

RESULTS: 56 women were enrolled and had all specimens collected; 51 had complete data for analysis (non-obese n=26, obese n=25). Approximately 40% of women were GBS negative on admission with no difference between groups (61% vs. 62%, p=0.96). There was no difference in the median maternal serum PCN levels between groups (Table 1). There was, however, a significant difference in median cord blood PCN levels between groups (6.7 mcg/mL vs. 2.7 mcg/mL, p< 0.001) with no difference in time from PCN to delivery. Post-natally, 8% of neonates born to women in both groups were GBS positive by ear swab with no difference between groups. There were no differences in infectious outcomes.

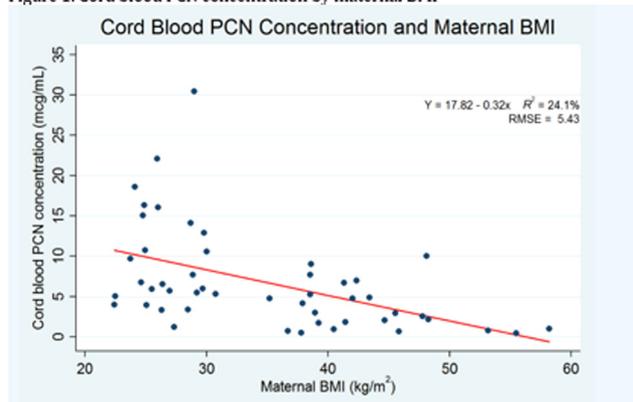
CONCLUSION: Whether the 2.5 times lower median cord blood PCN levels in obese women affects rates of EOGBS disease requires future study. Importantly, our study demonstrates that current practices for EOGBS disease prevention result in unnecessary exposure in up to 40% of patients. These findings demand improved strategies to mitigate the risks of excess antibiotic usage while optimizing prevention of EOGBS infection.

Table 1. Demographic and outcome data by group

	Non-obese (n=25)	Obese (n=26)	p-value
Maternal Characteristics			
BMI (kg/m ²) ^a	26.7 (2.4)	43.1 (6.0)	<0.001
Age ^a	28.9 (6.0)	28.2 (4.3)	0.681
Race			0.227
White	7 (27)	3 (12)	
African-American	15 (58)	20 (80)	
Other	4 (15)	2 (8)	
Insurance type			0.374
Private	13 (50)	9 (38)	
Medicaid	13 (50)	15 (63)	
Nulliparous	12 (46)	7 (28)	0.180
Diabetes	4 (16)	3 (12)	1.0
Hypertension			0.002
Chronic	0 (0)	4 (16)	
Pregnancy related	5 (19)	12 (48)	
Antibiotic use in pregnancy	6 (23)	3 (12)	0.300
PROM	7 (27)	4 (16)	0.343
Meconium	1 (4)	4 (16)	0.191
Primary Outcomes			
Maternal serum PCN level (mcg/mL) ^b	4.0 [3.0-5.6]	4.2 [3.1-6.7]	0.528
Time from last PCN dose to blood draw (min) ^b	246.9 [238.1-253.9]	240.3 [229.4-265.3]	0.378
Cord blood PCN level (mcg/mL) ^b	6.7 [5.3-14.1]	2.7 [1.0-5.1]	<0.001
Time from start of PCN to delivery (min) ^b	767.9 [622.6-1046.4]	954.6 [679.4-1173.1]	0.287
Time from last PCN dose to delivery (min) ^b	103.8 [72.1-194.4]	172.6 [98.3-242.5]	0.134
Secondary Outcomes			
Chorioamnionitis	3 (12)	1 (4)	0.609
Endometritis	2(8)	0 (0)	0.490
Neonatal Sepsis workup	1 (4)	0 (0)	1.0
Neonatal GBS disease	0 (0)	0 (0)	-

All data are presented as n(%) unless otherwise noted. ^amean (SD), ^bmedian [IQR].

Figure 1. Cord blood PCN concentration by maternal BMI



44 Racial disparities in prematurity persist among women of high socioeconomic status (SES)

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OBJECTIVE: Despite persistent racial disparities in preterm birth (PTB) in the US among non-Hispanic (NH) black women compared to NH white women, it remains controversial whether socio-economic status (SES) factors can explain these differences. We sought to evaluate whether disparities in PTB persist among NH black women of high SES.

STUDY DESIGN: We conducted a population-based cohort study using US live birth records from the National Vital Statistics System, 2015-2017. We included singleton, non-anomalous pregnancies among women who were of high SES (defined as having ≥ 16 years of education and private insurance and not receiving Women, Infants and Children [WIC] benefits) and who identified as NH white, NH black, or both NH black and white races. The primary outcome was PTB < 37 weeks; secondary outcomes included PTB < 34 and < 28 weeks. Data were analyzed with chi-square, t-test, logistic regression.

