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**Supplemental Table 1. Characteristics by race/ethnicity among patients on hemodialysis (n = 1,378).**

[illegible]

Van service	33	35	32	48	14	<0.001
Private vehicle	16	23	25	25	6	
Public transportation	2	2	5	2	2	
Other, unknown, or missing	50	40	38	25	79	
<b>Dialysis-related Medical History</b>						
Dialysis vintage (years)^	2.3 [1.0 – 4.9]	4.0 [1.8 – 7.1]	3.7 [1.7 – 5.4]	3.3 [1.4 – 6.0]	2.4 [1.3 – 5.4]	<0.001
<b>Primary kidney failure cause</b>						
Diabetes	36	39	43	49	52	<0.001
Hypertension	27	33	27	22	22	
Glomerulonephritis	10	12	10	11	9	
Cystic kidney disease	4	2	1	2	1	
HIV	0	3	0	0	5	
Malignancy	3	1	0.5	0	0	
Post-transplant	4	3	7	8	2	
Other or unknown	15	7	11	6	10	

^Dialysis vintage presented as median [interquartile range] and reported among patients classified as ESRD as of March 1, 2020 (n = 1362). Percentages may not add to 100% due to rounding. P-values presented for chi-squared tests for categorical variables and Wilcoxon rank-sum tests for continuous variables.

**Supplemental Figure 1. Timing of COVID-19 cases among patients on hemodialysis and across New York City ZIP Code Tabulation Areas.**

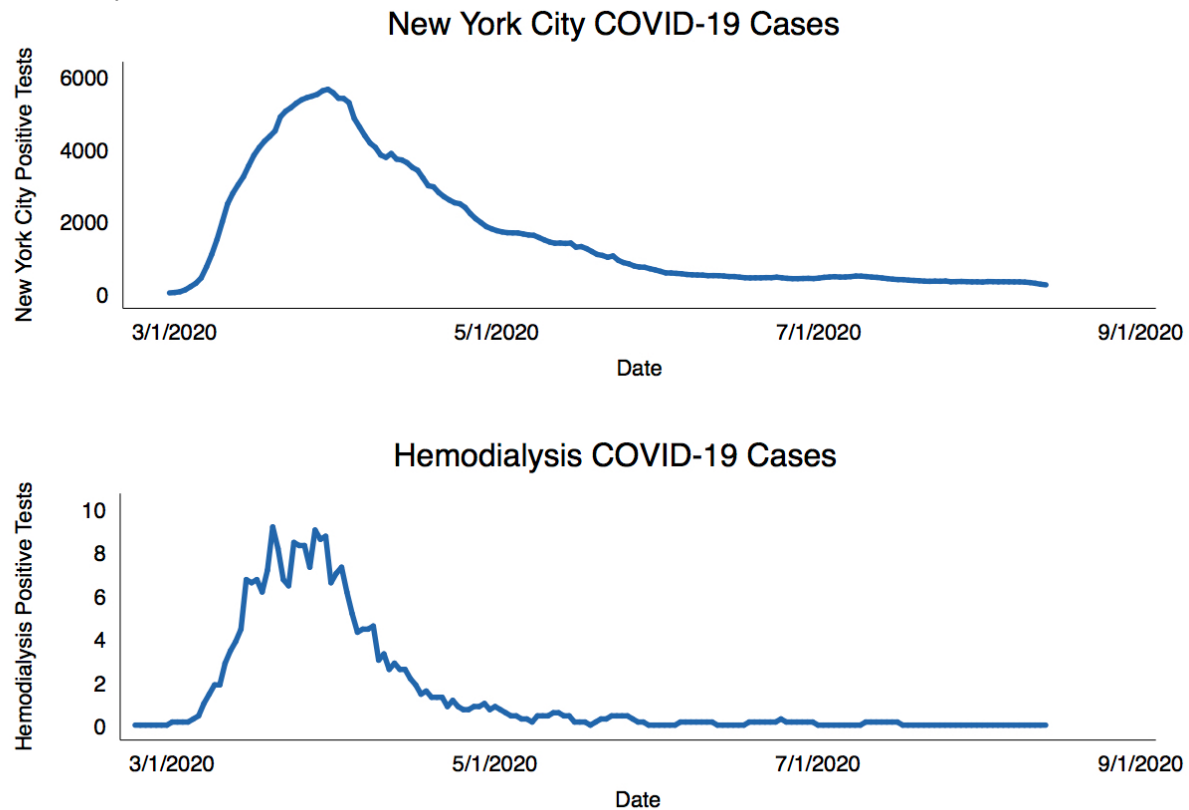
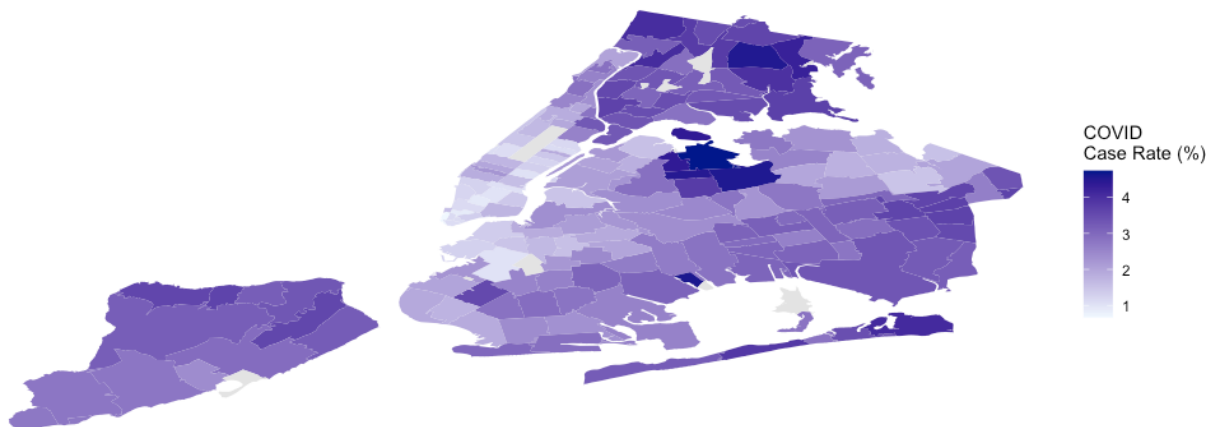


