



Racial Health Disparities in Severe Maternal Morbidity (SMM) Before and After Implementation of an Enhanced Recovery After Surgery Protocol (ERAS)

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BACKGROUND

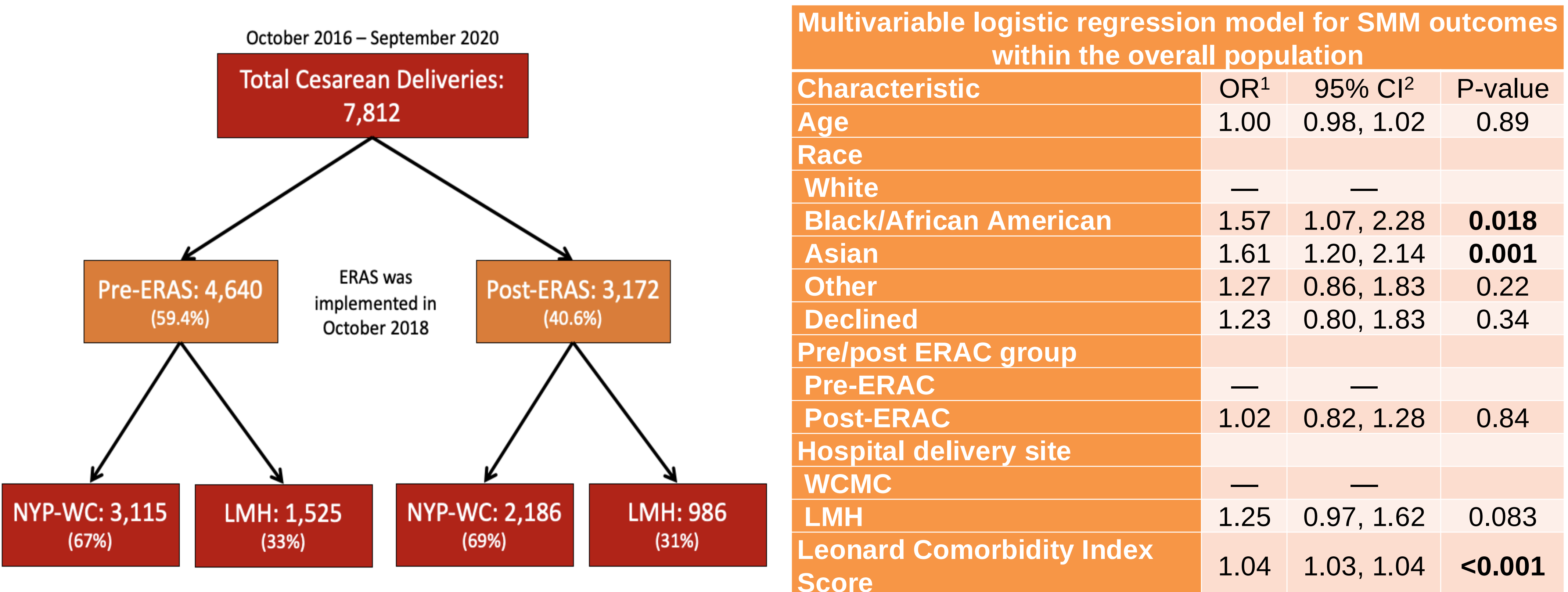
- Enhanced recovery after surgery for cesarean delivery (ERAC or ERAS-CD) is an evidence-based pathway that is implemented to improve maternal outcomes, functional recovery, maternal-infant bonding, patient experience, and communication across multidisciplinary teams.¹
- Racial disparities in obstetrical care and outcomes have been extensively reported; Black women are 2-4 times more likely to die in the peripartum period and are 1.39 times more likely to have severe maternal morbidity (SMM) than White women.²
- Standardized protocols, like ERAS, can reduce these disparities and promote equity by moderating implicit bias in decision making. However, the novel use of ERAS protocols as a practical solution to address perioperative disparities in obstetrical care outcomes is not well known.¹

GOAL

- We aim to evaluate racial differences in SMM outcomes among patients enrolled in an ERAC program.

METHODS

- Retrospective observational study
- Inclusion criteria: all adult cesarean delivery procedures (age ≥ 18)
- Sites: NewYork Presbyterian-Weill Cornell (NYP-WC) and Lower Manhattan Hospital (LMH)
- ERAC was implemented in October 2018 through standardization of computer patient order sets and clinical decision support (CDS) tools
- Data: EPIC with integrated EMR/AIMS system linking pre-, peri-, and post-operative data
- Primary Outcome: racial differences in peripartum SMM complications pre- and post-ERAC
- A logistic regression model was created to estimate adjusted odds ratios with 95% CI for the outcome of SMM



Characteristics	Pre-ERAC			Post-ERAC		
	OR ¹	95% CI ²	P-value	OR ¹	95% CI ²	P-value
Age	0.99	0.96, 1.02	0.39	1.02	0.99, 1.05	0.24
Race						
White	—	—		—	—	
Black/African American	1.88	1.14, 3.06	0.012	1.26	0.69, 2.22	0.44
Asian	1.70	1.16, 2.49	0.007	1.49	0.95, 2.32	0.081
Other	1.27	0.75, 2.08	0.36	1.23	0.69, 2.12	0.47
Declined	1.21	0.68, 2.04	0.50	1.27	0.65, 2.33	0.46
SDI quintile						
1st	—	—		—	—	
2nd	0.55	0.34, 0.86	0.009	1.49	0.89, 2.52	0.14
3rd	0.97	0.62, 1.50	0.89	1.31	0.74, 2.32	0.36
4th	0.79	0.50, 1.25	0.31	1.52	0.87, 2.67	0.14
5th	0.83	0.50, 1.36	0.47	1.81	0.99, 3.31	0.053
Hospital delivery site						
WCMC	—	—		—	—	
LMH	1.21	0.86, 1.70	0.27	1.33	0.90, 1.96	0.14
Leonard Comorbidity Index Score	1.03	1.03, 1.04	<0.001	1.04	1.03, 1.04	<0.001

¹OR = odds ratio
²CI = confidence interval
No. obs = 7,406

RESULTS

- The sample consisted of 7,812 cesarean delivery patients, of which 4,640 were pre-ERAC (59.4%) and 3,172 were post-ERAC (40.6%).
- Black (aOR 1.88, 95% CI 1.14 to 3.06, p = 0.012) and Asian patients (aOR 1.70, 95% CI 1.16 to 2.49, p = 0.007) had significantly higher odds of SMM relative to white patients in the pre-ERAC group.
- In the post-ERAC group, this relationship was no longer statistically significant [Black (aOR 1.26, 95% CI 0.70 to 2.22, p = 0.44) and Asian (aOR 1.49, 95% CI 0.95 to 2.32, p = 0.081)].

CONCLUSIONS

- Our study demonstrates that ERAC may play a role in reducing racial disparities.
- Current literature on disparities has predominately focused on racial differences in length of stay, mortality, opioid use, and readmissions.^{1,3} Our study offers detailed information on SMM outcomes by race among obstetrical patients treated at two large, academic hospitals.
- By attenuating potential provider biases and reducing variations in obstetrical care, standardization of practices in ERAC protocols can help address disparities.
- With over a million cesarean deliveries performed every year, it is important that we continue to monitor ERAC metrics by race in order to provide high quality care to all patients, reduce disparities, and promote equity in the healthcare system.

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