and population density (interdecile OR, 0.70 [95% CI, 0.32-1.51]) or poverty rate (interdecile OR, 2.03 [95% CI, 0.97-4.25]). Neighborhood-level variables were moderately to highly correlated (r = 0.66-0.83).

Discussion | In this study, SARS-CoV-2 transmission among pregnant women in New York City was associated with neighborhood- and building-level markers of large household membership, household crowding, and low socioeconomic status. These data may aid policy makers in the design of interventions to reduce the spread of SARS-CoV-2. A key strength of this study was the use of a universally tested population, which allowed for ascertainment of asymptomatic cases among a defined at-risk population. Limitations of the study include that the findings may not apply to other populations given the unique demographic, physiologic, and social features of pregnant women. Additionally, the small sample size and high degree of correlation between neighborhood-level variables precluded multivariable analysis. Nonetheless, this study provides empirical support for the hypothesis that variation in the urban environment may be an important social determinant of SARS-CoV-2 transmission.

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1. Pinter-Wollman N, Jelić A, Wells NM. The impact of the built environment on health behaviours and disease transmission in social systems. *Philos Trans R Soc Lond B Biol Sci*. 2018;373(1753):20170245. doi:10.1098/rstb.2017.0245

2. Virtanen M, Terho K, Oksanen T, et al. Patients with infectious diseases, overcrowding, and health in hospital staff. *Arch Intern Med*. 2011;171(14):1296-1298. doi:10.1001/archinternmed.2011.313

3. Wadhera RK, Wadhera P, Gaba P, Figueroa JF, Joynt Maddox KE, Yeh RW, Shen C. Variation in COVID-19 hospitalizations and deaths across New York City boroughs. *JAMA*. 2020;323(21):2192-2195. doi:10.1001/jama.2020.7197

4. American Community Survey by neighborhood tabulation area. New York City Department of City Planning. Accessed May 6, 2020. https://www1.nyc.gov/site/planning/data-maps/open-data/dwn-acs-nta.page

5. PLUTO database. New York City Department of City Planning. Accessed May 6, 2020. https://www1.nyc.gov/site/planning/data-maps/open-data.page

SARS-CoV-2 Positivity Rate for Latinos in the Baltimore–Washington, DC Region

The black community has been disproportionally affected by the coronavirus disease 2019 (COVID-19) pandemic in the US.[1] Emerging data highlight sharp increases in cases within the Latino community.[1,2] We analyzed temporal trends in positivity rates for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the Baltimore-Washington, DC region by race/ethnicity.

Related articles pages 388 and 390

Methods | Samples were collected between March 11, 2020, and May 25, 2020, from 5 hospitals, including emergency departments, and 30 outpatient clinics that are part of the Johns Hopkins Health System (JHHS). SARS-CoV-2 testing inclusion criteria broadened over time (ie, initially high-risk individuals only and then all symptomatic patients) as local capacity increased but was standardized across JHHS sites. Samples collected via nasopharyngeal swabs were analyzed using SARS-CoV-2 reverse transcriptase–polymerase chain reaction. Data on patient demographics, comorbidities, SARS-CoV-2 status, and hospitalization were extracted from the integrated electronic health record system.

Patients self-identified race/ethnicity from fixed categories. Racial/ethnic groups were considered mutually exclusive; ie, Latinos were excluded from other groups (white, black, other) regardless of reported race. Those who self-reported American Indian, Alaska Native, Asian American, Native Hawaiian, Pacific Islander, or multiracial were grouped as "other."