Figure depicts 7-day moving averages of PCR-positive COVID-19 cases.

**Supplemental Figure 2. COVID-19 cumulative cases by PCR testing in the New York City general population.**



Data presented are the percentage PCR+ cases divided by the population denominator at the modified ZIP Code Tabulation Area (ZCTA)-level ascertained until August 25, 2020.

**Supplemental Table 2. COVID-19 cumulative cases by PCR testing in the New York City general population by race/ethnicity.<sup>a</sup>**

Race/Ethnicity	COVID-19 Cumulative Cases per 100,000 individuals	Relative COVID-19 Cumulative Cases
White	1111.24	1 (ref.)
Black/African-American	1763.03	1.59
Hispanic/Latino	1825.3	1.64
Asian/Pacific-Islander	726.05	0.65

COVID-19 cumulative cases adjusted for age at diagnosis and ascertained until August 25, 2020.

<sup>a</sup>Accessed August 25, 2020. <https://www1.nyc.gov/site/doh/covid/covid-19-data-testing.page>

**Supplemental Table 3. Dialysis unit Social Vulnerability Index and cumulative COVID-19 cases.**

Dialysis Unit	Dialysis Unit SVI (%tile)	Cumulative Dialysis Unit COVID-19 Cases (%)
A	49.3	17
B	92.2	15
C	19.5	34
D	98.0	28
E	80.3	22
F	40.9	14
G	71.4	16
H	67.0	34

COVID-19 cases ascertained until August 3, 2020.

