The Harvard Center for Population and Development Studies

Working Paper Series

Regional heterogeneity in COVID-19 risk in the United States during the time of Delta (July 1 – September 15, 2021): The US south suffers the highest case and death rates and greatest inequities

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October 12, 2021

HCPDS Working Paper Volume 21, Number 6

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COI: None of the authors have any conflict of interest and no external funding supported this work.

IRB: The research is exempt from IRB review (no human subjects)

Word Count: abstract: 320 words; text: 1636 words

References: 17

Figures: 2 (main text); 1 (supplemental)

Tables: 2 (main text)

Submitted: October 7, 2021

Abstract

COVID-19 monitoring dashboards and data journalism have actively been documenting how, among US regions, the US south has experienced the brunt of the surge associated with the delta variant, which took off in July 2021, at a time when all US adults had been eligible for vaccination for at least 3 months. However, less attention has been given to regional heterogeneity in COVID-19 inequities. In this brief report, we document that during the period July 1 – September 15, 2021, the US South not only has experienced the highest COVID-19 case and death rates (per 100,000 person-years), as previously noted, but also that this region has the highest COVID-19 inequities, as measured using a variety of county-level social metrics. For example, comparing rates among people living in the highest vs. lowest poverty counties, the rate ratios and 95% confidence intervals for COVID-19 incidence rates, by region, were as follows: South: 2.07 (95% CI 1.53, 2.18); Northeast: 1.33 (95% CI 0.90, 1.97); Midwest: 1.12 (95% CI 0.87, 1.45); West: 1.35 (95% CI 0.83, 2.25); for COVID-19 mortality rates, they were: South: 5.83 (95% CI 2.33, 14.49); Northeast: 3.66 (95% CI 0.93, 14.43); Midwest: 2.62 (95% CI 1.36, 5.04); West: 3.25 (95% CI 0.67, 15.87). Additionally, considered across the diverse social metrics employed, the highest COVID-19 burden occurred in the US South in counties with the greatest Republican lean in the 2020 election (case incidence rate per 100,000 person-years: 23,541; 95% CI 22,868, 24,234; death rate per 100,000 person-years: 197; 95% CI 186, 208), and the lowest in the US Northeast in counties with the lowest poverty rate (case incidence rate per 100,000 person years: 5,420; 95% CI 3,755, 7,822; death rate: 12, 95% CI 3,46). While attention to overall US inequities in COVID-19 rates is important, so too is regional specificity, and the variations in rates and inequities across regions provides valuable information regarding disease burdens that in principle could be prevented.

TEXT

COVID-19 monitoring dashboards and data journalism have actively been documenting how, among US regions, the US south has experienced the brunt of the surge associated with the delta variant, which took off in July 2021 [1-4], at a time when all US adults had been eligible for vaccination for at least 3 months [5]. However, less attention has been given to regional heterogeneity in COVID-19 inequities, that is differences in COVID-19 rates across social groups that are unfair, unnecessary and in principle preventable [6,7]. In this brief report, we provide evidence that during the period July 1 – September 15, 2021, the US South not only has experienced the highest COVID-19 case and death rates (per 100,000 person-years) but also the highest inequities, as measured using a variety of county-level social metrics.

METHODS

Study population. *COVID-19 case and death data*. We obtained publicly available data on COVID-19 cases and deaths at the county level from USA Facts [8], which we chose because it reports separate entries for the five counties corresponding to the boroughs of New York City. USAFacts directly collects the daily county-level cumulative totals of positive cases and deaths from a table, dashboard, or PDF on the state public health website. These data are compiled either through scraping or manual entry. Details of their methodology, including unique data issues affecting particular states, are available at their website [9]. Presumptive positive cases are counted with confirmed cases. Notably, counts reported by state and local health departments can fluctuate, with some days seeing lower reported numbers than the previous days; USA Facts revises older reported numbers to ensure the data do not show decreasing cases.

To generate our dataset, we decumulated the cumulative case and death counts on a weekly basis from January 22, 2020 to September 1, 2021, and for these analyses employ data only for July 1 – September 15, 2021. Of note, Nebraska ceased reporting of county-level data on COVID-19 cases and death on May 26, 2021, and its 91 counties are not part of our analyses. To obtain denominators needed to compute rates, we matched county case and death data to population count data published on the USA Facts website [8], which are derived from US Census county population estimates.

US regions. We grouped US states into 4 regions, using the designations employed by the US census: Northeast, South, Midwest, and West [10]. **Figure S1** depicts which states are include in which regions [11].

County-level metrics. We constructed three county-level sociodemographic and socioeconomic variables, for which we used American Community Survey (ACS) 2014-2018 five-year estimates [12] and

employed the variables and approaches described at our *Public Health Disparities Geocoding Project* website [13]. These variables pertain to:

(a) percent of population below the poverty line;

(b) percent of population categorized as people of color (i.e., everyone exclusive of persons who are categorized as white non-Hispanic); and

(c) racialized economic segregation (Index of Concentration at the Extremes, setting the extremes as low-income households of color vs. high-income white non-Hispanic households).

We obtained two county-level social vulnerability variables developed and used by US government agencies:

(d) the Social Vulnerability Index (SVI)**, whose different data elements are drawn from years between 2014 and 2018 [14];** and

(e) the Minority Social Vulnerability Index (MSVI), whose different data elements are drawn from years between 2011 and 2018 [15].

We computed data on political lean using data from the 2020 US presidential election [16], with political lean computed as [17]:

(f) lean = (N of Republican votes – N of Democratic votes)/total votes

For all variables, we constructed quintile cut-points based on the variable's national distribution. Additional information on the population and county distributions of these diverse metrics, nationwide and by region, is provided in a prior analysis [18].

We then generated model-based estimates of both the incidence and mortality rate ratios (RR) and 95% confidence intervals (CI), by region, for each county-level metric, for the study time period, based on an overdispersed Poisson model [19].

RESULTS

During the period July 1-September 15, 2021, the US South had the highest COVID-19 case and mortality rates (per 100,000 person-years) compared to the other 3 US regions: for the case incidence rate, 20,160 (95% CI 19,763, 20,565), and for the mortality rate: 127 (95% CI 121, 132). As shown in **Table 1**, these rates for the US South were: (a) for the COVID-19 case incidence rate, around 2 to 3 times higher in the US South compared to the other regions (relative risk: West: 1.80 (95% CI 1.73, 1.87); Midwest: 1.98 (95% CI 1.90, 2.07); Northeast: 3.05 (95% CI 2.88, 3.22)), and were 1.6 to over 3.5 times higher for the COVID-19 mortality rate (relative risk: West: 1.65 (95% CI 1.51, 1.78); Midwest: 1.82 (95% CI 1.66, 1.99), Northeast: 3.66 (95% CI 3.21, 4.17).

Figure 1 shows the national and regional data for the COVID-19 case rates (July 1 - September 15, 2021, per 100,000 person-years) stratified, separately, by quintiles for the following single variables: % below poverty (**Figure 1a**); % of population categorized as being people of color (**Figure 1b**); racialized economic segregation (**Figure 1c**); the social vulnerability index (**Figure 1d**); the minority social vulnerability index (**Figure 1e**); and political lean (**Figure 1f**). **Figure 2** provides the corresponding data for the COVID-19 death rates (per 100,000 person-years). **Table 2** in turn provides these case and death data in tabular form, along with the rate ratios (RR) and their 95% confidence intervals (CI).

As graphically revealed by both **Figure 1** and **Figure 2**, social gradients in COVID-19 cases and mortality rates were not only steepest in the US South (except for the variable pertaining to county % of population of color, which did not exhibit monotonic gradients in any region), but that also, within each county-level quintile, its rates exceeded those of the other US regions. Thus, with regard to COVID-19 rate ratios for case incidence rates (**Table 2**), the RRs comparing the highest to lowest quintile for variables exhibiting monotonic gradients were always largest in the US South, as follows: (a) for % below poverty: South: 2.07 (95% CI 1.53, 2.18); Northeast: 1.33 (95% CI 0.90, 1.97); Midwest: 1.12 (95% CI 0.87, 1.45); West: 1.35 (95% CI 0.83, 2.25); (b) for racialized economic segregation: South: 1.64 (95% CI 1.52, 1.78); Northeast: 1.04 (95% CI 0.90, 1.20); Midwest: 1.11 (95% CI 0.95, 1.31); West: 1.12 (95% CI 1.00, 1.27); (c) for the social vulnerability index: South: 1.63 (95% CI 1.52, 1.75); Northeast: 1.11 (95% CI 0.96, 1.30); Midwest: 1.15 (95% CI 1.01, 1.22); West: 1.14 (95% CI 1.00, 1.29); (d) for the minority SVI: 1.33 (95% CI 1.23, 1.44); Northeast: 1.10 (95% 0.89, 1.36); Midwest: 0.97 (95% CI 0.83, 1.12); West: 0.95 (95% CI 0.84, 1.08); and (e) for political lean: South: 2.32 (95% CI 2.15, 2.50); Northeast: 1.15 (95% CI 0.98, 1.36); Midwest: 2.20 (95% CI 1.96, 2.46); West: 1.75 (95% CI 1.58, 1.94). As these data also show, in all regions the sharpest risk contrasts occurred for the variables pertaining to county % below the poverty line and county political lean.

Similar, albeit starker, patterns were evident for the COVID-19 rate ratios for the mortality rates (**Table 2**). Thus, the RRs comparing the highest to lowest quintile for variables exhibiting monotonic gradients were always largest in the US South, as follows: (a) for % below poverty: South: 5.83 (95% CI 2.33, 14.49); Northeast: 3.66 (95% CI 0.93, 14.43); Midwest: 2.62 (95% CI 1.36, 5.04); West: 3.25 (95% CI 0.67, 15.87); (b) for racialized economic segregation: South: 2.34 (95% CI 1.96, 2.80); Northeast: 1.33 (95% CI 0.94, 1.87); Midwest: 1.69 (95% CI 1.20, 2.38); West: 1.46 (95% CI 1.11, 1.93); (c) for the social vulnerability index: South: 2.53 (95% CI 2.15, 2.00; Northeast: 1.29 (95% CI 0.89, 1.86); Midwest: 1.62 (95% CI 1.23, 2.12); West: 1.53 (95% CI 1.16, 2.04); (d) for the minority SVI: 1.96 (95% CI 1.64, 2.33); Northeast: 1.24 (95% 0.73, 2.09); Midwest: 1.29 (95% CI 0.96, 1.73); West: 1.20 (95% CI 0.92,

1.56); and (e) for political lean: South: 2.81 (95% CI 2.39, 3.31); Northeast: 1.55 (95% CI 1.07, 2.24); Midwest: 2.67 (95% CI 2.09, 3.40); West: 2.97 (95% CI 2.41, 3.66). For these mortality data, in all regions the sharpest risk contrasts occurred for the variable pertaining to county % below the poverty line, followed by county political lean.

Overall, the highest county COVID-19 case incidence rate (per 100,000 person-years) was detected in the US South, for the counties with the highest Republican lean (incidence rate: 23,541; 95% CI 22,868, 24,234) and the lowest was detected in the US Northeast, for the counties with the lowest poverty rate (incidence rate: 5,420; 95% CI 3,755, 7,822), amounting to over a 4-fold relative difference and an absolute difference of over 18,000 cases per 100,000 person-years. With regard to the COVID-19 mortality rate (per 100,000 person-years, the same patterns occurred: the highest rate was detected in the US South among the counties with the highest Republican lean (mortality rate: 197; 95% CI 186, 208) and the lowest was detected in the US Northeast, among counties with the lowest poverty rate (mortality rate: 12, 95% CI 3,46), translating to a 16-fold elevation in relative risk and an absolute difference of over 180 more deaths per 100,000 person-years.

CONCLUSION

Stark regional inequities exist not only in US COVID-19 incidence and mortality rates, but also in the magnitude of COVID-19 inequities within US regions. These patterns of risk, occurring during a time period when all US adults were eligible for vaccination (July 1- September 15, 2021), point to gross failures in pandemic response, as they reveal profound patterns of preventable disease burdens and deaths. It is incumbent on future research to explore the ways in which and extent to which socially-patterned differences in exposure, vaccination, and treatment contribute to these observed COVID-19 inequities [1-4,17].

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FIGURES AND TABLES

Figure 1. US national and regional weekly COVID-19 case incidence rates, per 100,000 person years, for July 1, 2021-September 15, 2021, stratified by county-level metrics for: (a) percent of population below the poverty line; (b) percent of population categorized as people of color; (c) racialized economic segregation (d) Social Vulnerability Index (SVI); (e) the Minority Social Vulnerability Index (MSVI); and; (f) 2020 political lean.

