County, AZ	0.990839012	4.6	4.9	0.94
Marion County, WV	0.958356861	3.4	3.6	0.94
Henderson County, KY	0.989415934	7.9	8.3	0.95
Covington County, MS	0.964804246	35.9	37.7	0.95
Amherst County, VA	0.993709436	18.9	19.8	0.95
Chaves County, NM	0.885457015	2.4	2.5	0.96
Anoka County, MN	0.930917711	6	6.2	0.97
Charlton County, GA	0.79725321	31.2	32	0.98
Jackson County, OK	0.996286372	7.8	7.8	1.00
Henry County, AL	0.994193642	27	26.8	1.01
Dakota County, MN	0.914048393	6.3	6.2	1.02
Pulaski County, MO	0.954166477	12.5	11.8	1.06
Johnson County, GA	0.850982408	34.5	32	1.08
Monongalia County, WV	0.982446364	3.9	3.6	1.08
Wilcox County, GA	0.984186314	34.8	32	1.09
Brazoria County, TX	0.997578573	13.8	12.6	1.10
Amelia County, VA	0.937691338	21.8	19.8	1.10
Prince William County, VA	0.969244737	22	19.8	1.11
Ben Hill County, GA	0.965393351	35.6	32	1.11
Henry County, VA	0.964613971	22.4	19.8	1.13
Jackson County, AR	0.970402612	17.8	15.7	1.13
Kent County, DE	0.954486533	25.9	22.6	1.15
Bradford County, FL	0.888972632	19.3	16.8	1.15
Union County, SC	0.962530255	31.7	27.5	1.15
Queens County, NY	0.919615802	20.7	17.7	1.17
Wheeler County, GA	0.742246364	38.1	32	1.19
Wilkinson County, GA	0.863964983	38.8	32	1.21

Webster County, IA	0.925975774	4.5	3.7	1.22
Plymouth County, MA	0.890793618	10.6	8.6	1.23
Clark County, NV	0.95088155	12.2	9.6	1.27
Honolulu County, HI	0.978801215	2.8	2.2	1.27
Twiggs County, GA	0.985386635	41.8	32	1.31
Franklin County, KY	0.882285452	10.9	8.3	1.31
Monroe County, PA	0.677427046	15.5	11.8	1.31
Hyde County, NC	0.878801391	29.2	22.2	1.32
Liberty County, GA	0.974567901	43.2	32	1.35
Orange County, FL	0.945132377	22.7	16.8	1.35
Henry County, GA	0.879551096	43.6	32	1.36
Coryell County, TX	0.82996939	17.3	12.6	1.37
Colleton County, SC	0.99058587	37.9	27.5	1.38
Baker County, GA	0.828327253	45.9	32	1.43
Douglas County, GA	0.908080705	45.9	32	1.43
Fairbanks North Star Borough, AK	0.988579545	5.5	3.8	1.45
Osage County, OK	0.698061683	11.4	7.8	1.46
Providence County, RI	0.908792449	12	8.1	1.48
Quitman County, GA	0.924746486	47.7	32	1.49
Charles County, MD	0.999411014	46.4	30.7	1.51

Residential segregation is a marker for health inequalities and considered to be a “fundamental cause of health inequalities”. Specifically, those who live in areas of residential segregation experience greater stress and have worse health outcomes [17]. The current data are compatible with the possibility that increased rates of residential segregation is an important target for further research in order to potentially reduce black mortality.

Conclusions

These descriptive data from throughout the US indicate that, especially in Georgia and Florida, higher mortality rates from cancer among Bs are not inevitable. Attempts to improve racial inequalities in mortality from cancer and other causes among B should include further analytic investigations in counties such as those identified in the present descriptive study. These include but are not limited to Georgia and Florida and many of their counties which show lower mortality rates from cancer among Bs than Ws. Reducing inequalities in health outcomes requires mobilization of resources, intensive study, and subsequent interventions.

These descriptive data are useful to formulate hypotheses that require testing in analytic studies designed a priori to do so, especially in Georgia and Florida as well as both between and within the counties identified. Such efforts have the potential to reduce inequalities in cancer deaths as well as total mortality between Bs and Ws.

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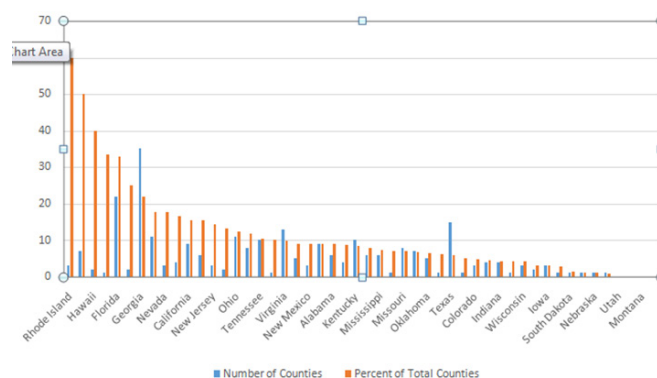


Figure 1: Counties where B: W RR for Cancer mortality is <1 shown in crude number of counties and percent of total counties per state.

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