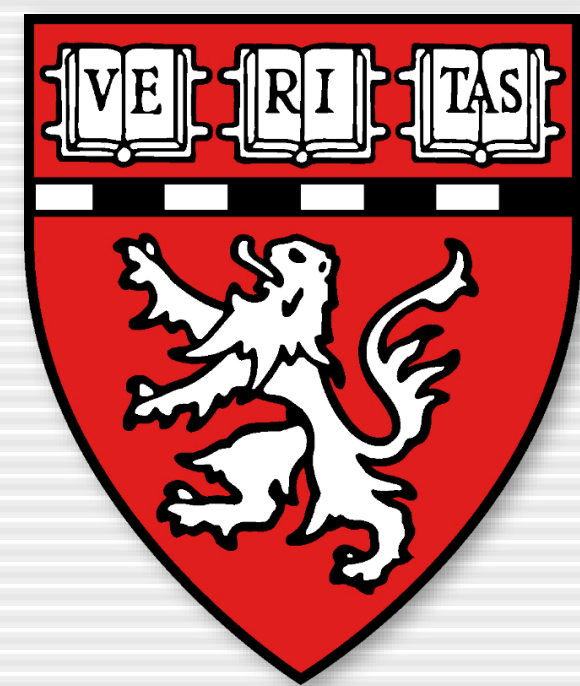




Time Series Analysis of Racial Disparities in Postpartum Care during the COVID-19 Pandemic: A Real-World Data Study



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Background

Racial and ethnic disparities in postpartum care (PPC) access have been well identified in the United States. Such racial/ethnic disparity could be exacerbated by the COVID-19 pandemic because of amplified economic distress and compromised social status among women of color. We would like to examine the effects of COVID-19 pandemic on the existing racial/ethnic disparity in PPC access.

Prior to the COVID-19 pandemic

- Racial disparities in postpartum care (PPC)
 - Black women attended PPC 3.5% less likely than White women (*de Bocanegra et al., 2017*)
 - Nearly half of racial/ethnic minority women, compared to only 9% of Whites, reported unmet postpartum mental care needs (*Zittel-Palamara et al., 2008*)

During the COVID-19 pandemic

- Racial disparities in physical outcomes: Black and Hispanic pregnant women have been more than twice as likely as non-Hispanic Whites to be infected and/or die from COVID-19 (*Ellington et al., 2020*)
- Racial disparities in psychosocial outcomes: Black mothers were disproportionately affected with regard to job loss, decreased pay, general COVID-19 worries, and depression (*Yusuf et al., 2020*)