Figure 2. US national and regional weekly COVID-19 mortality rates, per 100,000 person years, for July 1, 2021-September 15, 2021, stratified by county-level metrics for: (a) percent of population below the poverty line; (b) percent of population categorized as people of color; (c) racialized economic segregation (d) Social Vulnerability Index (SVI); (e) the Minority Social Vulnerability Index (MSVI); and; (f) 2020 political lean.

Table 1. US national and regional cumulative COVID-19 case and mortality rates per 100,000 person years for July 1, 2021-September 15, 2021 (delta surge), and rate ratios for US regional rates.

Table 2. US national and regional cumulative COVID-19 case and mortality rates per 100,000 person years, and incidence and mortality rate ratios and 95% confidence intervals, for July 1, 2021-September 15, 2021 (delta surge), stratified by county-level metrics for: (a) percent of population below the poverty line; (b) percent of population categorized as people of color; (c) racialized economic segregation (Index of Concentration at the Extremes (ICE)); (d) Social Vulnerability Index (SVI); (e) the Minority Social Vulnerability Index (MSVI); and (f) 2020 political lean.

SUPPLEMENTAL DATA:

Figure S1. 2010 Regions and Divisions of the United States.

Table 1. US national and regional cumulative COVID-19 case and mortality rates per 100,000 person years for July 1, 2021-September 15, 2021 (delta surge), and rate ratios for US regional rates.				
	COVID-19 rate per 100,000 person years (95% CI)		US South relative risk (95% CI) for COVID-19 rates, compared to other regions	
US region	Case incidence rate	Mortality rate	Case incidence rate	Mortality rate
Nation	13,652 (13,359, 13,951)	87 (84, 91)	--	--
Northeast	6,620 (6,284, 6,973)	35 (31, 39)	3.05 (2.88, 3.22)	3.66 (3.21, 4.17)
Midwest	10,169 (9,785, 10,568)	70 (64, 76)	1.98 (1.90, 2.07)	1.82 (1.66, 1.99)
South	20,160 (19,763, 20,565)	127 (121, 132)	--	--
West	11,196 (10,824, 11,581)	77 (72 , 83)	1.80 (1.73, 1.87)	1.64 (1.51, 1.78)

Table 2. US national and regional cumulative COVID-19 case and mortality rates per 100,000 person years, and incidence and mortality rate ratios and 95% confidence intervals, for July 1, 2021-September 15, 2021 (delta surge), stratified by county-level metrics for: (a) percent of population below the poverty line;(b) percent of population categorized as people of color; (c) racialized economic segregation (Index of Concentration at the Extremes (ICE)); (d) Social Vulnerability Index (SVI); (e) the Minority Social Vulnerability Index (MSVI); and (f) 2020 political lean

NATIONAL DATA

County social metric	Category	Number of counties	Cases	Population	Rate per 100,000 person-years	(95% CI)	Incidence rate ratio	(95% CI)	Deaths	Population	Rate per 100,000 person-years	(95% CI)	Mortality rate ratio	(95% CI)
% below poverty	0-4.9%	40	65,473	4,652,010	8,291	(6,665 , 10,315)	1.00	(reference)	216	4,652,010	27	(16 , 46)	1.00	(reference)
	5-9.9%	524	1,188,423	72,248,477	9,694	(9,210 , 10,204)	1.17	(0.95 , 1.47)	6,328	72,248,477	52	(47 , 57)	1.89	(1.16 , 3.34)
	10-14.9%	974	2,528,708	109,960,151	13,548	(13,080 , 14,032)	1.63	(1.33 , 2.05)	14,540	109,960,151	78	(73 , 83)	2.85	(1.77 , 5.02)
	15-19.9%	852	2,790,828	103,074,847	15,951	(15,426 , 16,493)	1.92	(1.56 , 2.41)	18,785	103,074,847	107	(102 , 114)	3.93	(2.44 , 6.91)
	20-100%	658	987,090	36,330,709	16,006	(15,131 , 16,932)	1.93	(1.56 , 2.43)	8,558	36,330,709	139	(128 , 151)	5.08	(3.14 , 8.97)
% population of color	[0,0.172]	1559	1,509,327	65,309,717	13,615	(12,972 , 14,289)	1.00	(reference)	10,663	65,309,717	96	(89 , 104)	1.00	(reference)
	(0.172,0.302]	539	1,538,309	65,995,059	13,732	(13,090 , 14,406)	1.01	(0.94 , 1.08)	9,368	65,995,059	84	(77 , 91)	0.87	(0.77 , 0.97)
	(0.302,0.443]	465	1,758,406	70,380,486	14,719	(14,074 , 15,393)	1.08	(1.01 , 1.15)	11,403	70,380,486	96	(88 , 103)	0.99	(0.89 , 1.11)
	(0.443,0.61]	278	1,370,626	61,849,318	13,055	(12,409 , 13,735)	0.96	(0.90 , 1.03)	8,479	61,849,318	81	(74 , 88)	0.84	(0.74 , 0.94)
	(0.61,1]	208	1,384,379	62,770,535	12,997	(12,357 , 13,670)	0.95	(0.89 , 1.02)	8,517	62,770,535	80	(73 , 88)	0.83	(0.74 , 0.93)
Index of Concentration at the Extremes (high income white non-Hispanic vs. low income people of color)	[-0.774,0.012	576	1,422,525	53,870,312	15,556	(14,859 , 16,286)	1.72	(1.60 , 1.84)	11,019	53,870,312	121	(112 , 130)	2.65	(2.34 , 3.02)
	(0.0124,0.095	609	2,058,641	74,487,778	16,282	(15,673 , 16,914)	1.80	(1.68 , 1.92)	13,606	74,487,778	108	(101 , 115)	2.37	(2.09 , 2.68)
	(0.0959,0.16]	866	1,814,421	66,616,875	16,050	(15,411 , 16,714)	1.77	(1.66 , 1.89)	11,463	66,616,875	101	(94 , 109)	2.23	(1.97 , 2.54)
	(0.16,0.231]	647	1,254,680	65,664,207	11,256	(10,720 , 11,820)	1.24	(1.16 , 1.33)	7,277	65,664,207	65	(60 , 72)	1.44	(1.25 , 1.65)
	(0.231,0.502]	350	1,010,255	65,627,022	9,069	(8,589 , 9,576)	1.00	(reference)	5,062	65,627,022	45	(41 , 51)	1.00	(reference)
Social Vulnerability Index (SVI)	[0,0.267]	768	1,100,625	65,459,026	9,905	(9,388 , 10,451)	1.00	(reference)	5,804	65,459,026	52	(47 , 58)	1.00	(reference)
	(0.267,0.46]	598	1,333,992	65,610,108	11,978	(11,408 , 12,576)	1.21	(1.13 , 1.30)	8,154	65,610,108	73	(67 , 80)	1.40	(1.23 , 1.60)
	(0.46,0.62]	493	1,631,801	65,170,553	14,755	(14,119 , 15,420)	1.49	(1.39 , 1.59)	8,350	65,170,553	76	(69 , 82)	1.45	(1.27 , 1.65)
	(0.62,0.768]	464	1,790,170	70,140,414	15,036	(14,416 , 15,682)	1.52	(1.42 , 1.62)	12,887	70,140,414	108	(101 , 116)	2.07	(1.84 , 2.34)
	(0.768,1]	725	1,703,934	59,886,093	16,762	(16,054 , 17,501)	1.69	(1.58 , 1.81)	13,232	59,886,093	130	(122 , 139)	2.49	(2.21 , 2.81)
Minority Health SVI	[0,0.412]	1214	1,121,863	64,759,339	10,206	(9,671 , 10,769)	1.00	(reference)	6,552	64,759,339	60	(54 , 66)	1.00	(reference)
	(0.412,0.618]	641	1,425,097	66,726,051	12,582	(11,996 , 13,197)	1.23	(1.15 , 1.32)	8,585	66,726,051	76	(69 , 83)	1.27	(1.11 , 1.45)
	(0.618,0.773]	483	1,481,651	64,485,901	13,536	(12,917 , 14,184)	1.33	(1.24 , 1.42)	9,037	64,485,901	83	(76 , 90)	1.38	(1.21 , 1.58)
	(0.773,0.908]	423	1,886,467	64,827,663	17,147	(16,451 , 17,873)	1.68	(1.57 , 1.80)	10,496	64,827,663	95	(88 , 103)	1.60	(1.41 , 1.82)
	(0.908,1]	287	1,645,444	65,467,240	14,807	(14,164 , 15,479)	1.45	(1.36 , 1.55)	13,757	65,467,240	124	(115 , 133)	2.07	(1.84 , 2.34)
political lean (2020)	[-0.894,-0.34	130	874,941	64,417,849	8,001	(7,573 , 8,454)	1.00	(reference)	5,224	64,417,849	48	(43 , 53)	1.00	(reference)
	(-0.346,-0.14	189	1,262,444	64,935,328	11,453	(10,940 , 11,990)	1.43	(1.33 , 1.54)	7,076	64,935,328	64	(59 , 70)	1.34	(1.18 , 1.53)
	(-0.143,0.007	212	1,569,525	65,715,616	14,070	(13,504 , 14,660)	1.76	(1.64 , 1.88)	8,283	65,715,616	74	(69 , 80)	1.56	(1.38 , 1.76)
	(0.00776,0.26	616	1,728,367	65,785,809	15,478	(14,883 , 16,096)	1.93	(1.81 , 2.07)	10,232	65,785,809	92	(85 , 98)	1.92	(1.70 , 2.16)
	(0.265,0.931]	1871	2,102,076	64,715,061	19,136	(18,468 , 19,827)	2.39	(2.24 , 2.55)	17,524	64,715,061	160	(151 , 168)	3.34	(2.99 , 3.73)

REGIONAL DATA

County social metric	Region	Category	Number of counties	Cases	Population	Rate per 100,000 person-years	(95% CI)	Incidence rate ratio	(95% CI)	Deaths	Population	Rate per 100,000 person-years	(95% CI)	Mortality rate ratio	(95% CI)
% below poverty	Northeast	0-4.9%	4	11,545	1,254,919	5,420	(3,755 , 7,822)	1.00	(reference)	25	1,254,919	12	(3 , 46)	1.00	(reference)
	Northeast	5-9.9%	59	216,138	19,622,615	6,489	(5,961 , 7,063)	1.20	(0.83 , 1.73)	932	19,622,615	28	(22 , 35)	2.38	(0.62 , 9.18)
	Northeast	10-14.9%	113	235,813	21,023,979	6,608	(6,092 , 7,167)	1.22	(0.84 , 1.76)	1,430	21,023,979	40	(33 , 48)	3.41	(0.89 , 13.06)
	Northeast	15-19.9%	38	97,273	8,519,116	6,727	(5,928 , 7,633)	1.24	(0.85 , 1.82)	495	8,519,116	34	(25 , 46)	2.92	(0.75 , 11.40)
	Northeast	20-100%	3	68,279	5,562,174	7,232	(6,219 , 8,409)	1.33	(0.90 , 1.97)	406	5,562,174	43	(31 , 60)	3.66	(0.93 , 14.43)
	Midwest	0-4.9%	19	31,638	2,045,167	9,113	(7,302 , 11,375)	1.00	(reference)	120	2,045,167	35	(19 , 64)	1.00	(reference)
	Midwest	5-9.9%	246	241,880	15,406,102	9,249	(8,537 , 10,021)	1.01	(0.81 , 1.28)	1,340	15,406,102	51	(43 , 62)	1.48	(0.79 , 2.79)
	Midwest	10-14.9%	402	388,822	21,808,092	10,503	(9,860 , 11,189)	1.15	(0.92 , 1.44)	2,560	21,808,092	69	(61 , 79)	2.00	(1.08 , 3.73)
	Midwest	15-19.9%	218	399,461	22,291,709	10,557	(9,918 , 11,236)	1.16	(0.92 , 1.45)	3,100	22,291,709	82	(73 , 93)	2.37	(1.28 , 4.40)
	Midwest	20-100%	76	84,024	4,829,349	10,250	(8,946 , 11,743)	1.12	(0.87 , 1.45)	742	4,829,349	91	(71 , 116)	2.62	(1.36 , 5.04)
	South	0-4.9%	10	16,293	952,306	10,079	(7,401 , 13,726)	1.00	(reference)	53	952,306	33	(13 , 83)	1.00	(reference)
	South	5-9.9%	125	456,834	20,761,477	12,963	(12,228 , 13,741)	1.29	(0.95 , 1.75)	2,704	20,761,477	77	(67 , 87)	2.34	(0.93 , 5.89)
	South	10-14.9%	300	1,262,103	34,631,025	21,470	(20,729 , 22,237)	2.13	(1.57 , 2.89)	6,103	34,631,025	104	(95 , 113)	3.17	(1.27 , 7.93)
	South	15-19.9%	476	1,839,535	48,854,356	22,182	(21,547 , 22,836)	2.20	(1.62 , 2.98)	11,526	48,854,356	139	(131 , 148)	4.24	(1.70 , 10.60)
	South	20-100%	511	722,629	20,381,284	20,887	(19,941 , 21,879)	2.07	(1.53 , 2.81)	6,597	20,381,284	191	(176 , 208)	5.83	(2.33 , 14.59)
	West	0-4.9%	7	5,997	399,618	8,841	(5,314 , 14,709)	1.00	(reference)	18	399,618	27	(5 , 131)	1.00	(reference)
	West	5-9.9%	94	273,571	16,458,283	9,809	(9,097 , 10,576)	1.11	(0.67 , 1.84)	1,352	16,458,283	48	(40 , 58)	1.82	(0.38 , 8.84)
	West	10-14.9%	158	641,970	32,496,969	11,638	(11,079 , 12,225)	1.32	(0.80 , 2.17)	4,447	32,496,969	81	(73 , 89)	3.04	(0.63 , 14.62)
	West	15-19.9%	120	454,559	23,409,666	11,439	(10,789 , 12,128)	1.29	(0.78 , 2.14)	3,664	23,409,666	92	(82 , 103)	3.47	(0.72 , 16.73)
	West	20-100%	67	112,053	5,549,588	11,895	(10,573 , 13,382)	1.35	(0.81 , 2.25)	813	5,549,588	86	(68 , 109)	3.25	(0.67 , 15.87)

