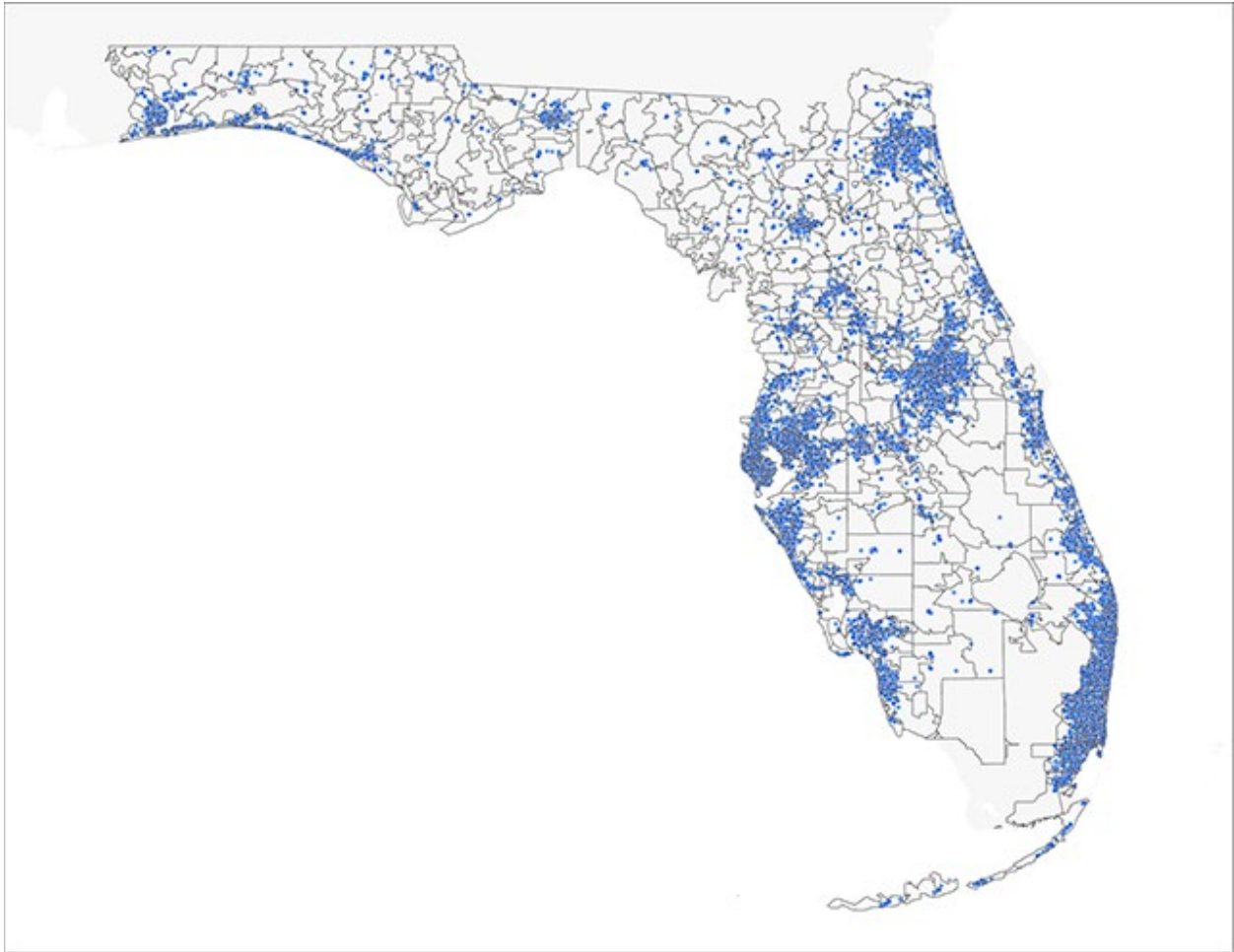
