Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

ethnicity data was included(57 vs 73%; p <0.0001). 101(57%) of the women attempting TOLAC had a predicted rate <60%, of which 68(67.3%) had a VBAC. When calculated without race/ethnicity data, 42 were in the <60% group, of which 30(71%) had a VBAC. In women who declined TOLAC, the mean predicted success rate was higher with the second calculation (47.8 vs 62.8%; p<0.0001).

CONCLUSION: Although race/ethnicity decreases predicted success rate using this calculator, our data suggests Black and Hispanic women had high rates of VBAC, even when predicted success rates were low. Removing the social constructs of race/ethnicity from calculation models may improve obstetrical outcomes in minority populations.

1146 Steroidogenic enzyme activity as a biomarker for preterm preeclampsia

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OBJECTIVE: To assess the association between enzymatic activity in the steroid metabolism pathway and a diagnosis of preterm preeclampsia.

STUDY DESIGN: A cohort of women who delivered preterm were selected from an academic pregnancy biobank and divided into preeclampsia (PE) and no preeclampsia (No PE) groups. Plasma specimens were obtained prospectively from subjects in the second trimester (Epoch 1) and third trimester (Epoch 2). Enzymatic activity was estimated by calculation of the ratio of substrate and primary product. Steroid metabolites were quantified using ultra-performance liquid chromatography tandem mass spectrometry (UPLC/MS-MS). Nine steroid pairs were identified to estimate the activity of six key enzymes involved in steroidogenesis (Table). Comparison of enzymatic activity between groups was conducted using the Mann-Whitney U test. Area under the receiver operating characteristic curve (AUROC) was used to assess the predictive potential of enzyme activity. All analysis was performed using IBM SPSS Statistics.

RESULTS: Specimens were obtained from 66 unique subjects across Epoch 1 (46 samples) and Epoch 2 (46 samples). There was no difference in the gestational age at sample acquisition between PE and No PE groups in either Epoch 1 (15.8±4.0 vs. 15.5±4.2 weeks, p=0.56) or Epoch 2 (30.6±2.8 vs. 29.3±3.4 weeks, p=0.13). The gestational age at delivery was similar between PE (32.4 ± 3.0 weeks) and No PE (32.1 ±3.7 weeks) groups (p=0.96). Of the six enzymes assessed, a significant difference in activity between groups was only found for 17,20-lyase (Epoch 1 p=0.02, Epoch 2 p=0.005) and aromatase (Epoch 1 p=0.008, Epoch 2 p<0.001). The AUROC demonstrated significant predictive potential for both 17,20-lyase (Epoch 1: AUROC 0.71, p=0.02; Epoch 2: AUROC 0.75, p=0.01) and aromatase (Epoch 1: AUROC 0.74, p=0.008; Epoch 2: AUROC 0.85, p<0.001).

CONCLUSION: Aromatase and 17,20-lyase activity have potential as biomarkers for preterm preeclampsia. Further study is needed to understand the role these enzymes may play in the pathophysiology of preeclampsia.

Enzyme	Steroid Pair	Epoch 1			Epoch 2		
		PE	No PE	p	PE	No PE	p
21-hydroxylase	Progesterone --> Cortexone	2.0 [0-8.8]	6.0 [0.7-37.1]	0.06	1.6 [0-99]	2.3 [0-19]	0.94
	17α-hydroxyprogesterone --> Cortexolone	3.0 [0.8-5.0]	2.0 [1.0-7.8]	0.69	1.9 [0.9-6.4]	1.6 [0.8-3.6]	0.48
11β-hydroxylase	Cortexone --> Corticosterone	0.07 [0.04-0.2]	0.05 [0.03-0.09]	0.24	0.1 [0.01-0.2]	0.08 [0.03-0.2]	0.87
	Cortexolone --> Cortisol	0.004 [0.001-0.01]	0.01 [0.001-0.01]	0.42	0.008 [0.002-0.07]	0.005 [0.003-0.01]	0.58
17,20-lyase	17α-hydroxyprogesterone --> Androstenedione	0.6 [0.4-0.7]	0.8 [0.5-1.3]	0.02	0.6 [0.3-0.9]	1.0 [0.6-1.6]	0.005
17β-HSD	Androstenedione --> Testosterone	1.7 [1.4-2.6]	2.1 [1.5-3.4]	0.52	2.0 [1.5-2.7]	2.7 [1.9-3.4]	0.12
Aromatase	Testosterone --> Estradiol	0.3 [0.14-0.9]	0.13 [0.08-0.34]	0.008	0.2 [0.08-0.35]	0.05 [0.03-0.09]	<0.001
20α-HSD	Progesterone --> 20α-hydroxyprogesterone	0.1 [0-0.3]	0.23 [0.01-0.97]	0.06	0.02 [0-0.7]	0.09 [0-0.5]	0.59
	17α,20α-dihydroxyprogesterone --> 17α-hydroxyprogesterone	0.6 [0.5-0.7]	0.45 [0.40-0.54]	0.053	0.5 [0.3-0.8]	0.5 [0.4-0.7]	0.95

*All values provided as Median [IQR]

1147 Laboratory evidence of COVID-19 infection in gravidas in the first 6 months of the pandemic

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OBJECTIVE: To describe rates of laboratory evidence of COVID-19 infection in gravidas delivering at an urban tertiary care medical center in New York City in the first 6 months of the COVID-19 pandemic.