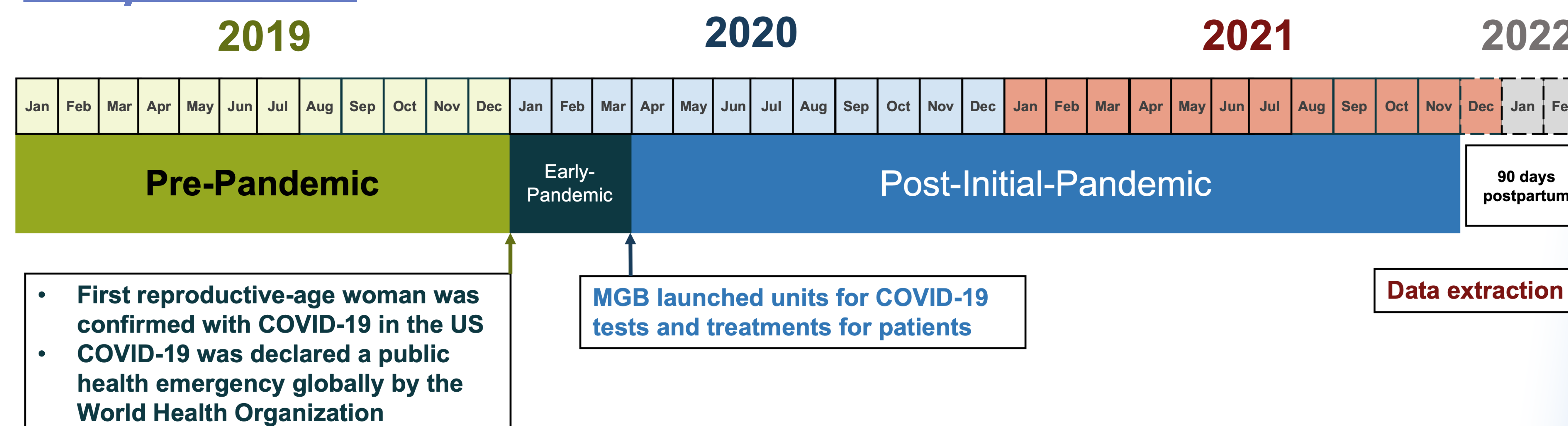
Methods

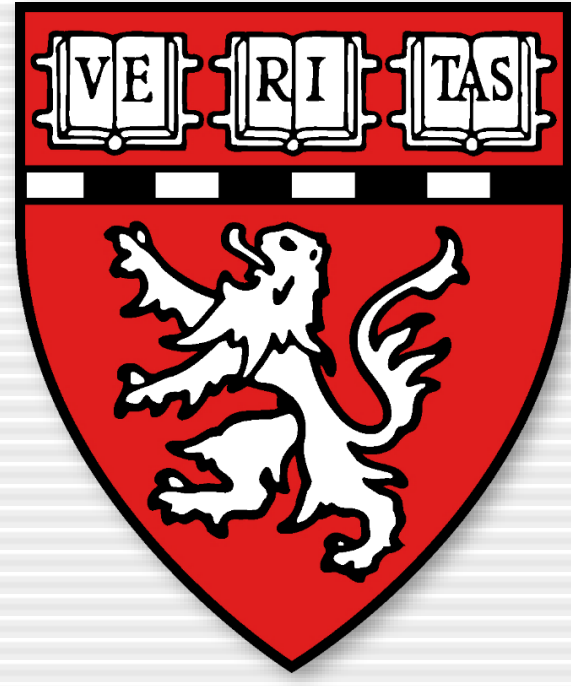
Retrospective cohort study using electronic health records data from eight hospitals with obstetric units in the Mass General Brigham system was conducted. Multinomial logistic regressions in an interrupted time series approach were employed to assess monthly changes in PPC access across non-Hispanic White, non-Hispanic Black, Hispanic, Asian, and other racial groups, controlling for maternal demographic and clinical characteristics.

Study Procedure

- **What:** A retrospective cohort study analyzed electronic health records data of women giving birth and followed up at the Mass General Brigham (MGB), the integrated healthcare system, in Boston, MA
- **When:** Parturients who delivered between January 2019 and November 2021, tracked through March 2022
- **Who:** 45,588 women
 - 1) Gave live birth between January 1, 2019 and November 30, 2021
 - 2) Had health records from labor and delivery to 90 days postpartum
- **Outcome:** Postpartum care (PCC) access
 - Attended, scheduled but canceled, never scheduled
- **Key independent variable:** Maternal racial groups
 - Non-Hispanic White (n = 28,526) Asian (n = 4,735)
 - Non-Hispanic Black (n = 3,399) Other Race (n = 1,269)

Study Timelines





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Statistic Analysis

Maternal Demographics and Clinical Characteristics	
Age	Severe morbidity
Marital status	Diabetes
Prenatal care attendance	Hypertension
Smoking	Depression
Gestational age at delivery	COVID-19 infection
Delivery mode	

- Descriptive analysis and bivariate analyses
- Multinomial logistic regression in an interrupted time series approach