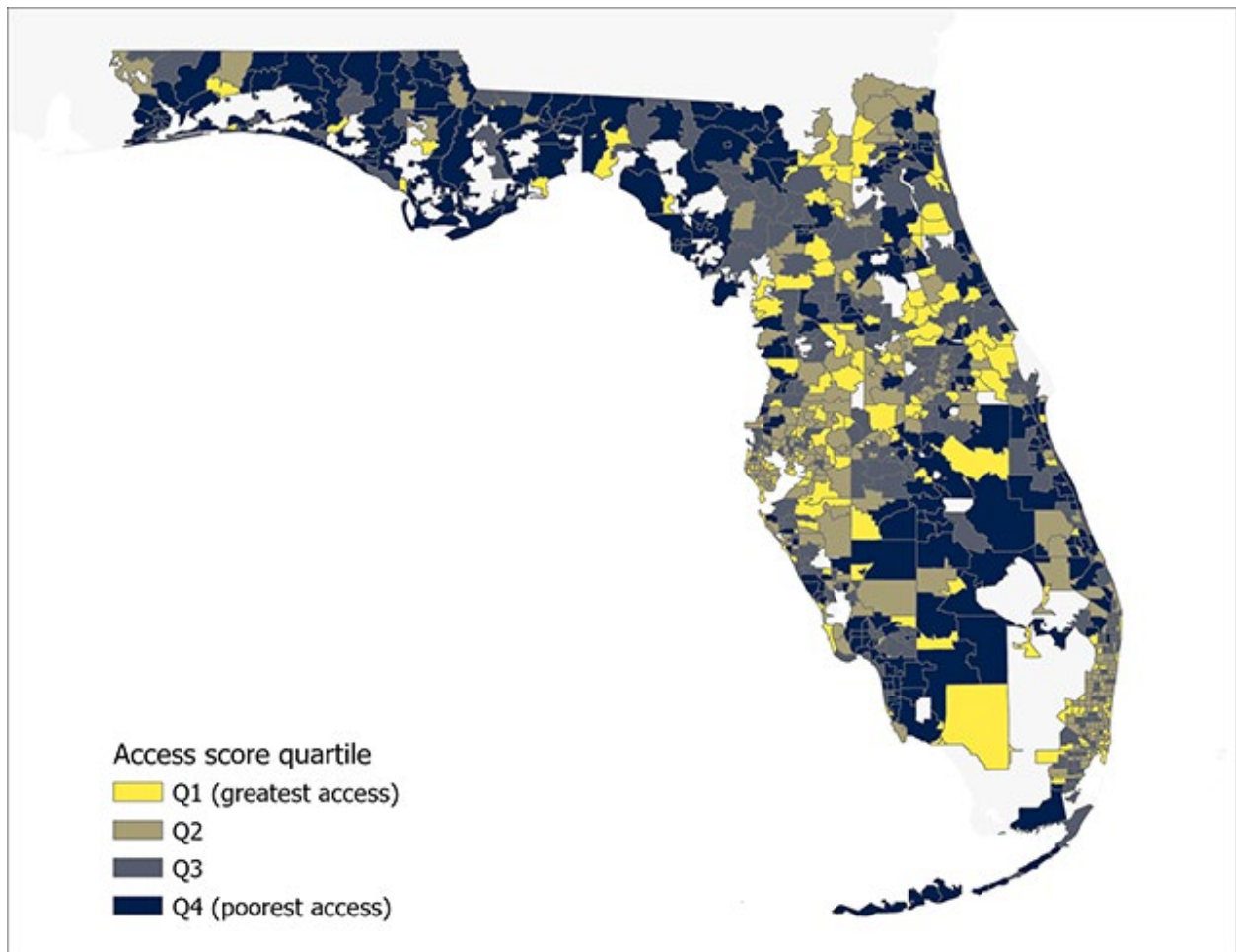