% population of color	Northeast	[0,0.172]	148	157,874	14,224,983	6,538	(5,920 , 7,221)	1.00	(reference)	1,043	14,224,983	43	(35 , 53)	1.00	(reference)
	Northeast	(0.172,0.302]	35	158,229	14,986,100	6,220	(5,632 , 6,869)	0.95	(0.83 , 1.09)	825	14,986,100	32	(26 , 41)	0.75	(0.55 , 1.03)
	Northeast	(0.302,0.443]	20	144,893	11,684,017	7,306	(6,586 , 8,104)	1.12	(0.97 , 1.29)	651	11,684,017	33	(25 , 43)	0.76	(0.54 , 1.06)
	Northeast	(0.443,0.61]	8	61,908	5,800,305	6,288	(5,365 , 7,369)	0.96	(0.80 , 1.16)	188	5,800,305	19	(12 , 32)	0.44	(0.26 , 0.75)
	Northeast	(0.61,1]	6	106,144	9,287,398	6,733	(5,964 , 7,601)	1.03	(0.88 , 1.20)	581	9,287,398	37	(28 , 49)	0.85	(0.60 , 1.21)
	Midwest	[0,0.172]	797	589,215	28,780,493	12,061	(11,456 , 12,698)	1.00	(reference)	4,265	28,780,493	87	(79 , 97)	1.00	(reference)
	Midwest	(0.172,0.302]	104	244,364	15,798,194	9,112	(8,413 , 9,870)	0.76	(0.69 , 0.83)	1,520	15,798,194	57	(48 , 68)	0.65	(0.53 , 0.79)
	Midwest	(0.302,0.443]	37	208,087	12,837,304	9,549	(8,757 , 10,413)	0.79	(0.72 , 0.87)	1,260	12,837,304	58	(48 , 70)	0.66	(0.53 , 0.82)
	Midwest	(0.443,0.61]	13	102,945	8,891,800	6,820	(6,031 , 7,714)	0.57	(0.50 , 0.64)	812	8,891,800	54	(42 , 68)	0.62	(0.48 , 0.80)
	Midwest	(0.61,1]	10	1,214	72,628	9,847	(3,170 , 30,591)	0.82	(0.27 , 2.48)	5	72,628	41	(2 , 880)	0.46	(0.02 , 9.49)
	South	[0,0.172]	436	609,435	16,137,907	22,247	(21,150 , 23,402)	1.00	(reference)	4,047	16,137,907	148	(133 , 165)	1.00	(reference)
	South	(0.172,0.302]	303	881,783	22,892,847	22,691	(21,757 , 23,666)	1.02	(0.96 , 1.09)	5,231	22,892,847	135	(122 , 148)	0.91	(0.79 , 1.05)
	South	(0.302,0.443]	343	1,115,642	31,992,796	20,543	(19,789 , 21,326)	0.92	(0.87 , 0.98)	7,573	31,992,796	140	(129 , 151)	0.94	(0.83 , 1.07)
	South	(0.443,0.61]	203	863,626	27,612,370	18,426	(17,659 , 19,225)	0.83	(0.78 , 0.88)	4,953	27,612,370	106	(96 , 117)	0.71	(0.62 , 0.82)
	South	(0.61,1]	137	826,908	26,944,528	18,079	(17,311 , 18,882)	0.81	(0.76 , 0.87)	5,179	26,944,528	113	(103 , 125)	0.76	(0.66 , 0.88)
	West	[0,0.172]	178	152,803	6,166,334	14,598	(13,195 , 16,150)	1.00	(reference)	1,308	6,166,334	125	(103 , 151)	1.00	(reference)
	West	(0.172,0.302]	97	253,933	12,317,918	12,145	(11,229 , 13,135)	0.83	(0.73 , 0.94)	1,792	12,317,918	86	(73 , 101)	0.69	(0.54 , 0.88)
	West	(0.302,0.443]	65	289,784	13,866,369	12,311	(11,441 , 13,249)	0.84	(0.75 , 0.95)	1,919	13,866,369	82	(70 , 95)	0.65	(0.51 , 0.83)
	West	(0.443,0.61]	54	342,147	19,544,843	10,313	(9,640 , 11,033)	0.71	(0.63 , 0.80)	2,526	19,544,843	76	(66 , 87)	0.61	(0.48 , 0.77)
	West	(0.61,1]	53	450,008	26,457,581	10,030	(9,457 , 10,638)	0.69	(0.61 , 0.77)	2,752	26,457,581	61	(54 , 70)	0.49	(0.39 , 0.61)
Index of Concentration at the Extremes (high income white non-Hispanic vs. low income people of color)	Northeast	[-0.774,0.0124]	7	107,927	9,436,925	6,737	(5,976 , 7,596)	1.04	(0.90 , 1.20)	581	9,436,925	36	(27 , 48)	1.33	(0.94 , 1.87)
	Northeast	(0.0124,0.0959]	7	22,085	1,866,115	6,972	(5,349 , 9,088)	1.07	(0.82 , 1.41)	97	1,866,115	31	(15 , 61)	1.12	(0.55 , 2.27)
	Northeast	(0.0959,0.16]	60	101,045	9,066,614	6,566	(5,800 , 7,432)	1.01	(0.88 , 1.17)	619	9,066,614	40	(31 , 53)	1.47	(1.05 , 2.06)
	Northeast	(0.16,0.231]	78	158,141	13,845,472	6,729	(6,094 , 7,429)	1.04	(0.91 , 1.17)	981	13,845,472	42	(34 , 52)	1.53	(1.13 , 2.06)
	Northeast	(0.231,0.502]	65	239,850	21,767,677	6,491	(5,990 , 7,035)	1.00	(reference)	1,010	21,767,677	27	(22 , 34)	1.00	(reference)
	Midwest	[-0.774,0.0124]	27	72,269	4,360,183	9,764	(8,433 , 11,305)	1.11	(0.95 , 1.31)	547	4,360,183	74	(55 , 99)	1.69	(1.20 , 2.38)
	Midwest	(0.0124,0.0959]	118	219,441	13,948,899	9,268	(8,520 , 10,081)	1.06	(0.94 , 1.19)	1,851	13,948,899	78	(67 , 92)	1.79	(1.40 , 2.28)
	Midwest	(0.0959,0.16]	362	344,703	15,638,862	12,985	(12,142 , 13,886)	1.48	(1.34 , 1.64)	2,563	15,638,862	97	(85 , 110)	2.21	(1.76 , 2.79)
	Midwest	(0.16,0.231]	323	262,566	15,829,010	9,772	(9,049 , 10,553)	1.12	(1.00 , 1.24)	1,670	15,829,010	62	(53 , 73)	1.42	(1.11 , 1.83)
	Midwest	(0.231,0.502]	131	246,846	16,603,465	8,758	(8,091 , 9,481)	1.00	(reference)	1,231	16,603,465	44	(36 , 53)	1.00	(reference)
	South	[-0.774,0.0124]	465	1,062,290	30,862,581	20,277	(19,517 , 21,067)	1.64	(1.52 , 1.78)	8,741	30,862,581	167	(155 , 179)	2.34	(1.96 , 2.80)
	South	(0.0124,0.0959]	406	1,379,619	35,985,659	22,585	(21,841 , 23,356)	1.83	(1.69 , 1.98)	7,847	35,985,659	129	(119 , 139)	1.81	(1.51 , 2.16)
	South	(0.0959,0.16]	331	1,088,181	29,465,624	21,756	(20,950 , 22,594)	1.76	(1.63 , 1.91)	6,052	29,465,624	121	(111 , 132)	1.70	(1.42 , 2.04)
	South	(0.16,0.231]	139	476,472	15,384,365	18,246	(17,233 , 19,317)	1.48	(1.35 , 1.62)	2,667	15,384,365	103	(90 , 117)	1.44	(1.17 , 1.77)
	South	(0.231,0.502]	81	290,832	13,882,219	12,342	(11,472 , 13,277)	1.00	(reference)	1,676	13,882,219	71	(60 , 84)	1.00	(reference)
	West	[-0.774,0.0124]	75	179,934	9,202,223	11,519	(10,498 , 12,640)	1.12	(1.00 , 1.27)	1,150	9,202,223	74	(60 , 90)	1.46	(1.11 , 1.93)
	West	(0.0124,0.0959]	78	437,496	22,687,105	11,360	(10,704 , 12,058)	1.11	(1.00 , 1.22)	3,811	22,687,105	99	(89 , 110)	1.96	(1.57 , 2.45)
	West	(0.0959,0.16]	113	280,492	12,445,775	13,299	(12,346 , 14,325)	1.30	(1.16 , 1.45)	2,229	12,445,775	106	(91 , 122)	2.09	(1.64 , 2.66)
	West	(0.16,0.231]	107	357,501	20,605,360	10,221	(9,569 , 10,917)	1.00	(0.90 , 1.10)	1,959	20,605,360	56	(48 , 65)	1.11	(0.87 , 1.42)
	West	(0.231,0.502]	73	232,727	13,373,661	10,252	(9,448 , 11,124)	1.00	(reference)	1,145	13,373,661	50	(41 , 62)	1.00	(reference)
Social Vulnerability Index (SVI)	Northeast	[0,0.267]	79	203,897	18,587,544	6,462	(5,921 , 7,054)	1.00	(reference)	934	18,587,544	30	(24 , 37)	1.00	(reference)
	Northeast	(0.267,0.46]	62	106,320	9,619,959	6,511	(5,768 , 7,350)	1.01	(0.87 , 1.17)	671	9,619,959	41	(32 , 53)	1.39	(0.99 , 1.94)
	Northeast	(0.46,0.62]	48	177,124	15,747,933	6,626	(6,032 , 7,279)	1.03	(0.90 , 1.16)	964	15,747,933	36	(29 , 45)	1.22	(0.90 , 1.65)
	Northeast	(0.62,0.768]	18	45,593	4,160,170	6,456	(5,365 , 7,769)	1.00	(0.82 , 1.22)	210	4,160,170	30	(19 , 48)	1.00	(0.60 , 1.67)
	Northeast	(0.768,1]	10	96,114	7,867,197	7,197	(6,336 , 8,176)	1.11	(0.96 , 1.30)	509	7,867,197	38	(28 , 52)	1.29	(0.89 , 1.86)
	Midwest	[0,0.267]	436	382,341	23,200,546	9,708	(9,107 , 10,349)	1.00	(reference)	2,167	23,200,546	55	(48 , 64)	1.00	(reference)
	Midwest	(0.267,0.46]	240	240,965	14,000,882	10,139	(9,355 , 10,989)	1.04	(0.94 , 1.16)	1,706	14,000,882	72	(61 , 85)	1.31	(1.05 , 1.62)
	Midwest	(0.46,0.62]	136	224,975	10,579,296	12,528	(11,526 , 13,617)	1.29	(1.16 , 1.43)	1,589	10,579,296	88	(75 , 105)	1.61	(1.29 , 2.00)
	Midwest	(0.62,0.768]	95	192,647	13,080,700	8,676	(7,929 , 9,494)	0.89	(0.80 , 1.00)	1,565	13,080,700	70	(59 , 84)	1.28	(1.03 , 1.60)
	Midwest	(0.768,1]	54	104,897	5,518,995	11,197	(9,911 , 12,650)	1.15	(1.01 , 1.32)	835	5,518,995	89	(70 , 113)	1.62	(1.23 , 2.12)
	South	[0,0.267]	131	380,524	16,240,579	13,803	(12,946 , 14,717)	1.00	(reference)	1,976	16,240,579	72	(62 , 84)	1.00	(reference)
	South	(0.267,0.46]	211	676,669	22,685,452	17,572	(16,748 , 18,437)	1.27	(1.18 , 1.38)	4,126	22,685,452	108	(97 , 120)	1.50	(1.25 , 1.80)
	South	(0.46,0.62]	226	962,582	25,120,441	22,574	(21,683 , 23,502)	1.64	(1.52 , 1.76)	4,259	25,120,441	100	(90 , 111)	1.39	(1.16 , 1.67)
	South	(0.62,0.768]	293	1,091,902	30,500,152	21,090	(20,307 , 21,903)	1.53	(1.42 , 1.64)	7,053	30,500,152	136	(126 , 148)	1.90	(1.60 , 2.25)
	South	(0.768,1]	561	1,185,717	31,033,824	22,508	(21,706 , 23,340)	1.63	(1.52 , 1.75)	9,569	31,033,824	182	(169 , 195)	2.53	(2.15 , 2.99)
	West	[0,0.267]	122	133,863	7,430,357	10,613	(9,526 , 11,824)	1.00	(reference)	727	7,430,357	58	(45 , 74)	1.00	(reference)
	West	(0.267,0.46]	84	310,038	19,303,729	9,462	(8,813 , 10,158)	0.89	(0.79 , 1.01)	1,651	19,303,729	50	(43 , 60)	0.87	(0.65 , 1.18)
	West	(0.46,0.62]	83	267,120	13,722,883	11,487	(10,642 , 12,399)	1.08	(0.95 , 1.23)	1,538	13,722,883	66	(56 , 79)	1.15	(0.85 , 1.55)
	West	(0.62,0.768]	58	460,028	22,399,392	12,099	(11,414 , 12,825)	1.14	(1.01 , 1.29)	4,059	22,399,392	107	(96 , 119)	1.85	(1.42 , 2.42)
	West	(0.768,1]	99	317,101	15,457,763	12,085	(11,266 , 12,964)	1.14	(1.00 , 1.29)	2,319	15,457,763	88	(77 , 102)	1.53	(1.16 , 2.04)
Minority Health SVI	Northeast	[0,0.412]	103	211,009	19,348,955	6,425	(5,885 , 7,014)	1.00	(reference)	1,013	19,348,955	31	(25 , 39)	1.00	(reference)
	Northeast	(0.412,0.618]	60	157,256	13,681,140	6,771	(6,117 , 7,496)	1.05	(0.92 , 1.20)	874	13,681,140	38	(30 , 48)	1.22	(0.88 , 1.69)
	Northeast	(0.618,0.773]	32	135,096	12,405,419	6,415	(5,749 , 7,160)	1.00	(0.87 , 1.15)	737	12,405,419	35	(27 , 46)	1.13	(0.81 , 1.59)
	Northeast	(0.773,0.908]	17	85,687	7,211,634	7,000	(6,099 , 8,034)	1.09	(0.93 , 1.28)	448	7,211,634	37	(26 , 51)	1.19	(0.80 , 1.77)
	Northeast	(0.908,1]	5	40,000	3,335,655	7,064	(5,774 , 8,643)	1.10	(0.89 , 1.36)	216	3,335,655	38	(23 , 62)	1.24	(0.73 , 2.09)
	Midwest	[0,0.412]	645	443,758	25,894,690	10,096	(9,503 , 10,726)	1.00	(reference)	2,726	25,894,690	62	(54 , 71)	1.00	(reference)
	Midwest	(0.412,0.618]	170	246,790	13,502,688	10,767	(9,928 , 11,678)	1.07	(0.97 , 1.18)	1,698	13,502,688	74	(62 , 88)	1.19	(0.96 , 1.48)
	Midwest	(0.618,0.773]	86	212,903	11,854,280	10,580	(9,695 , 11,547)	1.05	(0.94 , 1.16)	1,452	11,854,280	72	(60 , 87)	1.16	(0.93 , 1.46)