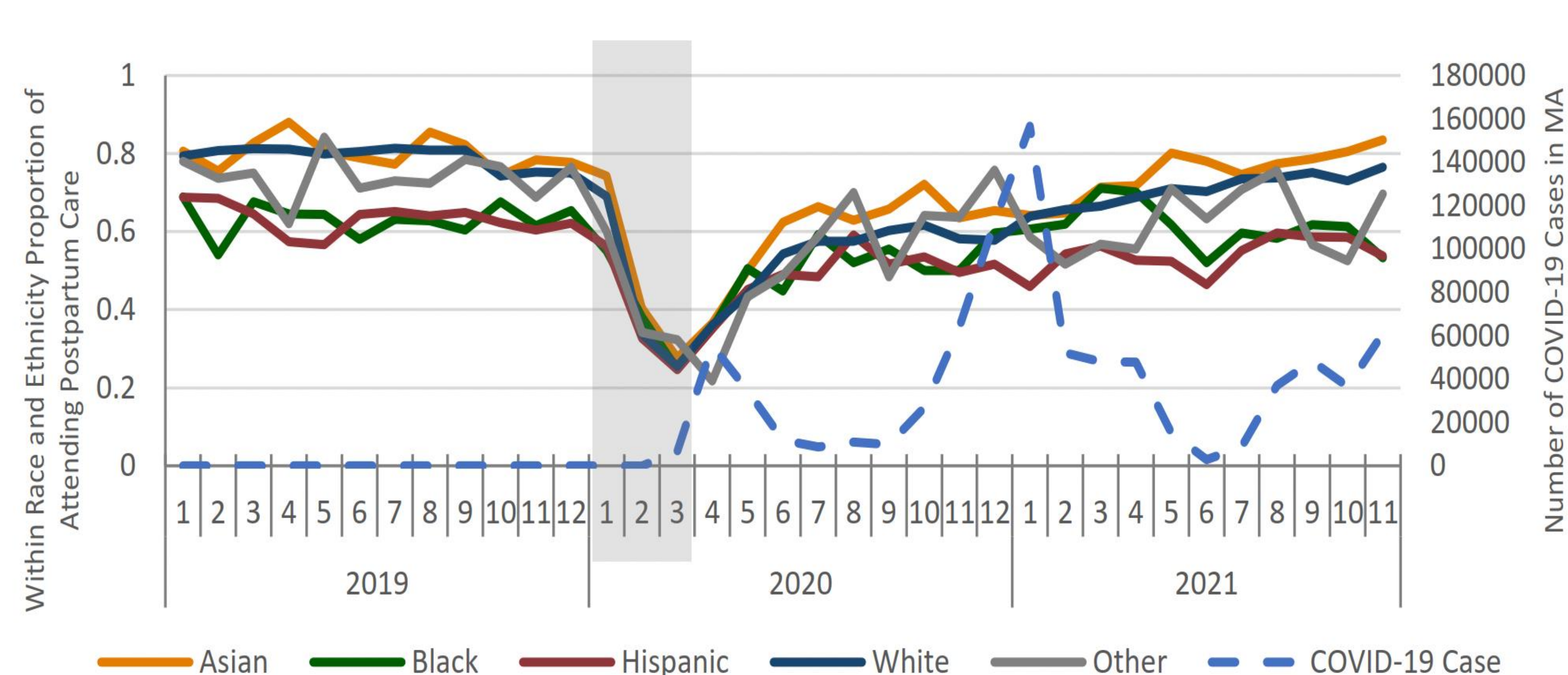


Figure 1A. Attended Postpartum Care (PPC) Visits

County-Level Characteristic
Social vulnerability index

Results

Table 1. Trends of Postpartum Care (PPC)

	Pre-pandemic (1/19-12/19)			Early-pandemic (1/20-3/20)			Post-initial-pandemic (4/20-11/21)		
Race	Attended	Canceled	Unscheduled	Attended	Canceled	Unscheduled	Attended	Canceled	Unscheduled
Asian	1,396 (80.1%)	41 (2.4%)	305 (17.5%)	201 (47.0%)	87 (20.3%)	140 (32.7%)	1,752 (68.3%)	64 (2.5%)	749 (29.2%)
Black	756 (63.2%)	109 (9.1%)	331 (27.7%)	119 (39.3%)	65 (21.5%)	119 (39.3%)	1,071 (56.4%)	190 (10.0%)	639 (33.6%)
Hispanic	1,538 (63.1%)	181 (7.4%)	717 (29.4%)	229 (38.1%)	117 (19.5%)	255 (42.4%)	2,034 (52.0%)	298 (7.6%)	1,581 (40.4%)
White	7,608 (79.2%)	306 (3.2%)	1,693 (17.6%)	1,057 (42.4%)	413 (16.6%)	1,024 (41.1%)	10,333 (62.9%)	612 (3.7%)	5,480 (33.4%)
Other	340 (74.6%)	24 (5.3%)	92 (20.2%)	39 (40.2%)	24 (24.7%)	34 (35.1%)	419 (58.5%)	32 (4.5%)	265 (37.0%)