STUDY DESIGN: This is a retrospective review of all gravidas delivering between March 22 and Sept 12, 2020. A program of universal testing for COVID-19 by SARS-COV2 nasopharyngeal PCR was begun on March 22, 2020 in which all patients underwent PCR testing immediately before or at delivery admission. COVID-19 serology became available on May 17 2020 and was sent at provider discretion until universal serology was sent on all patients admitted for delivery beginning on July 20, 2020 (week 18). Electronic medical records were queried to capture date and results of any pre-delivery PCR test as well as delivery PCR and serology testing. Patients were considered COVID-positive if they had any laboratory evidence of COVID-19 infection including any positive PCR or isolated positive serology (PCR-/Ab+). Within each week of the study period, delivery volume was tabulated and frequency of subjects with laboratory evidence of COVID-19 infection (ever PCR+ or Ab+, ever PCR+, PCR-/Ab+) were calculated

RESULTS: Over the 25 week study period, 2192 patients gave birth of which 341 (15.56%) had laboratory evidence of COVID-19 infection at or before delivery (range 4.0-46.1%) (Table 1). 218 (9.95%) gravidas had a positive SARS-COV2 PCR and 123 (5.61%) had no prior positive PCR but positive COVID serology at delivery admission. Introduction of universal serology testing demonstrated laboratory evidence of COVID-19 infection similar to rates of PCR-positivity observed at the height of the pandemic (Figure 1).

CONCLUSION: Although frequency of positive PCR decreased as the pandemic progressed, introduction of universal serology demonstrated that approximately 20% of patients admitted for delivery had laboratory evidence of prior COVID-19 infection. These findings support previous studies which showed a high rate of COVID-19 among the obstetric population.

Figure 1: Weekly frequency of laboratory evidence of COVID-19 among delivering gravidas between March 22 and Sept 12 2020

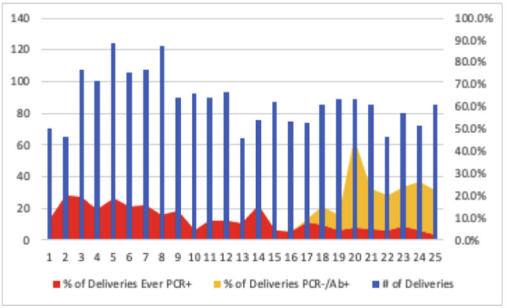

Table 1: Frequency of laboratory evidence of COVID-19 among delivering gravidas

Week	Month	Day	% Deliveries Ever PCR+ or Ab+	% Deliveries Ever PCR+	% Deliveries PCR-/Ab+	% +Deliveries Ever PCR+	% +Deliveries PCR-/Ab+
1	March	22 to 28	8.60%	8.60%			
2	March	29 to 4	20.00%	20.00%			
3	April	5 to 11	19.60%	19.60%			
4	April	12 to 18	14.00%	14.00%			
5	April	19 to 25	18.50%	18.50%			
6	April	26 to 2	15.10%	15.10%			
7	May	3 to 9	15.90%	15.90%			
8	May	10 to 16	11.50%	11.50%			
9	May	17 to 23	13.30%	13.30%			
10	May	24 to 30	4.30%	4.30%			
11	June	31 to 6	8.90%	8.90%			
12	June	7 to 13	8.60%	8.60%			
13	June	14 to 20	7.80%	7.80%			
14	June	21 to 27	15.80%	15.80%			
15	July	28 to 4	4.60%	4.60%			
16	July	5 to 11	4.00%	4.00%			
17	July	12 to 18	9.50%	8.10%			
18	July	19 to 25	15.30%	7.10%	8.20%	46.20%	53.80%
19	July	26 to 1	11.20%	4.50%	6.70%	40.00%	60.00%
20	Aug	2 to 8	46.10%	5.60%	40.40%	12.20%	87.80%
21	Aug	9 to 15	23.50%	4.70%	18.80%	20.00%	80.00%
22	Aug	16 to 22	20.00%	4.60%	15.40%	23.10%	76.90%
23	Aug	23 to 29	23.80%	6.30%	17.50%	26.30%	73.70%
24	Sept	30 to 5	26.40%	4.20%	22.20%	15.80%	84.20%
25	Sept	6 to 12	22.40%	2.40%	20.00%	10.50%	89.50%