	Midwest	(0.773,0.908]	44	157,465	9,996,364	9,280	(8,383 , 10,273)	0.92	(0.82 , 1.03)	1,290	9,996,364	76	(62 , 93)	1.22	(0.97 , 1.55)
	Midwest	(0.908,1]	16	84,909	5,132,397	9,746	(8,486 , 11,193)	0.97	(0.83 , 1.12)	696	5,132,397	80	(61 , 105)	1.29	(0.96 , 1.73)
	South	[0,0.412]	273	338,982	13,204,209	15,124	(14,112 , 16,209)	1.00	(reference)	1,985	13,204,209	89	(76 , 104)	1.00	(reference)
	South	(0.412,0.618]	332	812,228	26,490,509	18,063	(17,272 , 18,890)	1.19	(1.10 , 1.29)	4,901	26,490,509	109	(99 , 121)	1.23	(1.02 , 1.48)
	South	(0.618,0.773]	298	840,766	23,834,734	20,781	(19,887 , 21,715)	1.37	(1.27 , 1.49)	4,962	23,834,734	123	(111 , 136)	1.38	(1.15 , 1.66)
	South	(0.773,0.908]	310	1,341,495	33,804,768	23,378	(22,578 , 24,207)	1.55	(1.43 , 1.67)	6,811	33,804,768	119	(109 , 129)	1.34	(1.12 , 1.60)
	South	(0.908,1]	209	963,923	28,246,228	20,104	(19,295 , 20,947)	1.33	(1.23 , 1.44)	8,324	28,246,228	174	(161 , 188)	1.96	(1.64 , 2.33)
	West	[0,0.412]	192	128,114	6,311,399	11,958	(10,684 , 13,385)	1.00	(reference)	828	6,311,399	77	(60 , 99)	1.00	(reference)
	West	(0.412,0.618]	79	208,823	13,051,714	9,426	(8,629 , 10,295)	0.79	(0.69 , 0.91)	1,112	13,051,714	50	(41 , 62)	0.65	(0.47 , 0.90)
	West	(0.618,0.773]	67	292,886	16,391,468	10,526	(9,770 , 11,341)	0.88	(0.77 , 1.00)	1,886	16,391,468	68	(57 , 80)	0.88	(0.65 , 1.17)
	West	(0.773,0.908]	51	301,715	13,806,583	12,893	(11,981 , 13,875)	1.08	(0.95 , 1.23)	1,947	13,806,583	83	(71 , 98)	1.07	(0.80 , 1.44)
	West	(0.908,1]	57	556,612	28,752,960	11,404	(10,804 , 12,038)	0.95	(0.84 , 1.08)	4,521	28,752,960	93	(83 , 103)	1.20	(0.92 , 1.56)
political lean (2020)	Northeast	[-0.894,-0.346]	25	173,018	16,125,730	6,321	(5,806 , 6,882)	1.00	(reference)	872	16,125,730	32	(26 , 39)	1.00	(reference)
	Northeast	(-0.346,-0.143]	37	157,533	15,311,888	6,061	(5,544 , 6,626)	0.96	(0.85 , 1.08)	754	15,311,888	29	(23 , 36)	0.91	(0.67 , 1.24)
	Northeast	(-0.143,0.00776]	33	111,552	9,850,771	6,671	(6,001 , 7,416)	1.06	(0.92 , 1.21)	545	9,850,771	33	(25 , 43)	1.02	(0.73 , 1.43)
	Northeast	(0.00776,0.265]	59	127,426	9,887,095	7,593	(6,876 , 8,383)	1.20	(1.06 , 1.37)	715	9,887,095	43	(34 , 54)	1.34	(0.98 , 1.82)
	Northeast	(0.265,0.931]	63	59,519	4,807,319	7,294	(6,310 , 8,432)	1.15	(0.98 , 1.36)	402	4,807,319	49	(36 , 67)	1.55	(1.07 , 2.24)
	Midwest	[-0.894,-0.346]	13	122,134	11,168,700	6,442	(5,822 , 7,128)	1.00	(reference)	807	11,168,700	43	(34 , 53)	1.00	(reference)
	Midwest	(-0.346,-0.143]	24	179,457	11,056,988	9,561	(8,796 , 10,394)	1.48	(1.31 , 1.69)	1,125	11,056,988	60	(50 , 72)	1.41	(1.06 , 1.87)
	Midwest	(-0.143,0.00776]	49	140,146	9,491,645	8,698	(7,914 , 9,560)	1.35	(1.18 , 1.55)	866	9,491,645	54	(43 , 67)	1.26	(0.93 , 1.71)
	Midwest	(0.00776,0.265]	212	312,492	18,383,635	10,014	(9,400 , 10,668)	1.55	(1.38 , 1.75)	1,929	18,383,635	62	(54 , 71)	1.45	(1.12 , 1.88)
	Midwest	(0.265,0.931]	662	391,433	16,275,630	14,168	(13,390 , 14,992)	2.20	(1.96 , 2.46)	3,134	16,275,630	114	(101 , 127)	2.67	(2.09 , 3.40)
	South	[-0.894,-0.346]	57	233,481	13,542,442	10,157	(9,440 , 10,928)	1.00	(reference)	1,606	13,542,442	70	(60 , 82)	1.00	(reference)
	South	(-0.346,-0.143]	82	634,781	22,297,250	16,771	(16,043 , 17,533)	1.65	(1.52 , 1.80)	3,504	22,297,250	93	(83 , 103)	1.32	(1.10 , 1.59)
	South	(-0.143,0.00776]	87	878,046	24,291,820	21,294	(20,505 , 22,113)	2.10	(1.93 , 2.27)	3,542	24,291,820	86	(78 , 96)	1.23	(1.02 , 1.48)
	South	(0.00776,0.265]	260	1,065,774	28,279,152	22,202	(21,455 , 22,976)	2.19	(2.02 , 2.37)	5,923	28,279,152	124	(114 , 134)	1.76	(1.48 , 2.10)
	South	(0.265,0.931]	936	1,485,312	37,169,784	23,541	(22,868 , 24,234)	2.32	(2.15 , 2.50)	12,408	37,169,784	197	(186 , 208)	2.81	(2.39 , 3.31)
	West	[-0.894,-0.346]	35	346,308	23,580,977	8,652	(8,147 , 9,188)	1.00	(reference)	1,939	23,580,977	48	(42 , 56)	1.00	(reference)
	West	(-0.346,-0.143]	46	290,673	16,269,202	10,525	(9,857 , 11,239)	1.22	(1.12 , 1.33)	1,693	16,269,202	61	(53 , 71)	1.27	(1.03 , 1.55)
	West	(-0.143,0.00776]	43	439,781	22,081,380	11,733	(11,124 , 12,376)	1.36	(1.25 , 1.47)	3,330	22,081,380	89	(80 , 99)	1.83	(1.54 , 2.19)
	West	(0.00776,0.265]	85	222,675	9,235,927	14,203	(13,178 , 15,309)	1.64	(1.49 , 1.80)	1,665	9,235,927	106	(91 , 124)	2.19	(1.78 , 2.69)
	West	(0.265,0.931]	210	165,812	6,462,328	15,116	(13,858 , 16,487)	1.75	(1.58 , 1.94)	1,580	6,462,328	144	(123 , 169)	2.97	(2.41 , 3.66)

Figure 1a: COVID−19 case rate per 100,000 person−years by county % below poverty for US and by federal regions, July 1−September 15, 2021