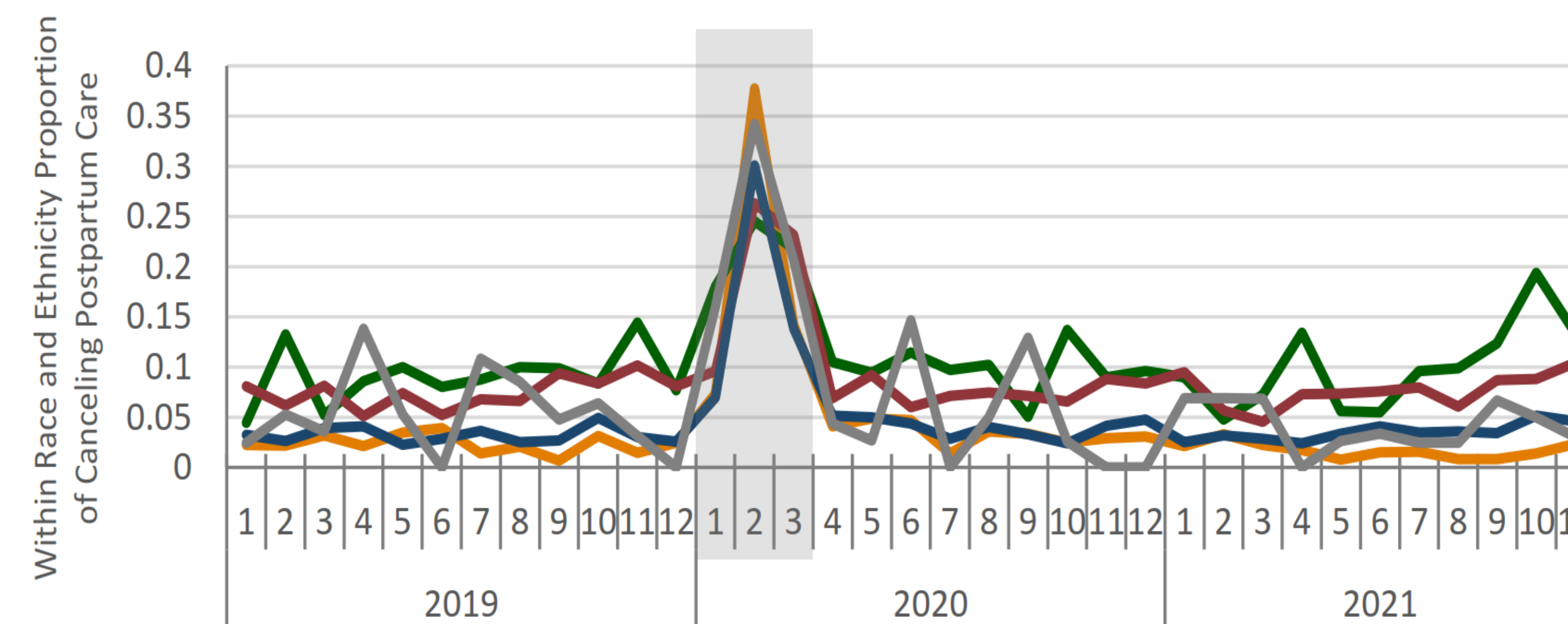


Figure 1B. Cancelled Postpartum Care (PPC) Visits