Temporal trends in daily positivity rates (7-day moving average; number positive/number tested over the date and preceding 6 days) and testing volumes stratified by race/ethnicity were evaluated. Total rates of SARS-CoV-2 positivity, hospitalization, and categorical patient characteristics were

Table. Demographics of Patients Tested for SARS-CoV-2 at the Johns Hopkins Health System[a]

	Latino patients	White patients	*P* value[b]	Black patients	*P* value[b]	Patients of other race/ethnicity	*P* value[b]
Overall							
Tested, No.	4169	17 113		11 639		4806	
Positive, No.	1776	1508		2050		828	
% of tested (95% CI)	42.6 (41.1-44.1)	8.8 (8.4-9.2)	<.001	17.6 (16.6-18.3)	<.001	17.2 (16.2-18.3)	<.001
Female sex, No.	821	762		1100		424	
% of positive (95% CI)	46.2 (43.9-48.6)	50.5 (48.0-53.0)	.02	53.7 (51.5-55.8)	<.001	51.2 (47.8-54.6)	.02
Age, y							
<18, No.	97	25		44		26	
% of positive (95% CI)	5.5 (4.5-6.6)	1.7 (1.1-2.4)	<.001	2.1 (1.6-2.9)	<.001	3.1 (2.2-4.6)	.01
18-44, No.	1092	422		586		323	
% of positive (95% CI)	61.5 (59.2-63.7)	28.0 (25.8-30.3)	<.001	28.6 (26.7-30.6)	<.001	39.0 (35.7-42.4)	<.001
45-64, No.	487	443		855		243	
% of positive (95% CI)	27.4 (25.4-29.5)	29.4 (27.1-31.7)	.23	41.7 (39.6-43.9)	<.001	29.3 (26.3-32.5)	.33
65-74, No.	70	264		334		101	
% of positive (95% CI)	3.9 (3.1-5.0)	17.5 (15.7-19.5)	<.001	16.3 (14.8-18.0)	<.001	12.2 (10.1-14.6)	<.001
>74, No.	30	354		231		135	
% of positive (95% CI)	1.7 (1.2-2.4)	23.5 (21.4-25.7)	<.001	11.3 (10.0-12.7)	<.001	16.3 (13.9-19.0)	<.001
Admitted to the hospital							
Patients, No.	516	604		854		238	
% of positive (95% CI)	29.1 (27.0-31.2)	40.1 (37.6-42.5)	<.001	41.7 (39.5-43.8)	<.001	28.7 (25.8-31.9)	.91
Female sex, No.	181	274		385		115	
% of admitted (95% CI)	35.1 (31.1-39.3)	45.4 (41.4-49.4)	<.001	45.1 (41.8-48.4)	<.001	48.3 (42.0-54.6)	<.001
Age, y							
<18, No.	15	2		5		6	
% of admitted (95% CI)	2.9 (1.8-4.7)	0.3 (0.1-1.2)	.001	0.6 (0.3-1.4)	.001	2.5 (1.2-5.4)	.95
18-44, No.	223	79		112		43	
% of admitted (95% CI)	43.2 (39.0-47.5)	13.1 (10.6-16.0)	<.001	13.1 (11.0-15.5)	<.001	18.1 (13.7-23.4)	<.001
45-64, No.	207	138		373		76	
% of admitted (95% CI)	40.1 (36.0-44.4)	22.8 (19.7-26.4)	<.001	43.7 (40.4-47.0)	.22	31.9 (26.3-38.1)	.04
65-74, No.	50	137		207		50	
% of admitted (95% CI)	9.7 (7.4-12.5)	22.7 (19.5-26.2)	<.001	24.2 (21.5-27.2)	<.001	21.0 (16.3-26.6)	<.001
>74, No.	21	248		157		63	
% of admitted (95% CI)	4.1 (2.7-6.1)	41.1 (37.2-45.0)	<.001	18.4 (15.9-21.1)	<.001	26.5 (21.3-32.4)	<.001
Comorbidities							
Hypertension, No.	231	425		703		174	
% of admitted (95% CI)	44.8 (40.5-49.1)	70.4 (66.6-73.9)	<.001	82.3 (79.6-84.7)	<.001	73.1 (67.1-78.3)	<.001
CHF, No.	212	342		479		96	
% of admitted (95% CI)	41.1 (36.9-45.4)	56.6 (52.6-60.5)	<.001	56.1 (52.7-59.4)	<.001	40.3 (34.3-46.7)	.91
Diabetes, No.	169	179		451		102	
% of admitted (95% CI)	32.8 (28.8-36.9)	29.6 (26.1-33.4)	.29	52.8 (49.5-56.1)	<.001	42.9 (36.7-49.2)	.01
Pulmonary disease, No.	107	205		281		53	
% of admitted (95% CI)	20.7 (17.5-24.4)	33.9 (30.3-37.8)	<.001	32.9 (29.8-36.1)	<.001	22.3 (17.4-28.0)	.70
COPD, No.	99	181		238		49	
% of admitted (95% CI)	19.2 (16.0-22.8)	30.0 (26.4-33.7)	<.001	27.9 (25.0-31.0)	<.001	20.6 (15.9-26.2)	.73