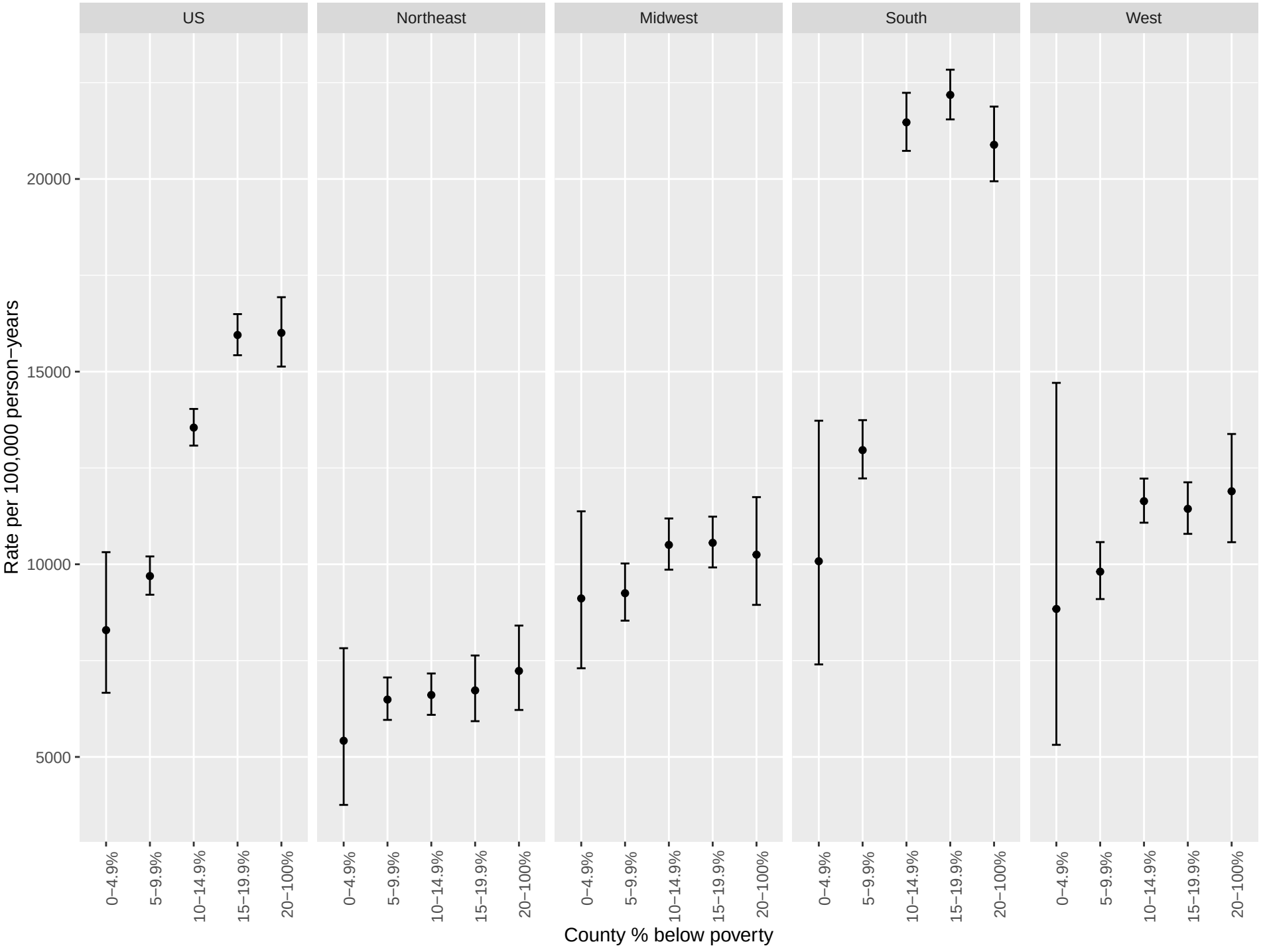


Figure 1b: COVID−19 case rate per 100,000 person−years by county % population of color quintile for US and by federal regions, July 1−September 15, 2021

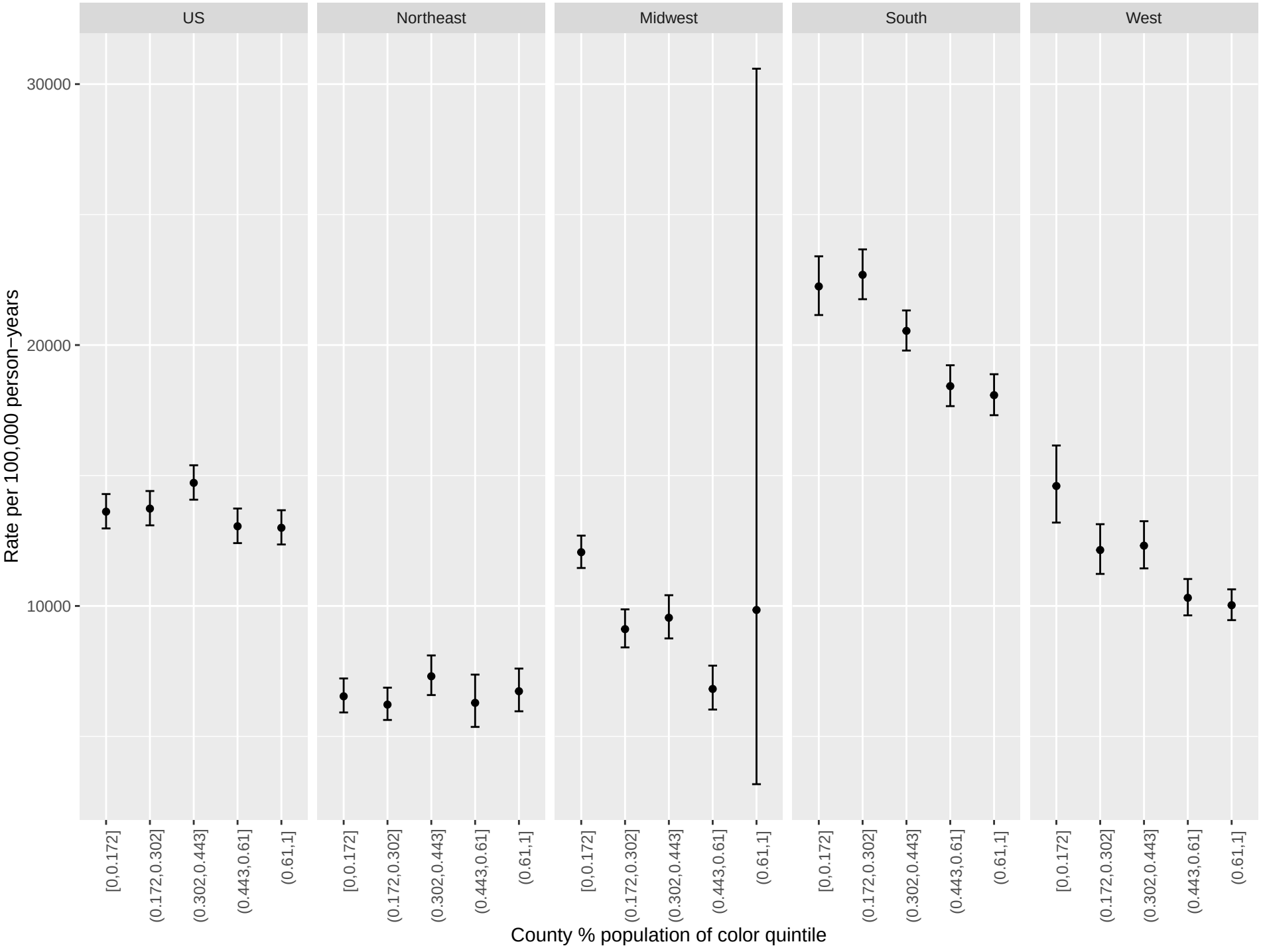


Figure 1c: COVID−19 case rate per 100,000 person−years by county racialized economic segregation (ICE) quintile for US and by federal regions, July 1−September 15, 2021

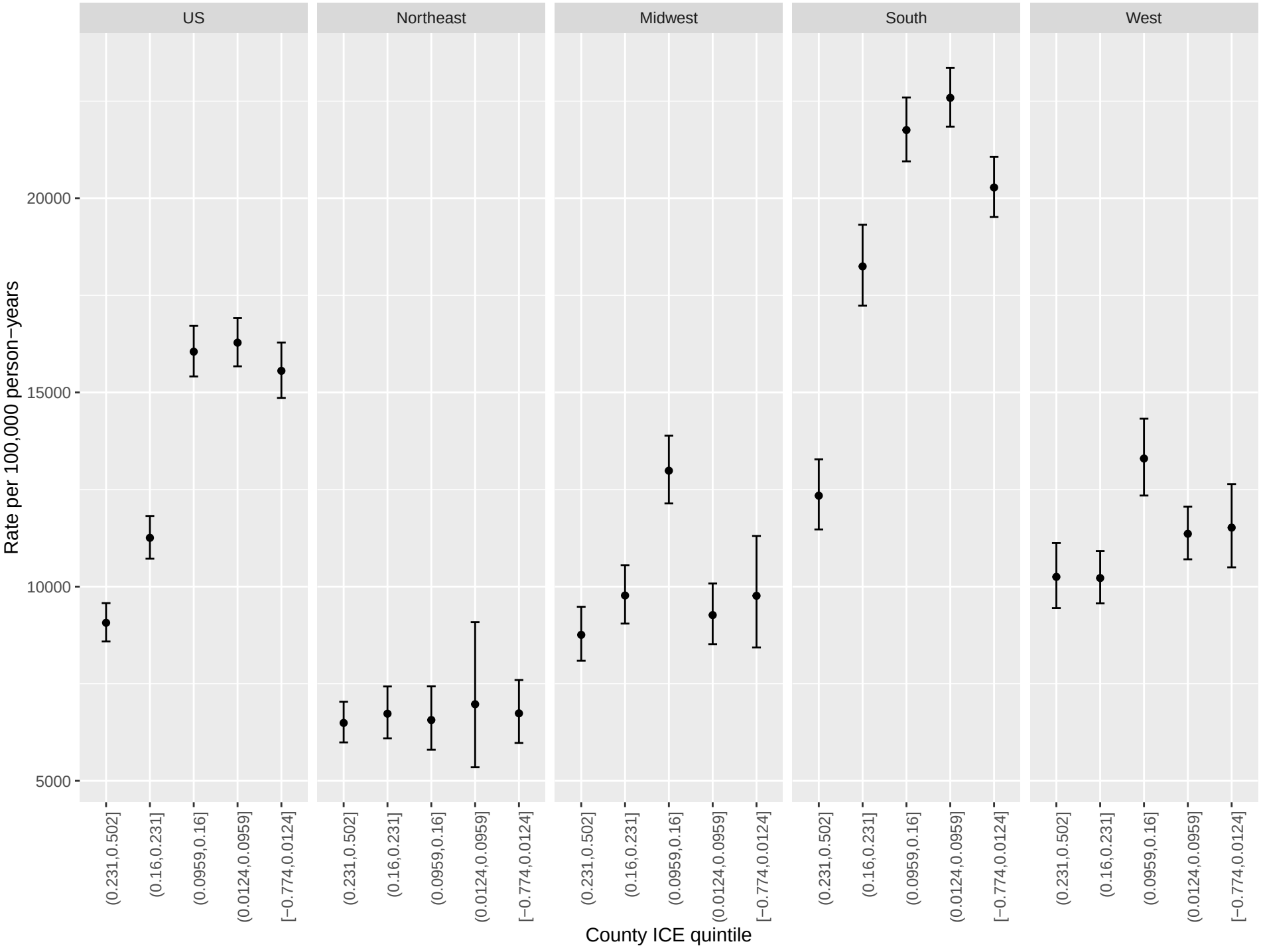


Figure 1d: COVID−19 case rate per 100,000 person−years by county SVI quintile for US and by federal regions, July 1−September 15, 2021