**Figure S1. Geocoded primary care provider locations**



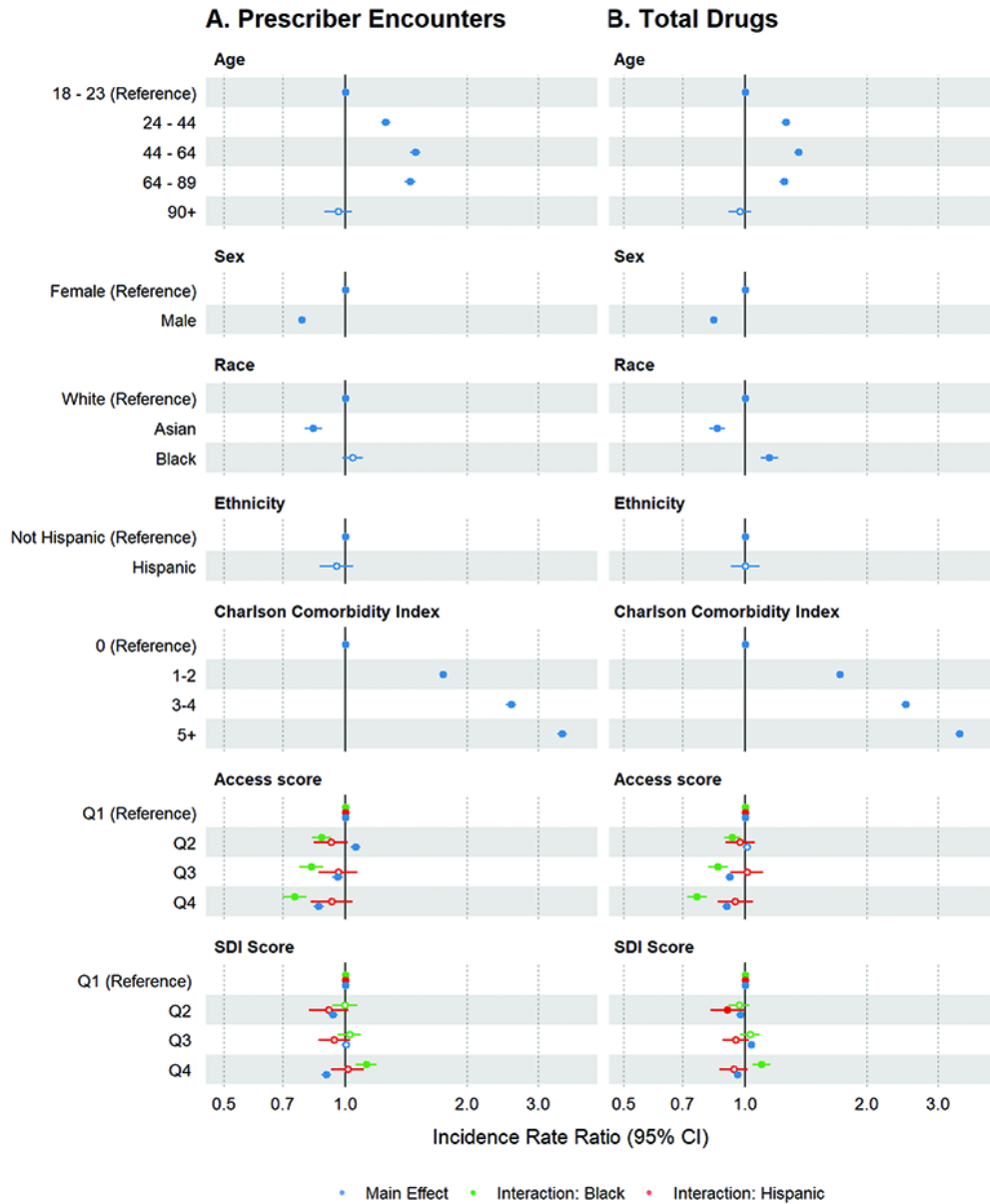
Individual primary care provider practice addresses are represented by blue dots.