**Supplemental Table 4. Association of Race/Ethnicity and Social Vulnerability Index with COVID-19 among patients on hemodialysis, stratified by time period.**

Variable	Time Period 1 OR (95% CI) (n at-risk = 1378)	p-values	Time Period 2 OR (95% CI) (n at-risk = 1364)	p-values	Time Period 3 OR (95% CI) (n at-risk = 1195)	p-values
<b>Race/Ethnicity</b>						
Non-Hispanic white ( <i>ref.</i> )	1	--	1	--	1	--
Non-Hispanic Black	1.27 (0.34 – 4.75)	0.718	1.66 (0.88 – 3.10)	0.115	1.65 (0.73 – 3.70)	0.228
Hispanic	2.15 (0.29 – 15.8)	0.453	<b>2.64</b> <b>(1.31 – 5.33)</b>	0.007	2.06 (0.87 – 4.84)	0.099
Asian or Pacific Islander	2.56 (0.66 – 10.0)	0.176	1.48 (0.86 – 2.55)	0.158	0.78 (0.19 – 3.29)	0.738
Other, unknown, or missing	1.18 (0.14 – 9.86)	0.880	1.20 (0.60 – 2.38)	0.610	0.79 (0.31 – 2.05)	0.631
<b>Overall Social Vulnerability Index</b>						
Quintile 1 ( <i>ref.</i> )	1	0.785	1	0.336	1	0.829
Quintile 2	0.97 (0.18 – 5.29)		1.39 (0.87 – 2.21)		1.01 (0.44 – 2.32)	
Quintile 3	1.99 (0.58 – 6.82)		1.37 (0.99 – 1.90)		0.82 (0.31 – 2.16)	
Quintile 4	1.99 (0.24 – 16.2)		1.33 (0.66 – 2.68)		1.57 (0.44 – 5.58)	
Quintile 5	0.99 (0.13 – 7.58)		1.28 (0.70 – 2.33)		1.12 (0.44 – 2.89)	

Results presented are from unadjusted logistic regression models. SVI calculated at the census tract-level. Quintile 1 of SVI represents the lowest level of social vulnerability. Quintile 5 of SVI represents the highest level of social vulnerability.

Time periods analyzed were March 1 – March 21 (time period 1, pre-stay-at-home order), March 22 – April 14 (time period 2, pre-mask order), and April 15 – June 7 (time period 3, before reopening), and June 8 – August 3 (time period 4, reopening). Participants diagnosed with COVID-19 were removed from the at-risk patient population during subsequent time periods. There were 14 COVID-19 cases during time period 1, 171 cases during time period 2, and 55 cases during time period 3, and 5 cases during time period 4. Results from time period 4 not presented due to the small number of cases.

**Supplemental Table 5. Association of Race/Ethnicity and Social Vulnerability Index with COVID-19 among patients on hemodialysis (n = 1378), in a time-to-event analysis accounting for the competing risk of death.**

Variable	Unadjusted sHR (95% CI)	p-values	Model 1 sHR (95% CI)	p-values	Model 2 sHR (95% CI)	p-values
<b>Race/Ethnicity</b>						
Non-Hispanic white ( <i>ref.</i> ) (n = 294)	1	--	1	--	1	--
Non-Hispanic Black (n = 578)	<b>1.60</b> (1.10 – 2.33)	0.014	<b>1.65</b> (1.09 – 2.49)	0.018	<b>1.65</b> (1.08 – 2.52)	0.021
Hispanic (n = 207)	<b>2.43</b> (1.60 – 3.69)	<0.001	<b>2.57</b> (1.64 – 4.03)	<0.001	<b>2.34</b> (1.48 – 3.71)	<0.001
Asian or Pacific Islander (n = 174)	1.31 (0.79 – 2.16)	0.297	1.18 (0.70 – 1.99)	0.544	1.20 (0.68 – 2.13)	0.528
Other, unknown, or missing (n = 125)	1.18 (0.67 – 2.08)	0.562	1.25 (0.67 – 2.31)	0.486	1.33 (0.67 – 2.68)	0.417
<b>Overall Social Vulnerability Index</b>						
Quintile 1 ( <i>ref.</i> )	1	0.475	1	0.962	1	0.953
Quintile 2	1.30 (0.86 – 1.98)		1.08 (0.71 – 1.64)		1.03 (0.67 – 1.58)	
Quintile 3	1.29 (0.85 – 1.97)		1.01 (0.65 – 1.57)		1.01 (0.65 – 1.57)	
Quintile 4	1.47 (0.98 – 2.21)		1.15 (0.75 – 1.75)		1.15 (0.74 – 1.79)	
Quintile 5	1.29 (0.85 – 1.95)		1.06 (0.68 – 1.65)		1.10 (0.69 – 1.74)	