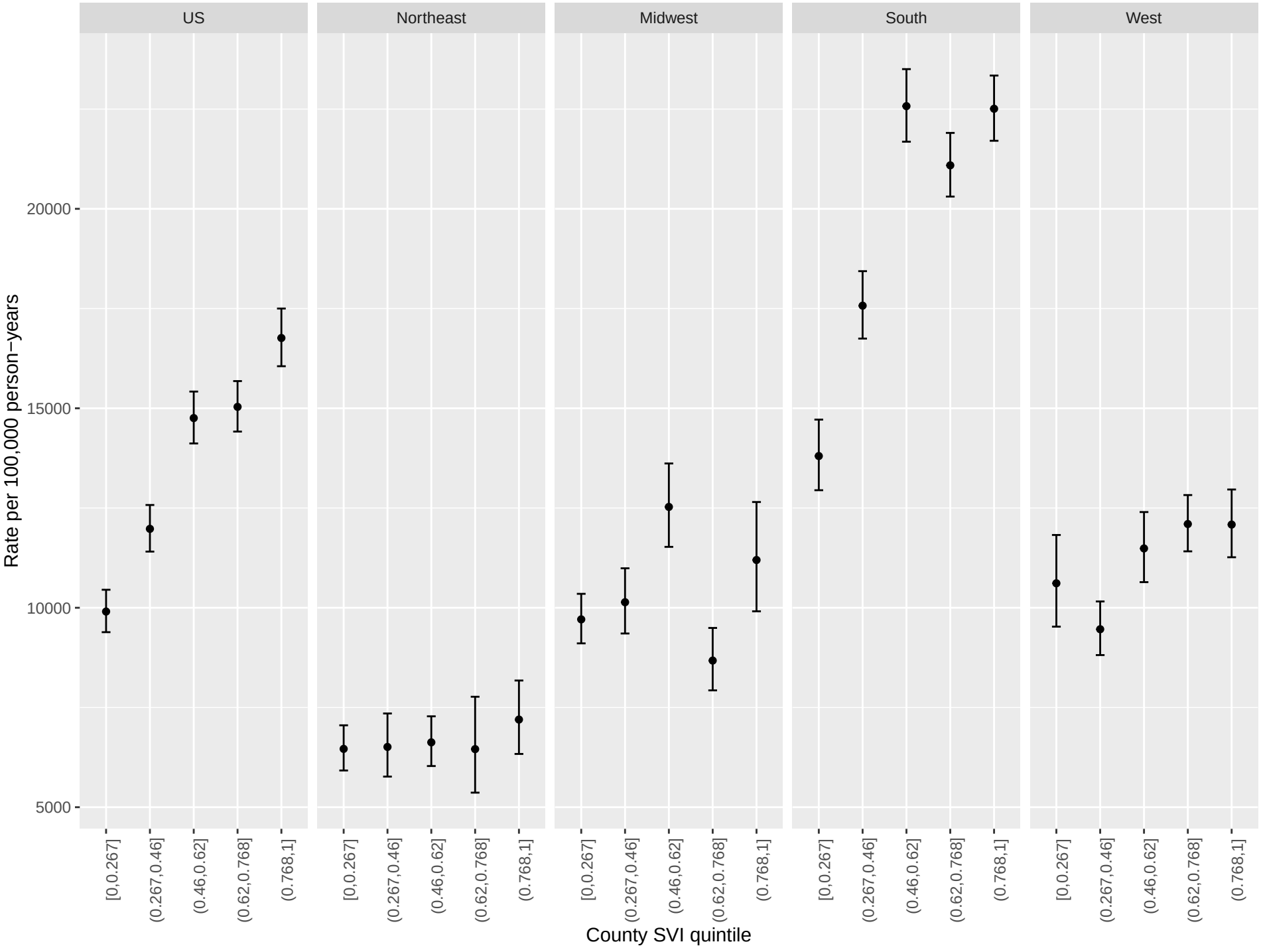


Figure 1e: COVID−19 case rate per 100,000 person−years by county Minority Health SVI quintile for US and by federal regions, July 1−September 15, 2021

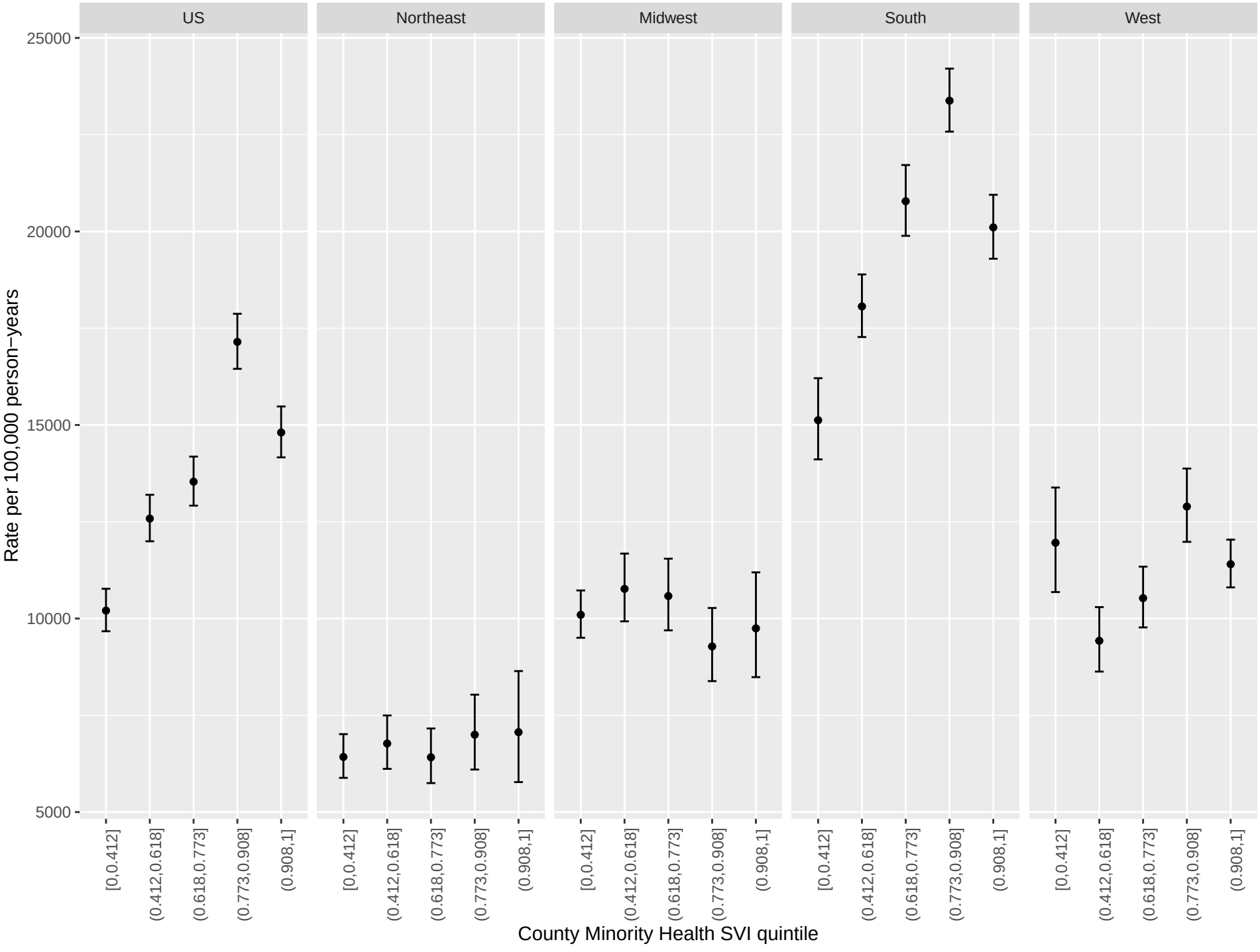


Figure 1f: COVID−19 case rate per 100,000 person−years by county political lean quintile for US and by federal regions, July 1−September 15, 2021

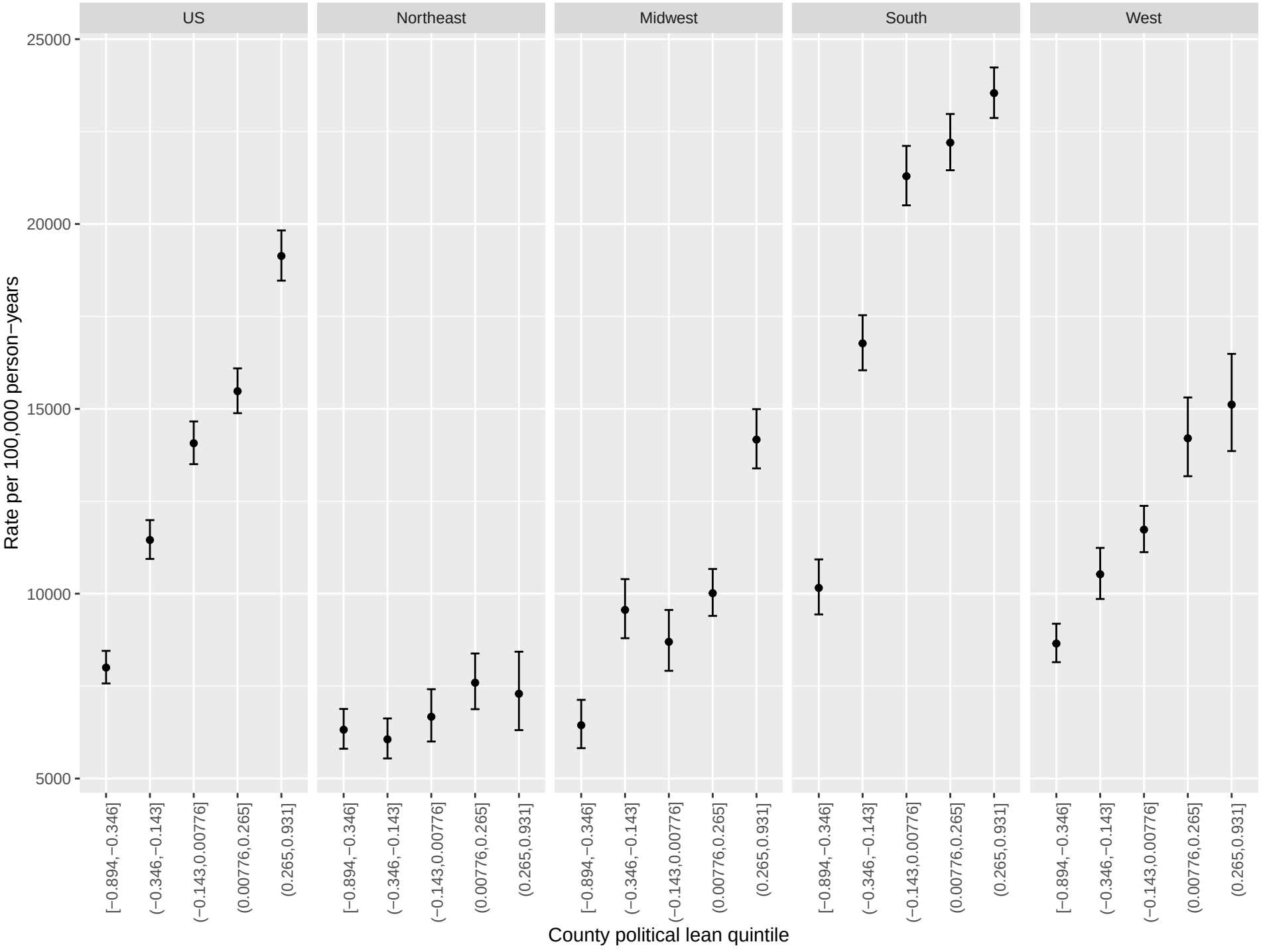


Figure 2a: COVID−19 death rate per 100,000 person−years by county % below poverty for US and by federal regions, July 1−September 15, 2021

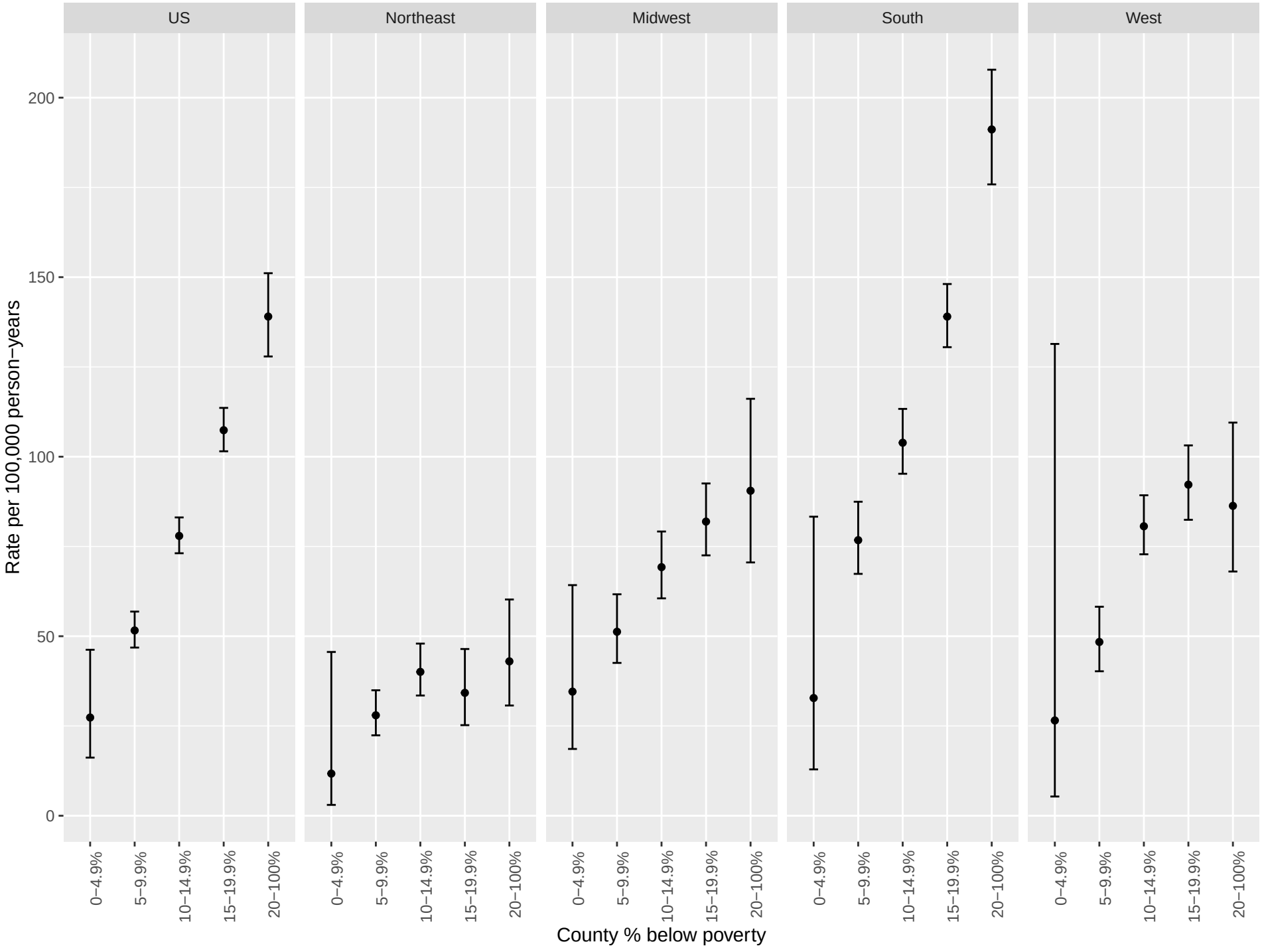


Figure 2b: COVID−19 death rate per 100,000 person−years by county % population of color quintile for US and by federal regions, July 1−September 15, 2021