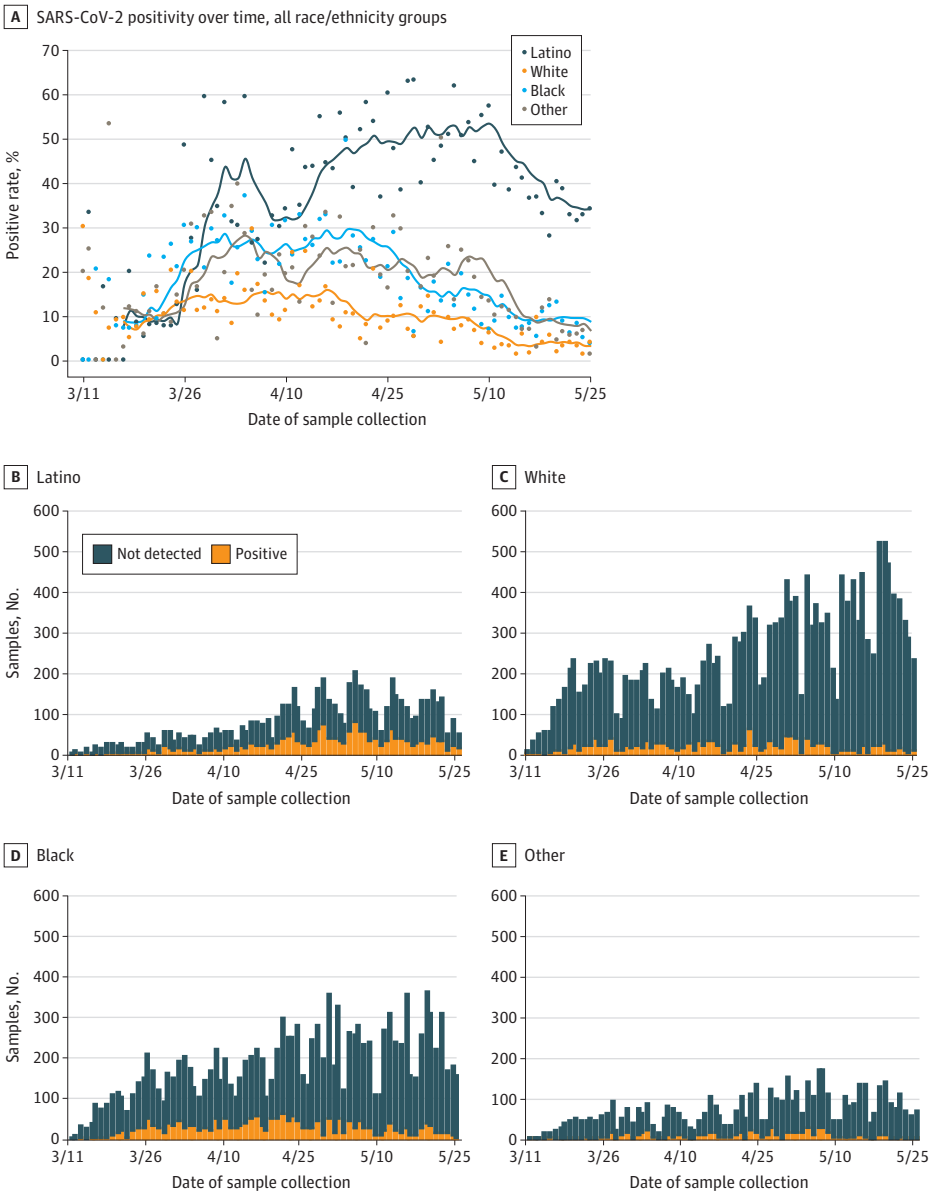
Abbreviations: CHF, congestive heart failure; COPD, chronic obstructive pulmonary disease; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

[a] Patients self-reported their race/ethnic group, and those who self-reported American Indian, Alaska Native, Asian American, Native Hawaiian, Pacific Islander, or multiracial were grouped as "other."