SVI calculated at the census tract-level. Quintile 1 of SVI represents the lowest level of social vulnerability. Quintile 5 of SVI represents the highest level of social vulnerability.

From March 1 to August 3, 2020, 118 patients died in total, 17 patients received transplants, 6 patients withdrew dialysis and/or transferred to hospice, and 8 patients switched to PD or HHD. Results are from a Fine and Gray subdistribution hazard model estimating the association of race/ethnicity with the subhazard of COVID-19, accounting for the competing risk of death and censoring at transplant, dialysis withdrawal, and modality change. Separately, a Fine and Gray subdistribution hazard model was used to estimate the association of overall SVI quintile with the subhazard of COVID-19, accounting for the competing risk of death and censoring events.

Model 1 adjusted for age, sex, race/ethnicity or SVI, individual-level social factors (employment, marital status, transportation type to dialysis), and dialysis-related medical history (dialysis vintage, primary kidney failure cause). Model 2 additionally adjusted for dialysis facility factors (unit fixed effects and dialysis unit SVI).

**Supplemental Table 6. Association of Race/Ethnicity with COVID-19 among patients on hemodialysis (n = 1378), accounting for Race/Ethnicity and SVI interactions.**

Variable	Adjusted OR (95% CI)	p-values
<b>Race/Ethnicity and Overall SVI</b>		
Race/Ethnicity		
Non-Hispanic white ( <i>ref.</i> ) (n = 294)	1	--
Non-Hispanic Black (n = 578)	<b>2.78</b> <b>(1.31 – 5.90)</b>	0.008
Hispanic (n = 207)	3.38 (0.25 – 45.3)	0.358
Asian or Pacific Islander (n = 174)	0.95 (0.12 – 7.64)	0.964
Other, unknown, or missing (n = 125)	2.74 (0.47 – 15.97)	0.262
Race/Ethnicity*Overall SVI <sup>†</sup>		
Non-Hispanic white*Overall SVI	1.08 (0.96 – 1.21)	0.201
Non-Hispanic Black*Overall SVI	0.99 (0.92 – 1.07)	0.788
Hispanic*Overall SVI	1.03 (0.81 – 1.07)	0.834
Asian or Pacific Islander*Overall SVI	1.12 (0.95 – 1.33)	0.186
Other, unknown, or missing*Overall SVI	0.95 (0.79 – 1.14)	0.576
<b>Race/Ethnicity and Socioeconomic Status SVI Theme</b>		
Race/Ethnicity		
Non-Hispanic white ( <i>ref.</i> )	1	--
Non-Hispanic Black	<b>3.77</b> <b>(1.79 – 7.95)</b>	<0.001
Hispanic	2.91 (0.41 – 20.7)	0.286
Asian or Pacific Islander	1.38 (0.32 – 5.94)	0.670
Other, unknown, or missing	<b>3.79</b> <b>(1.05 – 13.7)</b>	0.042
Race/Ethnicity*Socioeconomic Status SVI Theme <sup>†</sup>		
Non-Hispanic white*Socioeconomic Status	<b>1.11</b> <b>(1.02 – 1.20)</b>	0.013
Non-Hispanic Black*Socioeconomic Status	0.95 (0.88 – 1.03)	0.206
Hispanic*Socioeconomic Status	1.06 (0.86 – 1.30)	0.604
Asian or Pacific Islander*Socioeconomic Status	1.07 (0.95 – 1.22)	0.275