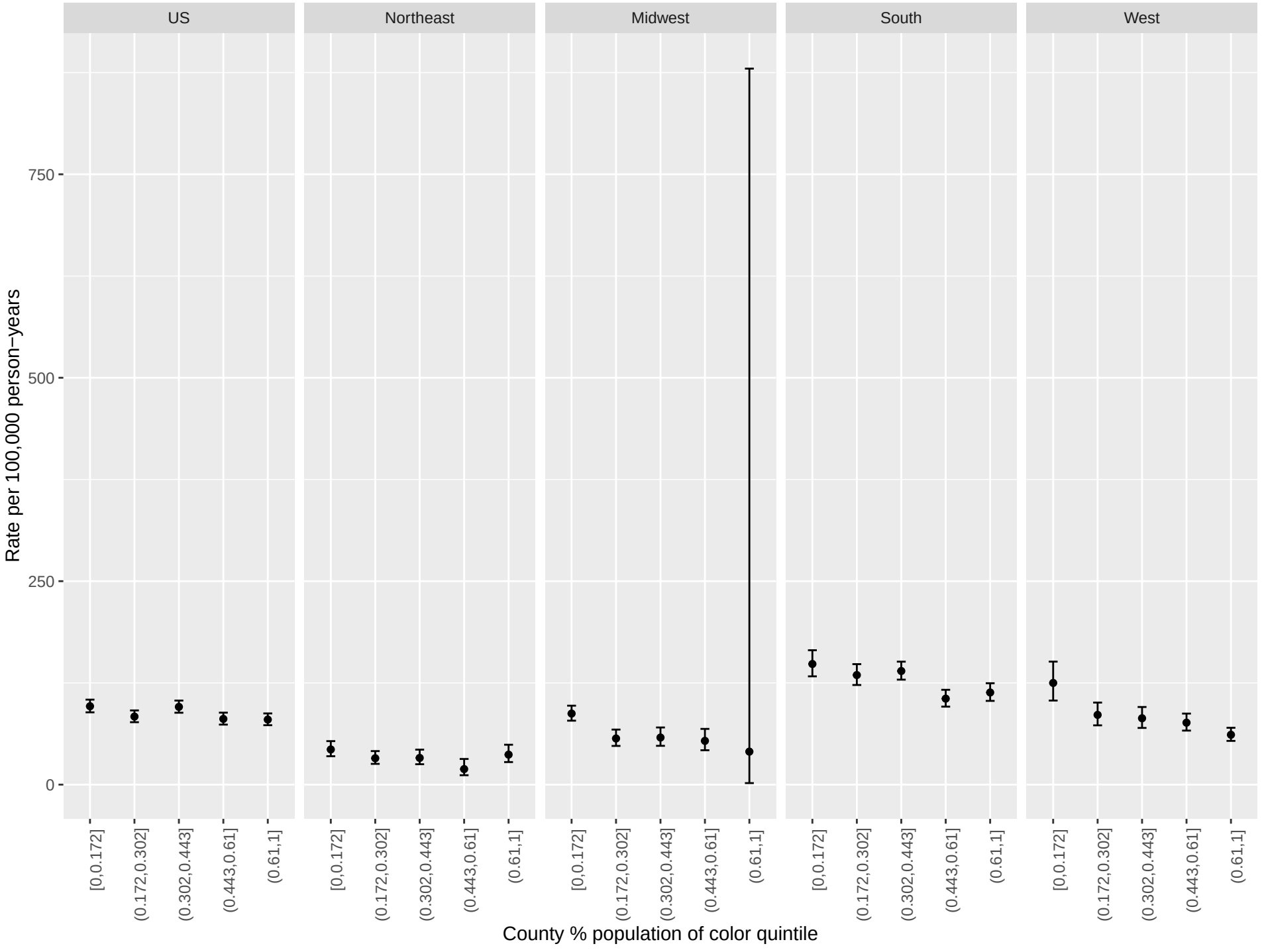


Figure 2c: COVID−19 death rate per 100,000 person−years by county racialized economic segregation (ICE) quintile for US and by federal regions, July 1−September 15, 2021

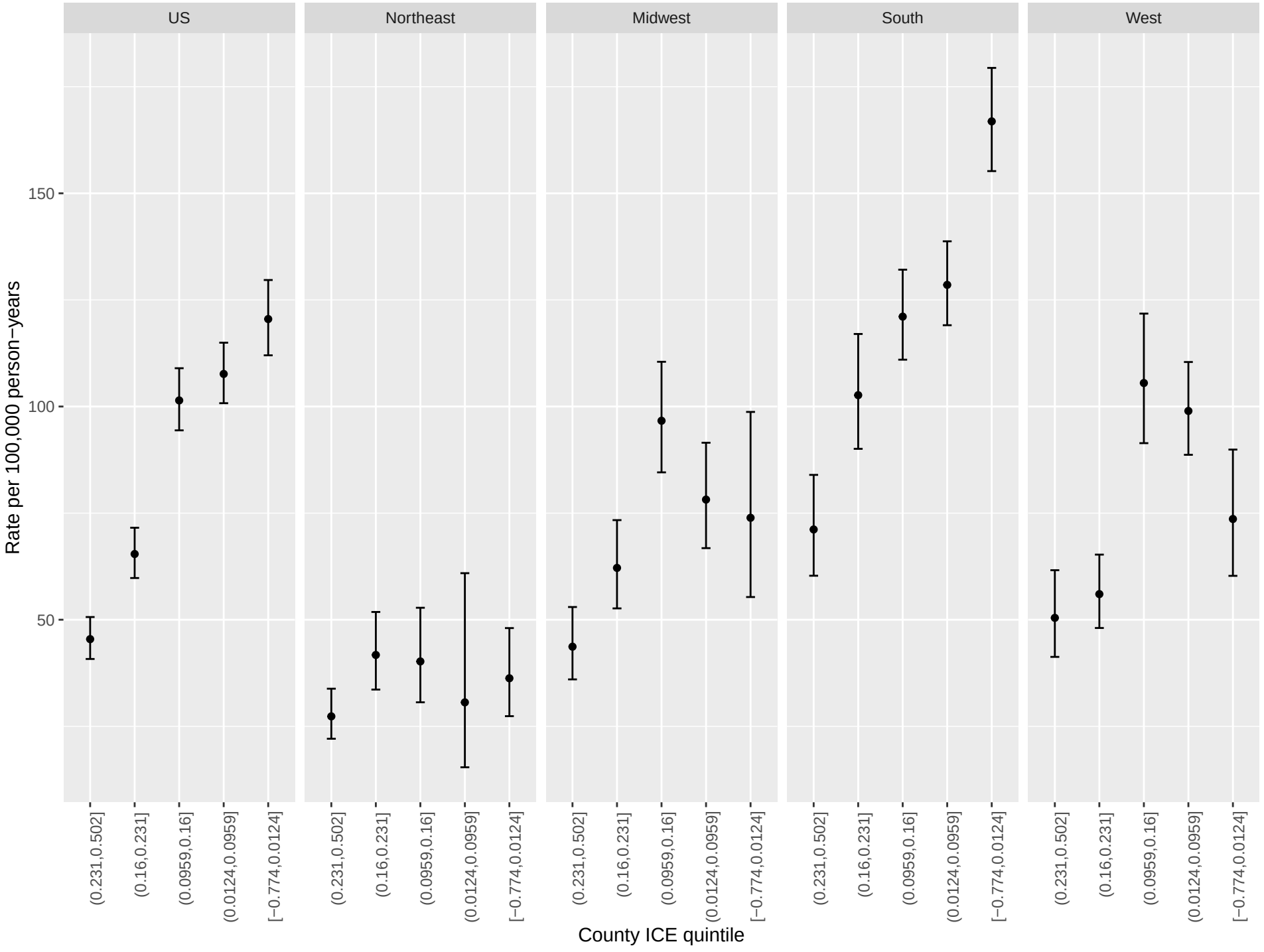


Figure 2d: COVID−19 death rate per 100,000 person−years by county SVI quintile for US and by federal regions, July 1−September 15, 2021

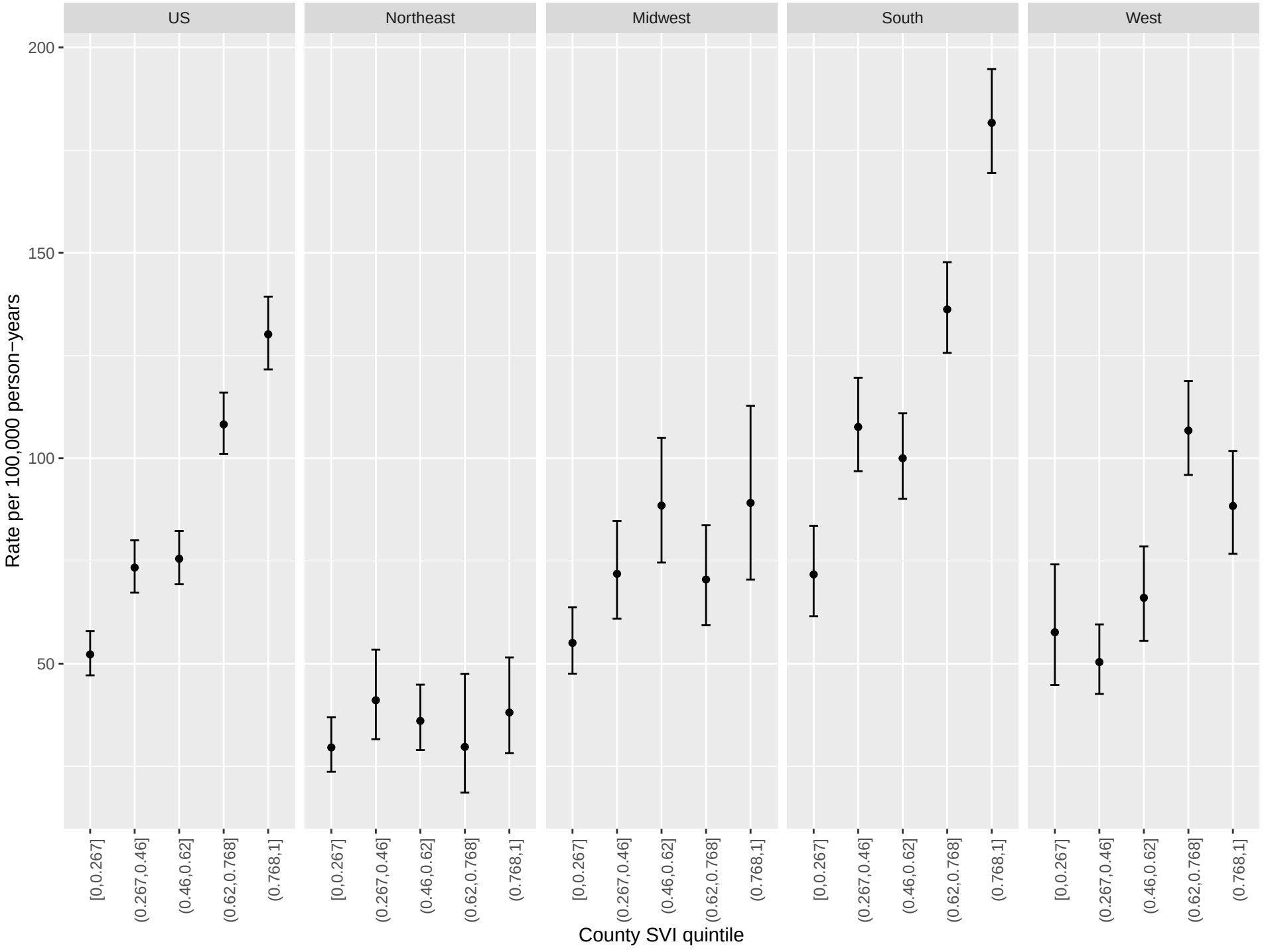


Figure 2e: COVID−19 death rate per 100,000 person−years by county Minority Health SVI quintile for US and by federal regions, July 1−September 15, 2021