[b] *P* values were calculated from χ^2 tests using the Latino patient group as reference for each pairwise comparison with a $P < .05$ threshold for significance. The 95% CIs for proportions were calculated using the Wilson score method without continuity correction.

compared between Latinos and each racial/ethnic group using the χ^2 test. Analysis of variance (ANOVA) was used to compare trends in positivity rates between groups. An omnibus ANOVA comparison with significance set at $P < .05$ was performed, followed by pairwise comparisons using the Latino group as reference, with correction for multiple comparisons

Figure. SARS-CoV-2 Positivity Rate by Racial/Ethnic Groups in the Baltimore–Washington, DC Region, March 11 to May 25, 2020



A, Daily positivity rates of SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) as points and 7-day moving averages (number positive/number tested over the plotted date and preceding 6 days) as solid lines by race/ethnicity. Statistically significant differences ($P < .001$) in daily positivity rates were evaluated across groups with 1-way analysis of variance (ANOVA). Multiple post hoc pairwise comparisons (Tukey test) of each group (black, white, other) to the Latino reference group also demonstrated significant differences ($P < .001$ for each pairwise comparison). B-E, Testing volume stratified by SARS-CoV-2 test result and grouped by race/ethnicity. This included an omnibus ANOVA comparison with significance ($P < .05$) resulting in correction for multiple pairwise comparisons using the Latino group as reference.

(Tukey test). All analyses were performed with R version 3.6.2; a 2-sided $P < .05$ determined statistical significance. This work was deemed exempt by the Johns Hopkins Institutional Review Board, meeting criteria for quality improvement.

Results | A total of 6162 (16.3% [95% CI, 16.0%-16.7%]) of 37 727 patients tested positive for SARS-CoV-2. The positivity rate for Latino patients was 42.6% (95% CI, 41.1%-44.1%), significantly higher than the rate for white patients (8.8% [95% CI, 8.4%-9.2%]), black patients (17.6% [95% CI, 16.6%-18.3%]), or those of other race/ethnicity (17.2% [95% CI, 16.2%-18.3%]) ($P < .001$ for each pairwise comparison) (**Table**).

The daily positivity rate was higher for Latino patients than patients in the other racial/ethnic groups ($P < .001$ for each pairwise comparison; **Figure**, A). Moving average trends in positivity rate peaked later for Latino patients at 53.4% (95% CI, 49.6%-57.3%) on May 10, 2020, compared with white patients (16.1% [95% CI, 14.1%-18.3%]) on April 16, 2020, and black patients (29.6% [95% CI, 26.9%-32.6%]) on April 19, 2020. As testing volume increased over time for all racial/ethnic groups (Figure, B, C, D, and E), positivity rates declined (Figure, A).

Among those who tested positive, 2212 (35.9% [95% CI, 34.7%-37.1%]) patients were admitted to a JHHS hospital. The admission rate was lower for Latino patients (29.1% [95% CI, 27.0%-31.2%]) than for white patients (40.1% [95% CI, 37.6%-42.5%]) or black patients (41.7% [95% CI, 39.5%-43.8%]) ($P < .001$ for each pairwise comparison) (Table). Hospitalized Latino patients were younger (a greater proportion aged 18-44

years), more likely to be male, and had lower rates of hypertension, congestive heart failure, pulmonary disease, and chronic obstructive pulmonary disease than white or black patients ($P < .001$ for each pairwise comparison) (Table).