Other, unknown, or missing*Socioeconomic Status	0.91 (0.79 – 1.05)	0.210
<b>Race/Ethnicity and Household Composition &amp; Disability SVI Theme</b>		
Race/Ethnicity		
Non-Hispanic white ( <i>ref.</i> )	1	--
Non-Hispanic Black	1.05 (0.47 – 2.38)	0.900
Hispanic	2.39 (0.48 – 12.0)	0.290
Asian or Pacific Islander	0.69 (0.17 – 2.86)	0.608
Other, unknown, or missing	1.06 (0.24 – 4.75)	0.942
Race/Ethnicity* Household Composition & Disability SVI Theme <sup>†</sup>		
Non-Hispanic white*Household Composition & Disability	0.90 (0.76 – 1.07)	0.233
Non-Hispanic Black* Household Composition & Disability	1.02 (0.96 – 1.08)	0.580
Hispanic*Household Composition & Disability	0.94 (0.82 – 1.08)	0.399
Asian or Pacific Islander*Household Composition & Disability	1.09 (0.94 – 1.28)	0.265
Other, unknown, or missing*Household Composition & Disability	0.96 (0.83 – 1.11)	0.595
<b>Race/Ethnicity and Minority Status &amp; Language SVI Theme</b>		
Race/Ethnicity		
Non-Hispanic white ( <i>ref.</i> )	1	--
Non-Hispanic Black	7.85 (4.08 – 15.1)	<0.001
Hispanic	4.22 (0.70 – 25.4)	0.116
Asian or Pacific Islander	5.24 (1.37 – 20.0)	0.015
Other, unknown, or missing	3.86 (0.11 – 140.8)	0.462
Race/Ethnicity*Minority Status & Language SVI Theme <sup>†</sup>		
Non-Hispanic white*Minority Status & Language	1.22 (1.07 – 1.38)	0.002
Non-Hispanic Black*Minority Status & Language	0.97 (0.88 – 1.07)	0.523
Hispanic*Minority Status & Language	1.11 (0.94 – 1.31)	0.214
Asian or Pacific Islander*Minority Status & Language	0.99 (0.87 – 1.13)	0.887
Other, unknown, or missing*Minority Status & Language	1.02 (0.69 – 1.50)	0.927
<b>Race/Ethnicity and Housing Type &amp; Transportation SVI Theme</b>		

Race/Ethnicity		
Non-Hispanic white ( <i>ref.</i> )	1	--
Non-Hispanic Black	2.14 (0.87 – 5.29)	0.098
Hispanic	2.79 (0.69 – 11.4)	0.152
Asian or Pacific Islander	0.90 (0.26 – 3.11)	0.863
Other, unknown, or missing	1.05 (0.35 – 3.15)	0.936
Race/Ethnicity*Housing Type & Transportation SVI Theme <sup>†</sup>		
Non-Hispanic white*Housing Type & Transportation	1.05 (0.95 – 1.16)	0.340
Non-Hispanic Black*Housing Type & Transportation	1.01 (0.93 – 1.10)	0.766
Hispanic*Housing Type & Transportation	1.04 (0.90 – 1.21)	0.594
Asian or Pacific Islander*Housing Type & Transportation	<b>1.11</b> <b>(1.01 – 1.22)</b>	0.032
Other, unknown, or missing*Housing Type & Transportation	1.07 (0.95 – 1.21)	0.270
Race/Ethnicity and Housing Crowding		
Race/Ethnicity		
Non-Hispanic white ( <i>ref.</i> )	1	--
Non-Hispanic Black	8.20 (4.09 – 16.4)	<0.001
Hispanic	16.03 (2.37 – 108.5)	0.004
Asian or Pacific Islander	3.39 (0.47 – 24.5)	0.226
Other, unknown, or missing	2.99 (0.12 – 72.3)	0.500
Race/Ethnicity*Housing Crowding <sup>†</sup>		
Non-Hispanic white*Housing Crowding	1.24 (1.11 – 1.37)	<0.001
Non-Hispanic Black*Housing Crowding	0.98 (0.89 – 1.08)	0.719
Hispanic*Housing Crowding	0.96 (0.78 – 1.17)	0.672
Asian or Pacific Islander*Housing Crowding	1.07 (0.92 – 1.24)	0.382
Other, unknown, or missing*Housing Crowding	1.08 (0.74 – 1.57)	0.687