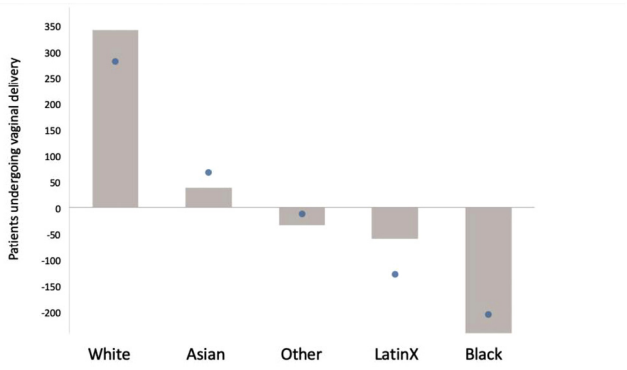

Figure 1. Diverging bar chart demonstrating disparities in CD rate and mitigation by model predictions. The 0 line (Y axis) represents the population-standardized CD rate (i.e. the rate if no racially-based bias existed). The brown bars represent disproportionate numbers of vaginal deliveries (above line) or cesarean deliveries (below line) by race. Blue markers indicate model prediction which demonstrates mitigation of bias for White, Black, and Other racial categories.

	Actual CD rate by racial group	Race-based CD rate compared to overall population rate (19.4%)	Model predicted rate	Absolute reduction in CD rate	CDs prevented if model followed
White	3,805/21,360 (17.8%)	Lower	10.8%	7%	1,498
Asian	1,414/5,048 (19.1%)	No difference	10.8%	6.2%	419
LatinX	964/6,976 (20.2%)	Higher	13.9%	8.3%	439
Black	989/3,733 (26.5%)	Higher	17.6%	8.8%	330
Other	487/2,335 (20.8%)	No difference	12.6%	8.3%	192

Table 1. Disparities in CD rate and mitigation by model predictions. The actual CD rate by racial group differs significantly from the overall population rate (which was 19.4%). The model trained on providers with the lowest CD rates (overall 12.1%) differentially recommended lowering all CD rates and would have prevented a total of 2,878 CDs.

1148 Racial disparities in cesarean delivery rates: can a machine learning model reduce these biases?

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OBJECTIVE: Racial Disparities in Cesarean Delivery Rates: Can a Machine Learning Model Reduce These Biases?

STUDY DESIGN: Variation exists in both rates of and indication for cesarean delivery (CD) by race which may be due to provider bias. As machine learning (ML) models trained on provider behaviors become more common, it is critical to ensure that these biases are not being replicated and amplified. The objective of this study is to identify whether there are differences in CD rate by race in our total delivery population and whether these persist in a supervised ML model.

RESULTS: 39,452 deliveries were performed with this distribution: 21,360 White, 6,976 LatinX, 5,048 Asian, 3,733 Black, and 2,335 Other. Actual rates of CD differed by race: White subjects had the lowest rate (17.8%), Black subjects the highest rate (26.5%), $p < 0.001$ (Figure 1). As expected, the ML model recommended lower CD rates for all races (Table 1); however, the model recommendations reduced the disparity for some races (White, Black, Other) while exacerbating it for others (Asian, Hispanic).

CONCLUSION: Consistent with the literature, significant variability exists by race in the CD rate. Despite excluding race as a predictor, a ML model trained on low CD rate physicians demonstrated persistent differences in recommendation by race. This suggests that low CD rate physicians also treat patients differently based on race, and consideration should be given to mitigation strategies in creating prescriptive ML models.

1149 Association between preconception counseling and glucose control at conception in patients with pre-existing diabetes mellitus

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OBJECTIVE: To determine if preconception counseling for patients with pre-existing diabetes mellitus (DM) differs between obstetricians and other providers with regard to frequency, content, or association with early pregnancy glycemic control.

STUDY DESIGN: All patients with pre-existing DM in our Diabetes in Pregnancy clinic, which cares for more than 50% of the state's pregnant patients with DM, were screened for enrollment. To be included, participants had to able to read English, have pre-existing diabetes, have seen a provider within the previous year, and be less than 28 weeks gestation. Demographics and medical history were collected from the questionnaires and medical charts. The study was powered to detect a 1% difference in early pregnancy hemoglobin A1c between patients who saw an obstetrician compared to another type of provider.

RESULTS: From May 2015 to Dec. 2019, 195 eligible patients were approached and 161 patients completed the questionnaire; 45% were seen by an obstetrician and 55% by another provider. Patients seen by an obstetrician were more educated, more likely to be partnered, and report a shorter inter-pregnancy interval. In total, only 46% of