**Figure S2. ZCTA access scores using 60-minute drive time thresholds and geographic centroids**



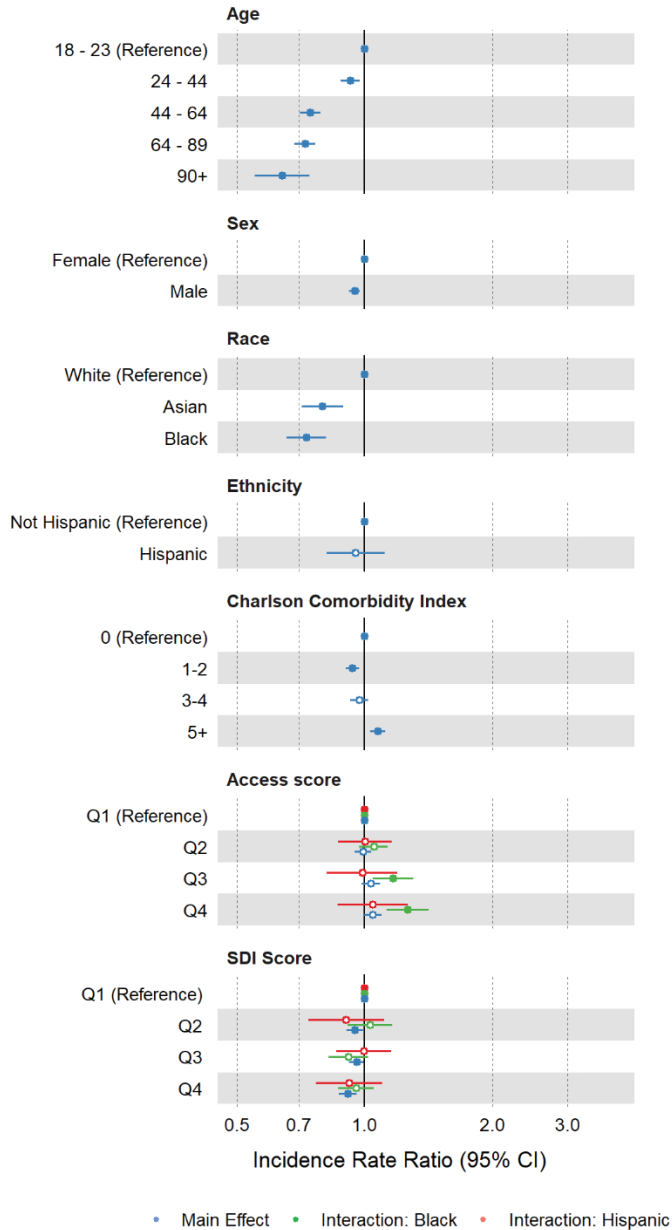
Geographic access scores were calculated for each ZCTA using geographic centroids and a 60-minute drive time cutoff, where yellow shading indicates ZCTAs in greatest access quartile and dark blue indicates ZCTAs in the poorest access quartile.

**Figure S3. Regional analysis incidence rate ratios: encounters and total drugs**



Incidence rate ratios and 95% confidence intervals were derived from regression model covariate coefficients and standard errors for the (a) prescriber encounter and (b) total drug models. Main effects are depicted in blue and interaction effects are depicted in green for interaction with Black race or red for interaction with Hispanic or Latino ethnicity. Shaded circles indicate p-values < 0.05 and open circles indicate p-values ≥ 0.05. SDI: social deprivation index.

**Figure S4. Regional analysis incidence rate ratios: adjusted PGx guideline drugs**



Incidence rate ratios and 95% confidence intervals were derived from regression model covariate coefficients and standard errors for the adjusted PGx guideline drug count model. Main effects are depicted in blue and interaction effects are depicted in green for interaction with Black race or red for interaction with Hispanic or Latino ethnicity. Shaded circles indicate p-values < 0.05 and open circles indicate p-values  $\geq 0.05$ . SDI: social deprivation index.

**Table S1. Drug-gene pairs with published Clinical Pharmacogenetic Implementation Consortium Guidelines as of March 2020**

<b>Drug</b>	<b>Gene</b>
abacavir	<i>HLA-B</i>
allopurinol	<i>HLA-B</i>
amitriptyline	<i>CYP2C19</i> <i>CYP2D6</i>
atazanavir	<i>UGT1A1</i>
atomoxetine	<i>CYP2D6</i>
azathioprine	<i>NUDT15</i> <i>TPMT</i>
capecitabine	<i>DPYD</i>
carbamazepine	<i>HLA-A</i> <i>HLA-B</i>
citalopram	<i>CYP2C19</i>
clomipramine	<i>CYP2C19</i> <i>CYP2D6</i>
clopidogrel	<i>CYP2C19</i>
codeine	<i>CYP2D6</i>
desflurane	<i>CACNA1S</i> <i>RYR1</i>
desipramine	<i>CYP2D6</i>
doxepin	<i>CYP2C19</i> <i>CYP2D6</i>
efavirenz	<i>CYP2B6</i>
enflurane	<i>CACNA1S</i> <i>RYR1</i>
escitalopram	<i>CYP2C19</i>
fluorouracil	<i>DPYD</i>
fluvoxamine	<i>CYP2D6</i>
fosphenytoin	<i>CYP2C9</i> <i>HLA-B</i>
halothane	<i>CACNA1S</i> <i>RYR1</i>
imipramine	<i>CYP2C19</i> <i>CYP2D6</i>
isoflurane	<i>CACNA1S</i> <i>RYR1</i>
ivacaftor	<i>CFTR</i>
mercaptopurine	<i>NUDT15</i> <i>TPMT</i>
methoxyflurane	<i>CACNA1S</i> <i>RYR1</i>
nortriptyline	<i>CYP2D6</i>
ondansetron	<i>CYP2D6</i>