Overall SVI, SVI themes, and housing crowding calculated at the census tract-level and expressed as percentiles.

<sup>†</sup>Presented are odds ratios of COVID-19 positivity per 10 percentile increase.

**Supplemental Table 7. Association of Social Vulnerability Index with COVID-19 among patients on hemodialysis (n = 1378), stratified by race/ethnicity (adjusted analyses).**

Variable	Non-Hispanic white (n = 294) OR (95% CI)	p-value	Non-Hispanic Black (n = 578) OR (95% CI)	p-value	Hispanic (n = 207) OR (95% CI)	p-value	Asian or Pacific Islander (n = 174) OR (95% CI)	p-value	Other, Unknown, or Missing (n = 125) OR (95% CI)	p-value
<b>Overall Social Vulnerability Index<sup>†</sup></b>										
SVI	1.00 (0.88 – 1.14)	0.994	0.98 (0.89 – 1.09)	0.759	1.03 (0.76 – 1.40)	0.864	1.10 (0.90 – 1.35)	0.364	1.00 (0.80 – 1.25)	0.992
<b>Social Vulnerability Index Theme<sup>†</sup></b>										
Socioeconomic status	1.03 (0.95 – 1.12)	0.520	0.93 (0.85 – 1.03)	0.168	1.06 (0.82 – 1.37)	0.663	1.04 (0.88 – 1.24)	0.634	0.99 (0.84 – 1.17)	0.897
Household composition & disability	<b>0.84</b> <b>(0.70 – 0.99)</b>	0.039	1.02 (0.95 – 1.09)	0.603	0.95 (0.80 – 1.13)	0.561	1.13 (0.89 – 1.45)	0.324	1.05 (0.93 – 1.18)	0.417
Minority status & language	1.05 (0.92 – 1.19)	0.492	0.98 (0.86 – 1.11)	0.722	1.15 (0.96 – 1.37)	0.136	0.87 (0.70 – 1.08)	0.207	1.26 (0.72 – 2.21)	0.419
Housing type & transportation	1.14 (0.94 – 1.37)	0.194	1.03 (0.94 – 1.14)	0.491	1.05 (0.87 – 1.26)	0.633	1.11 (0.97 – 1.28)	0.138	1.05 (0.88 – 1.24)	0.603
<b>Social Vulnerability Index Component<sup>†</sup></b>										
Housing Crowding*	<b>1.14</b> <b>(1.03 – 1.26)</b>	0.010	0.98 (0.86 – 1.11)	0.708	0.94 (0.76 – 1.15)	0.538	0.88 (0.75 – 1.04)	0.132	1.08 (0.73 – 1.59)	0.715

<sup>†</sup>Presented as adjusted odds ratios of COVID-19 positivity per 10 percentile increase in overall SVI, SVI theme, or SVI component.

Overall SVI, SVI themes, and SVI component calculated at the census tract-level.

Housing crowding defined as the percentage of occupied housing units in a census tract with more people than rooms.

All analyses adjusted for age, sex, individual-level social factors (employment, marital status, transportation type to dialysis), dialysis-related medical history (dialysis vintage, primary kidney failure cause), and dialysis facility factors (unit fixed effects and dialysis unit SVI).