Discussion | More than 40% of Latinos in the Baltimore-Washington, DC metropolitan region who were tested for SARS-CoV-2 were positive, a much higher proportion than for any other racial/ethnic group. While SARS-CoV-2 testing inclusion criteria were standardized, differential access to testing may have contributed to higher rates of positivity; Latino patients have historically demonstrated lower rates of insurance and health care utilization.[3] However, an alternative explanation may be higher disease prevalence, with the spread of infection among Latinos driven by decreased opportunity for social distancing in the setting of dense housing and continued work engagement due to essential worker status and economic necessity.[1,4,5]

This study was limited to patients visiting JHHS, excluding those tested for SARS-CoV-2 elsewhere in the region. In addition, this study cannot determine whether differences in Latino patient SARS-CoV-2 positivity represent a higher disease prevalence, differences in access to health care (eg, reluctance in seeking care), or both.

Addressing the unique needs of the Latino community may help mitigate the spread of SARS-CoV-2 infection and prevent COVID-19.

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1. Yancy CW. COVID-19 and African Americans. *JAMA*. Published online April 15, 2020. doi:10.1001/jama.2020.6548

2. US Department of Health and Human Services Office of Minority Health. Profile: Hispanic/Latino Americans. Posted August 22, 2019. Accessed June 6, 2020. https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=64

3. Health insurance historical tables: HIC series. US Census Bureau. Posted September 26, 2019. Accessed June 6, 2020. https://www.census.gov/data/tables/time-series/demo/health-insurance/historical-series/hic.html

4. Bureau of Labor Statistics. *Job Flexibilities and Work Schedules—2017-2018 Data From the American Time Use Survey.* US Dept of Labor; 2019:32.

5. Page KR, Venkataramani M, Beyrer C, Polk S. Undocumented U.S. immigrants and Covid-19. *N Engl J Med*. 2020;382(21):e62. doi:10.1056/NEJMp2005953

Trends in HIV Preexposure Prophylaxis Prescribing in the United States, 2012-2018

The US Preventive Services Task Force recommends use of preexposure prophylaxis (PrEP) for individuals at risk of acquiring HIV.[1] The Centers for Disease Control and Prevention estimated that 1.1 million US individuals might benefit from PrEP,[2] but only 7% of those used it in 2016.[3] Clinicians have been slow to prescribe PrEP, citing concerns regarding its effectiveness outside a clinical trial setting, unintended consequences, and ambiguity surrounding which type of clinician is best suited to prescribe PrEP.[4] Using a commercial insurance database, this study examined trends in the number of persons prescribed PrEP, prescriptions for PrEP, and specialty of prescribing clinicians.

Methods | We used the 2012-2018 MarketScan Commercial and Medicare Supplemental database, comprising national medical claims from US employer-provided health insurance with greater representation from the South, to identify persons prescribed 30 days or more of tenofovir-disoproxil-fumarate with emtricitabine (TDF/FTC). Loss of voluntary data contributors to MarketScan led to enrollee loss over time. Since TDF/FTC is indicated for HIV, hepatitis B virus (HBV), and HIV postexposure prophylaxis in addition to PrEP, we excluded persons with any diagnostic codes or prescription drug treatments for HIV or HBV during the year before the first TDF/FTC prescription date. To ensure PrEP use (not postexposure prophylaxis use), we included TDF/FTC prescriptions with a supply of 30 days or more.

To ascertain prescriber specialty information, we matched pharmacy claims using the PrEP fill date with the service date of outpatient or inpatient claims for each patient. We further excluded refills, which could not be linked to medical claims, and excluded PrEP prescriptions matched with claims from more than 1 physician on the same day or missing physician specialty information. We categorized physician types into infectious disease, primary care physicians, and others. Primary care physicians included internal medicine, family practice, and other primary care physicians, which included medical physician, multispecialty physician group, geriatric medicine, and obstetrics and gynecology.[5] Starting in 2015, when unique physician identifiers were available, we categorized physicians into HIV care and non-HIV care physicians, defined as those who provided care to patients infected with HIV or not based on HIV diagnosis codes from inpatient and