oxcarbazepine	<i>HLA-A</i> <i>HLA-B</i>
paroxetine	<i>CYP2C19</i> <i>CYP2D6</i>
peginterferon alfa-2a	<i>IFNL3</i> <i>IFNL4</i>
peginterferon alfa-2b	<i>IFNL3</i> <i>IFNL4</i>
phenytoin	<i>CYP2C9</i> <i>HLA-B</i>
rasburicase	<i>G6PD</i>
sertraline	<i>CYP2C19</i>
sevoflurane	<i>CACNA1S</i> <i>RYR1</i>
simvastatin	<i>SLCO1B1</i>
succinylcholine	<i>CACNA1S</i> <i>RYR1</i>
tacrolimus	<i>CYP3A5</i>
tamoxifen	<i>CYP2D6</i>
thioguanine	<i>NUDT15</i> <i>TPMT</i>
trimipramine	<i>CYP2C19</i> <i>CYP2D6</i>
tropisetron	<i>CYP2D6</i>
voriconazole	<i>CYP2C19</i>
warfarin	<i>CYP2C9</i> <i>CYP4F2</i> <i>VKORC1</i>

**Table S2. Access score and Social Deprivation Index score quartile breakpoints**

	Q1	Q2	Q3	Q4
Social deprivation index score	1 - 32	>32 - 60	>60 - 74	>74 - 100
Activity score: geographic centroid, 30 minute drive time	>0.129 – 6.84	>0.064 – 0.129	>0.027 – 0.064	0 – 0.027
Activity score: geographic centroid, 60 minute drive time	>0.454 – 13.93	>0.251 – 0.454	>0.133 – 0.251	0 – 0.133
Activity score: population-weighted centroid, 30 minute drive time	0.133 – 6.81	>0.065 – 0.133	>0.028 – 0.065	0 – 0.028
Activity score: population-weighted centroid, 60 minute drive time	>0.461 – 13.97	>0.252 – 0.461	>0.137 – 0.252	0.006 – 0.137
UF Health catchment area activity score: geographic centroid, 30 minute drive time	>0.093 – 5.41	>0.049 – 0.093	>0.023 – 0.049	0 – 0.023
UF Health catchment area activity score: geographic centroid, 60 minute drive time	>0.205 – 13.99	>0.141 – 0.205	>0.09 – 0.141	0.005 – 0.09

**Table S3. Incidence rate ratios for prescriber encounters, total drug count, PGx guideline drug count, and PGx guideline drug count adjusted for total drug count**

	Prescriber encounters	Unique drugs	PGx guideline drugs	Adjusted PGx guideline drugs
<b>Age</b>				
18 - 23	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
24 - 44	1.26 (1.22 - 1.29)	1.25 (1.22 - 1.28)	1.15 (1.09 - 1.2)	0.91 (0.86 - 0.95)
44 - 64	1.46 (1.43 - 1.5)	1.32 (1.29 - 1.35)	0.99 (0.94 - 1.04)	0.75 (0.71 - 0.79)
64 - 89	1.39 (1.35 - 1.43)	1.21 (1.18 - 1.24)	0.87 (0.82 - 0.92)	0.73 (0.69 - 0.77)
90+	0.95 (0.88 - 1.02)	0.95 (0.9 - 1.02)	0.6 (0.51 - 0.69)	0.63 (0.55 - 0.73)
<b>Sex</b>				
Female	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Male	0.79 (0.78 - 0.8)	0.84 (0.83 - 0.85)	0.8 (0.78 - 0.82)	0.95 (0.92 - 0.97)
<b>Race</b>				
White	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Asian	0.85 (0.81 - 0.89)	0.87 (0.84 - 0.91)	0.71 (0.64 - 0.79)	0.83 (0.75 - 0.92)
Black	1.02 (0.95 - 1.1)	1.16 (1.09 - 1.23)	0.84 (0.75 - 0.93)	0.73 (0.65 - 0.81)
<b>Ethnicity</b>				
Not Hispanic	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Hispanic	0.95 (0.85 - 1.05)	0.99 (0.9 - 1.08)	0.89 (0.77 - 1.04)	0.94 (0.8 - 1.08)
<b>Charlson comorbidity index</b>				
0	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
1-2	1.69 (1.66 - 1.72)	1.69 (1.66 - 1.71)	1.58 (1.53 - 1.64)	0.93 (0.9 - 0.96)
3-4	2.47 (2.41 - 2.54)	2.48 (2.42 - 2.53)	2.42 (2.3 - 2.53)	0.96 (0.91 - 1)
5+	3.34 (3.25 - 3.42)	3.37 (3.3 - 3.44)	3.62 (3.47 - 3.77)	1.05 (1.01 - 1.1)
<b>Social deprivation index score<sup>a</sup></b>				
Q1 (lowest deprivation)	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Q2	0.93 (0.9 - 0.95)	0.98 (0.96 - 1)	0.93 (0.89 - 0.97)	0.96 (0.92 - 0.99)
Q3	0.99 (0.97 - 1.02)	1.06 (1.04 - 1.08)	0.94 (0.9 - 0.98)	0.94 (0.91 - 0.98)
Q4	0.9 (0.88 - 0.92)	0.97 (0.95 - 0.99)	0.86 (0.83 - 0.91)	0.92 (0.88 - 0.96)