RESULTS: Of 11,376,439 women carrying singleton, non-anomalous pregnancies during the study period, 2,170,686 (19.1%) met inclusion criteria. Of these eligible women, 92.9% were NH white, 6.7% NH black, and 0.4% both NH white and black races. Overall, 5.9% delivered < 37, 1.3% < 34, and 0.3% < 28 weeks. Demographic and baseline characteristics are in Table 1. In unadjusted analyses, the rate of PTB at each GA cutoff was higher for women of mixed NH white and black race, and highest for women who were NH black only compared to women who were NH white only (Table 1, all p< 0.001). In regression models, maternal race remained significantly associated with PTB at each GA cutoff, with highest odds at the earliest delivery GA cutoffs (Figure 1).

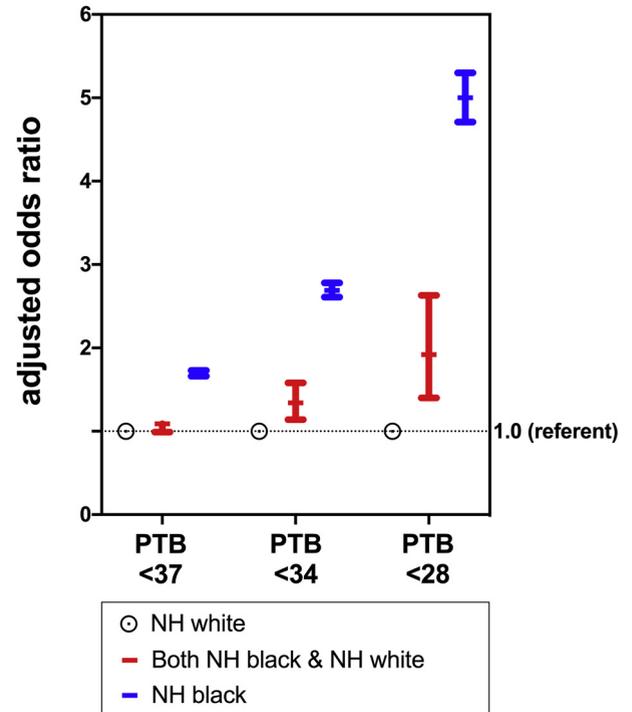
CONCLUSION: Even among college-educated women with private insurance who are not receiving WIC, racial disparities in prematurity persist. These results suggest that factors other than socio-demographics are important in the underlying pathogenesis of PTB and in etiologies of racial disparities.

Table 1. Characteristics of women by maternal race. Data are n(%) unless specified. Data are n(%) unless specified.

Characteristic	NH white women N=2,017,470	NH black and NH white race women N=8,604	NH black women N=144,612	P-value
Maternal age, mean years ± SD	32.0 ± 4.1	31.6 ± 4.6	32.6 ± 4.6	<0.001
Interpregnancy interval <12 mo. since last live birth*	5,300 (0.50)	14 (0.35)	527 (0.73)	<0.001
Married	1,866,436 (92.5)	6,501 (75.6)	107,407 (74.3)	<0.001
Previous preterm birth*	41,560 (2.1)	204 (2.4)	4,220 (2.9)	<0.001
Male fetus	1,035,115 (51.3)	4,414 (51.3)	73,292 (50.7)	<0.001
Smoked during pregnancy	12,357 (0.6)	81 (0.9)	534 (0.4)	<0.001
Chronic hypertension	28,119 (1.4)	158 (1.8)	5,580 (3.9)	<0.001
PTB <37 weeks	112,652 (5.6)	545 (6.3)	14,293 (9.9)	<0.001
PTB <34 weeks	23,886 (1.2)	147 (1.7)	5,142 (3.6)	<0.001
PTB <28 weeks	4,314 (0.2)	39 (0.5)	1,783 (1.2)	<0.001

* Of 1,137,495 multiparous women with a previous live birth

Figure 1. Regression results. Shown is the adjusted odds ratio (95% CI) of PTB at each gestational age cutoff by maternal race. All models adjusted for marital status, hx of PTB, chronic HTN, smoking, and male fetus.



45 Impact of a novel smartphone application on low-income women's breastfeeding rates: a randomized controlled trial



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OBJECTIVE: Low-income women are less likely to exclusively breastfeed on postpartum day 2 (PPD2) versus high-income women but suggested in focus groups that on-demand video on breastfeeding and normal infant behavior would help. Because smartphone applications (apps) provide on-demand video, we aimed to determine whether a novel app—BreastFeeding Friend (*BFF*)—impacts breastfeeding rates for low-income women.

STUDY DESIGN: This RCT included nulliparous, low-income English-speaking women at 36 weeks gestation. Consenting women received an android phone and 3 months of prepaid internet service before being randomized to *BFF* or a skeleton app. *BFF* was created with lactation consultants and refined by focus groups of pregnant low-income women to provide optimal tech-based lactation and postpartum support. The skeleton app contained digital breastfeeding handouts. Our primary outcome was exclusive breastfeeding at PPD2; secondary outcomes were breastfeeding rates until 6 months postpartum and reported best breastfeeding resource. Assuming baseline exclusive breastfeeding rates on PPD2 of 34%, a sample size of 85 women per arm would afford 80% power to detect 65% increase in exclusive breastfeeding on PPD2 for *BFF* while accounting for loss-to-follow-up.