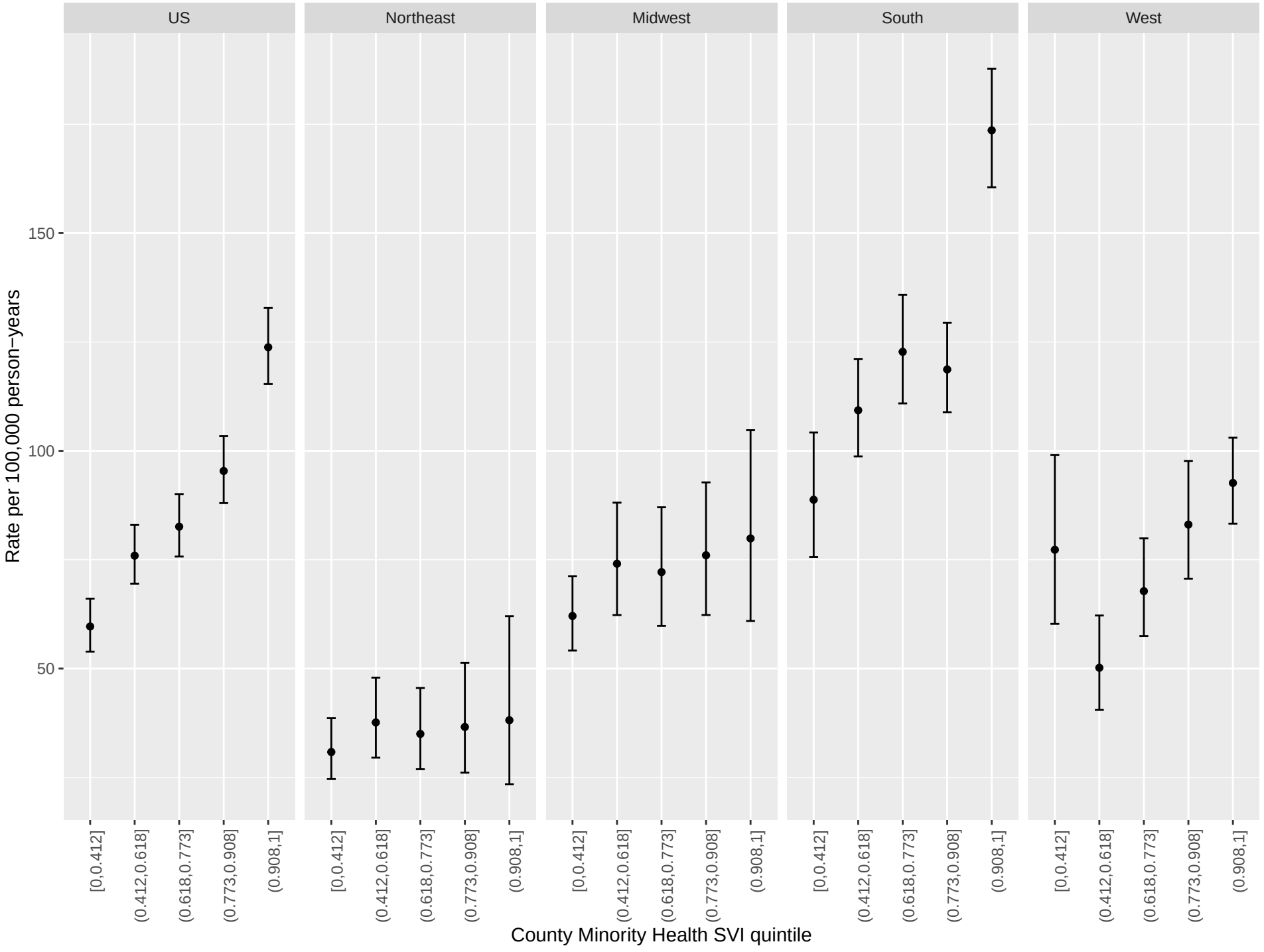


Figure 2f: COVID−19 death rate per 100,000 person−years by county political lean quintile for US and by federal regions, July 1−September 15, 2021

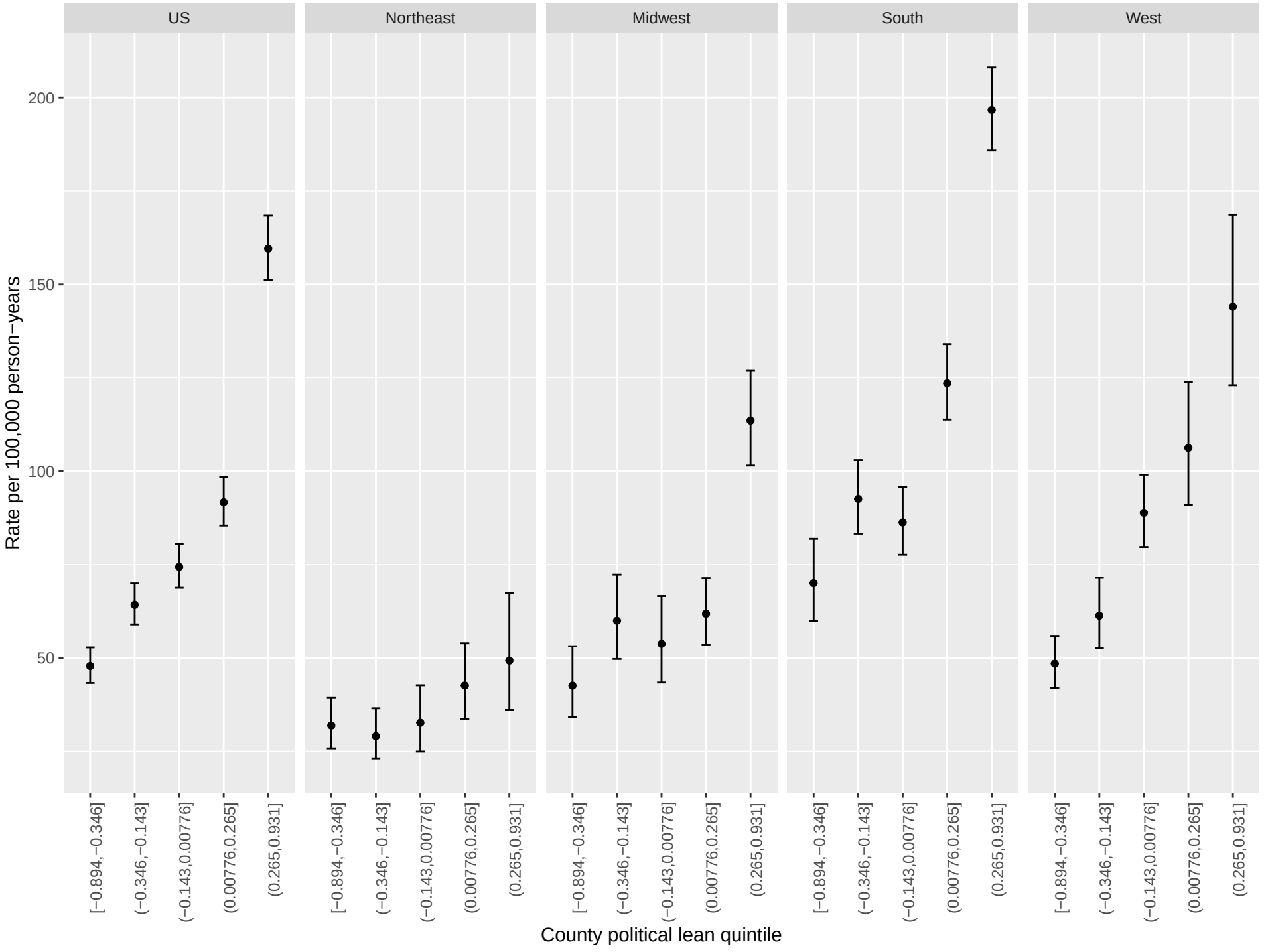
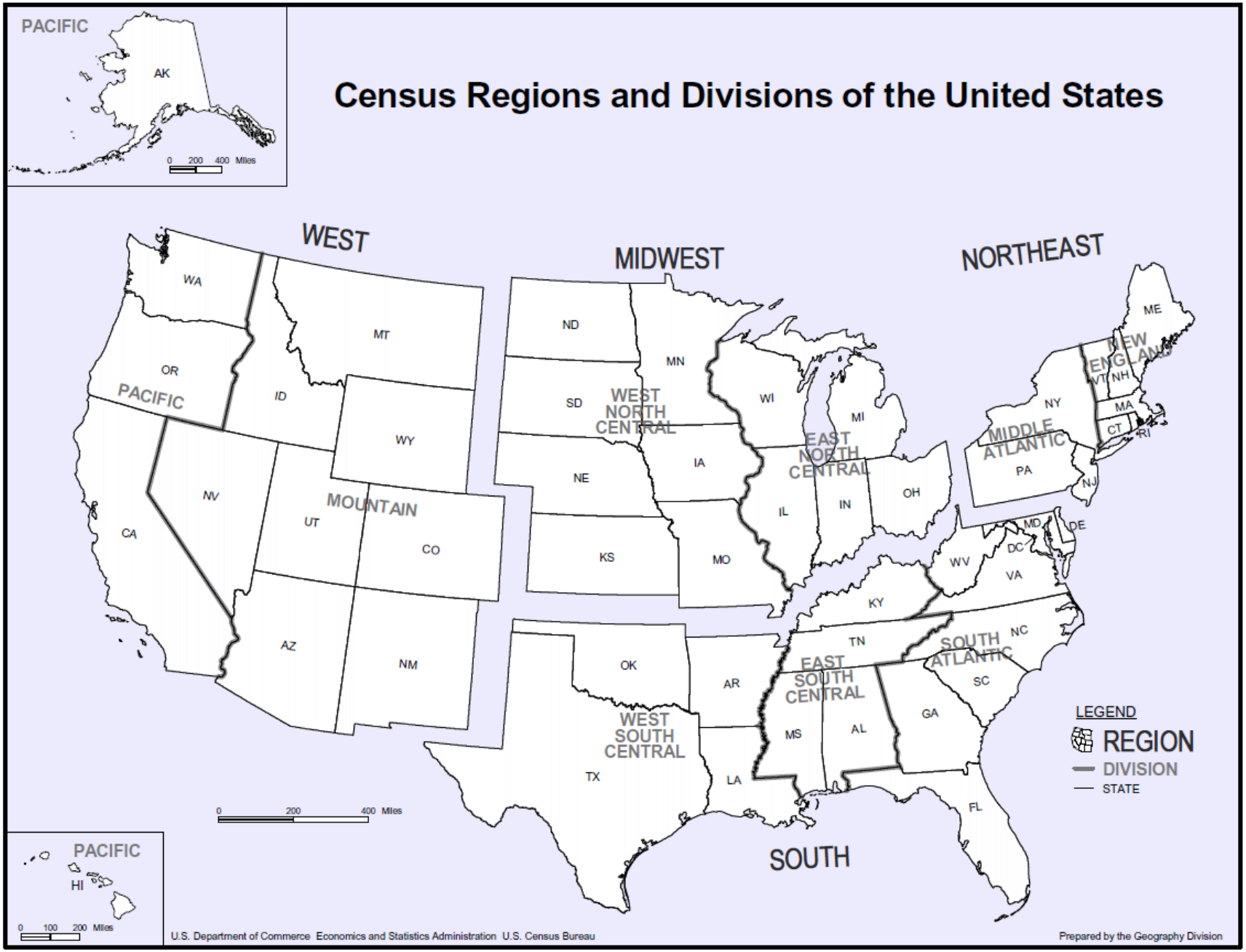


Figure S1. US census regions, as defined by the US Census Bureau.



[Source: https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf ; accessed October 6, 2021]