Q2 x Black	1.03 (0.96 - 1.1)	0.97 (0.92 - 1.03)	0.97 (0.86 - 1.1)	1.04 (0.93 - 1.17)
Q3 x Black	1.08 (1.01 - 1.16)	1.06 (0.99 - 1.12)	0.86 (0.77 - 0.96)	0.92 (0.83 - 1.02)
Q4 x Black	1.11 (1.05 - 1.18)	1.07 (1.02 - 1.13)	0.96 (0.87 - 1.06)	0.97 (0.88 - 1.06)
Q2 x Hispanic	0.95 (0.87 - 1.05)	0.92 (0.85 - 1)	0.84 (0.7 - 0.98)	0.97 (0.81 - 1.14)
Q3 x Hispanic	1.03 (0.93 - 1.13)	1.03 (0.95 - 1.12)	0.93 (0.81 - 1.07)	0.99 (0.86 - 1.13)
Q4 x Hispanic	1.01 (0.93 - 1.1)	0.93 (0.87 - 1.01)	0.85 (0.72 - 0.98)	0.96 (0.82 - 1.13)
<b>Healthcare access score<sup>b</sup></b>				
Q1 (greatest access)	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Q2	1.04 (1.01 - 1.08)	1.05 (1.02 - 1.08)	0.95 (0.91 - 1)	1.01 (0.97 - 1.06)
Q3	0.99 (0.95 - 1.02)	0.95 (0.92 - 0.98)	0.9 (0.86 - 0.94)	1.1 (1.05 - 1.15)
Q4	0.88 (0.86 - 0.91)	0.92 (0.9 - 0.95)	0.94 (0.9 - 0.99)	1.08 (1.04 - 1.13)
Q2 x Black	0.95 (0.88 - 1.02)	0.96 (0.9 - 1.02)	0.96 (0.89 - 1.04)	1.06 (0.98 - 1.15)
Q3 x Black	0.83 (0.76 - 0.9)	0.86 (0.8 - 0.92)	0.83 (0.75 - 0.93)	1.22 (1.1 - 1.35)
Q4 x Black	0.76 (0.7 - 0.82)	0.77 (0.72 - 0.82)	0.89 (0.79 - 0.99)	1.26 (1.13 - 1.41)
Q2 x Hispanic	0.94 (0.85 - 1.05)	1.01 (0.92 - 1.1)	1 (0.87 - 1.16)	1.04 (0.91 - 1.2)
Q3 x Hispanic	0.87 (0.77 - 0.98)	0.93 (0.84 - 1.03)	0.93 (0.79 - 1.11)	1.14 (0.96 - 1.34)
Q4 x Hispanic	0.84 (0.74 - 0.94)	0.92 (0.83 - 1.01)	0.92 (0.77 - 1.09)	1.07 (0.9 - 1.27)

<sup>a</sup> Larger social deprivation index scores reflect higher levels of deprivation; reference level Q1 represents lowest level of deprivation

<sup>b</sup> Smaller access scores reflect poorer health care access; reference level Q4 represents greatest access for consistency with social deprivation index score reference level