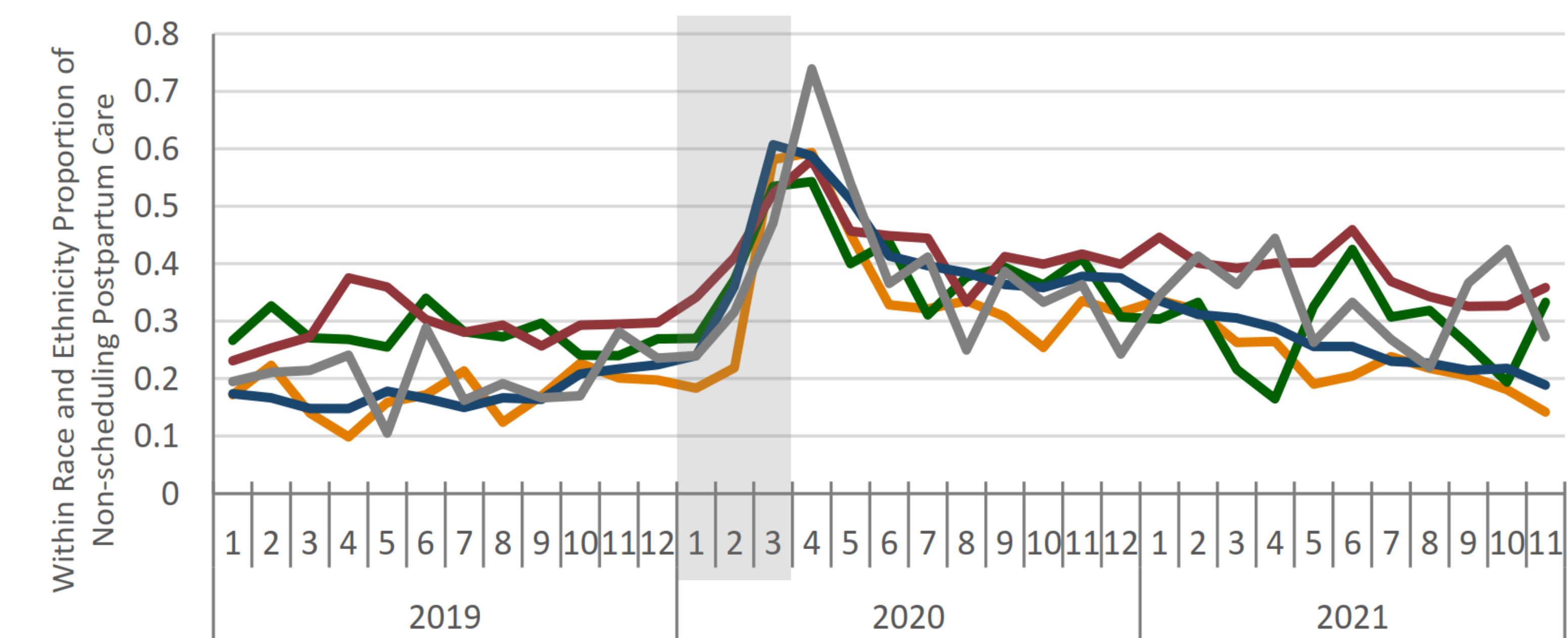
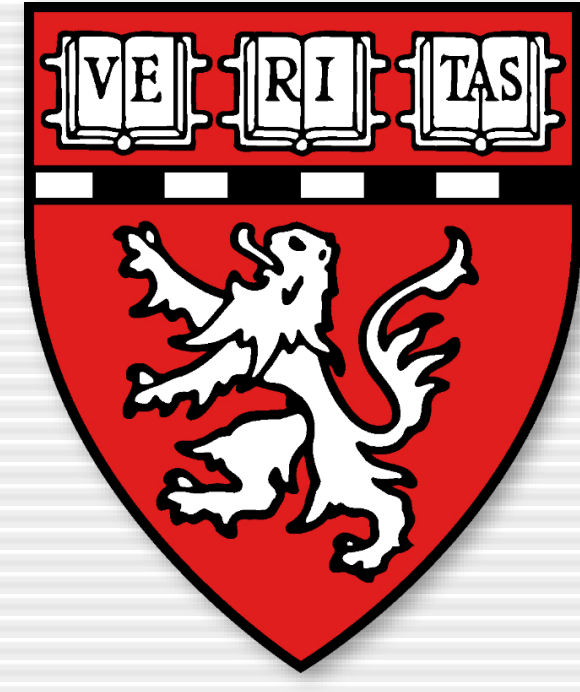


Figure 1C. Nonscheduled Postpartum Care (PPC) Visits



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Results

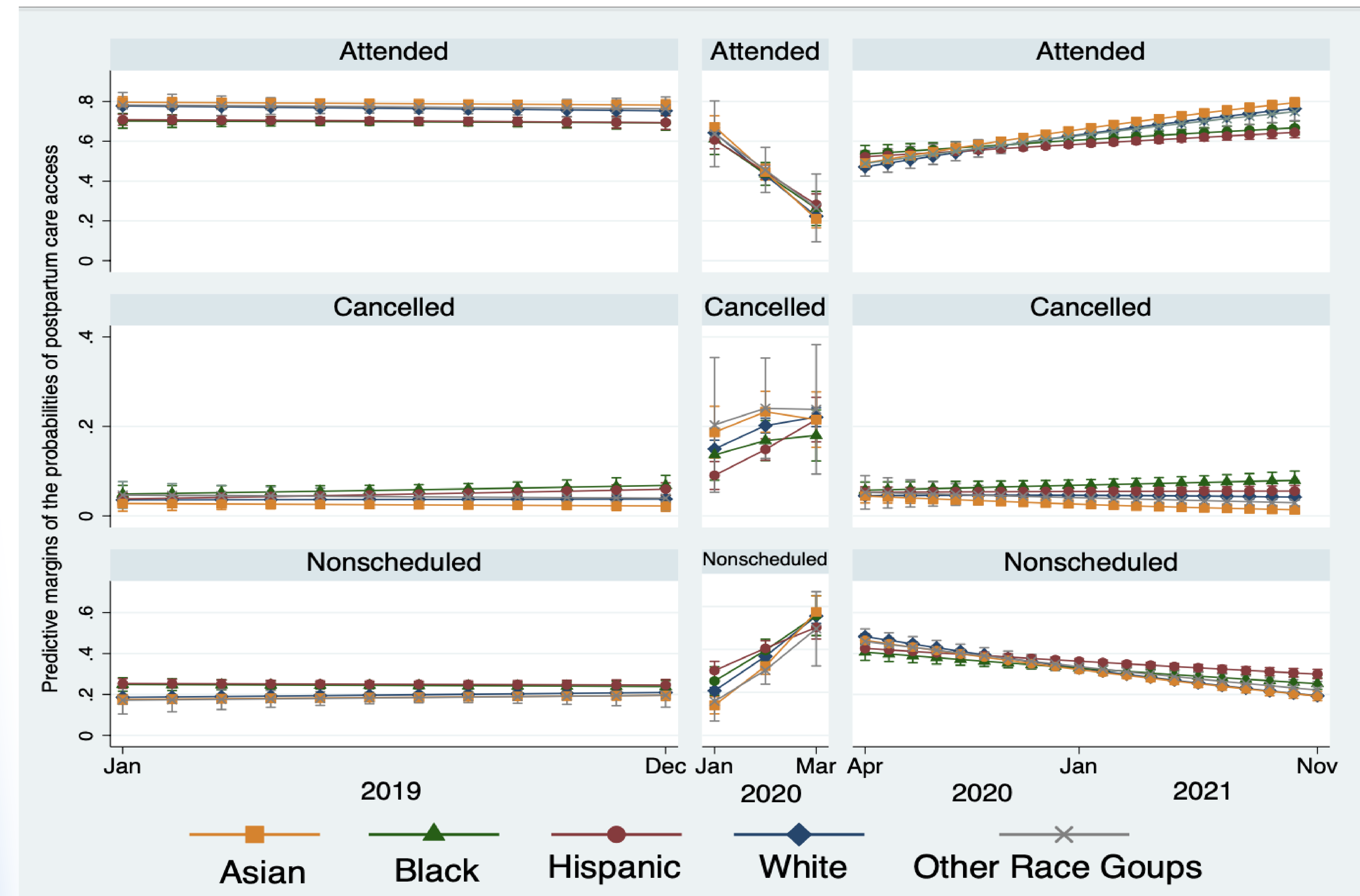


Figure 2. Adjusted monthly trends of Postpartum Care (PPC) access probabilities

Discussion

Overall Postpartum Care (PPC) attendance rate: 75.2% in pre-pandemic (Jan - Dec 2019); 41.7% in early-pandemic (Jan - Mar 2020); 60.9% in post-initial-pandemic (Apr 2020 - Nov 2021).

Among all racial groups, Black women consistently had the lowest average attending rate over the three time periods

- COVID-19 is likely to exacerbate existing racial disparities of PPC access, in post-initial-pandemic adaptation
- Slightly increasing gaps between Black and White women in nonscheduled rates
- Some support services, e.g., birthing centers, help hotlines, virtual consultations, may be helpful
- The need for greater system-level support to ensure effective adaptation to the pandemic for all

Conclusion

Racial/ethnic disparities in PPC were exacerbated following the onset of the COVID-19 pandemic, when PPC access recovered more slowly among Black women than Whites. These disparities require swift attention and amelioration to address barriers for these women to obtain much needed PPC during this pandemic.

Limitations

- Potential misclassification of “Nonscheduled” postpartum care
 - Hindering our ability to differentiate “Attended PPC” from “Nonscheduled PPC”
- Insurance information was not available
 - Women with Medicaid insurance had a higher risk (37%-55%) of not returning for PPC compared to women using private insurance (3%) (*Baldwin et al., 2018; Simmons et al., 2013*)

Disclosure

Part of the data was previously presented at 2021 APHA annual meeting.