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Title

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Publication Date

2022

Data Availability

The data associated with this publication are not available for this reason: N/A

Comparison between the old and new MFMU TOLAC Calculator – Which is more accurate?

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Introduction

In 2017, the Maternal Fetal Medicine Units (MFMU) Network disseminated a Trial of Labor after Cesarean (TOLAC) calculator. An updated (2021) version of the calculator does not include race and ethnicity, but instead focuses on prior medical and OB history, in addition to age and BMI. The objective of this study was to compare the actual vs predicted VBAC rates between the old and new MFMU calculators.

Methods

A retrospective cohort study of all patients undergoing a TOLAC from a single academic medical center between 2018-2020 was conducted. Data, including the number of prior vaginal/cesarean births, race/ethnicity, BMI, estimated fetal weight, as well as other VBAC predictors were collected and analyzed. The predicted vs. actual VBAC rates were analyzed for the old and new calculator.

Results

165 women undergoing a TOLAC were included, of those 124 (75.1%) had a successful VBAC (Table 1). Since our cohort was from 2018-2020, a TOLAC score based on the 2021 MFMU TOLAC calculator was calculated for all patients retrospectively by analysis of variables stored in the electronic medical records. 79 of the 165 patients had a calculated TOLAC score based on the 2017 MFMU calculator calculated prospectively at the time of admission and documented in the clinical notes. When comparing the predicted vs. actual VBAC rates for both calculators in our cohort both the new and old calculator underestimated the 60-69% success range group, while the old calculator overestimated the 40-49% success group and underestimated the 70-79% success group. The new calculator underestimated groups below 70% success and overestimated in the 90-100% success group (Figure 1).



The new TOLAC calculator was found to be no more accurate than the old TOLAC calculator in our cohort.



Conclusion

Both the old and new MFMU TOLAC calculators underestimated and overestimated certain groups in our cohort. Further validation of the new MFMU TOLAC calculator in different cohorts is warranted in order to validate the generalizability of the calculator.

Figures

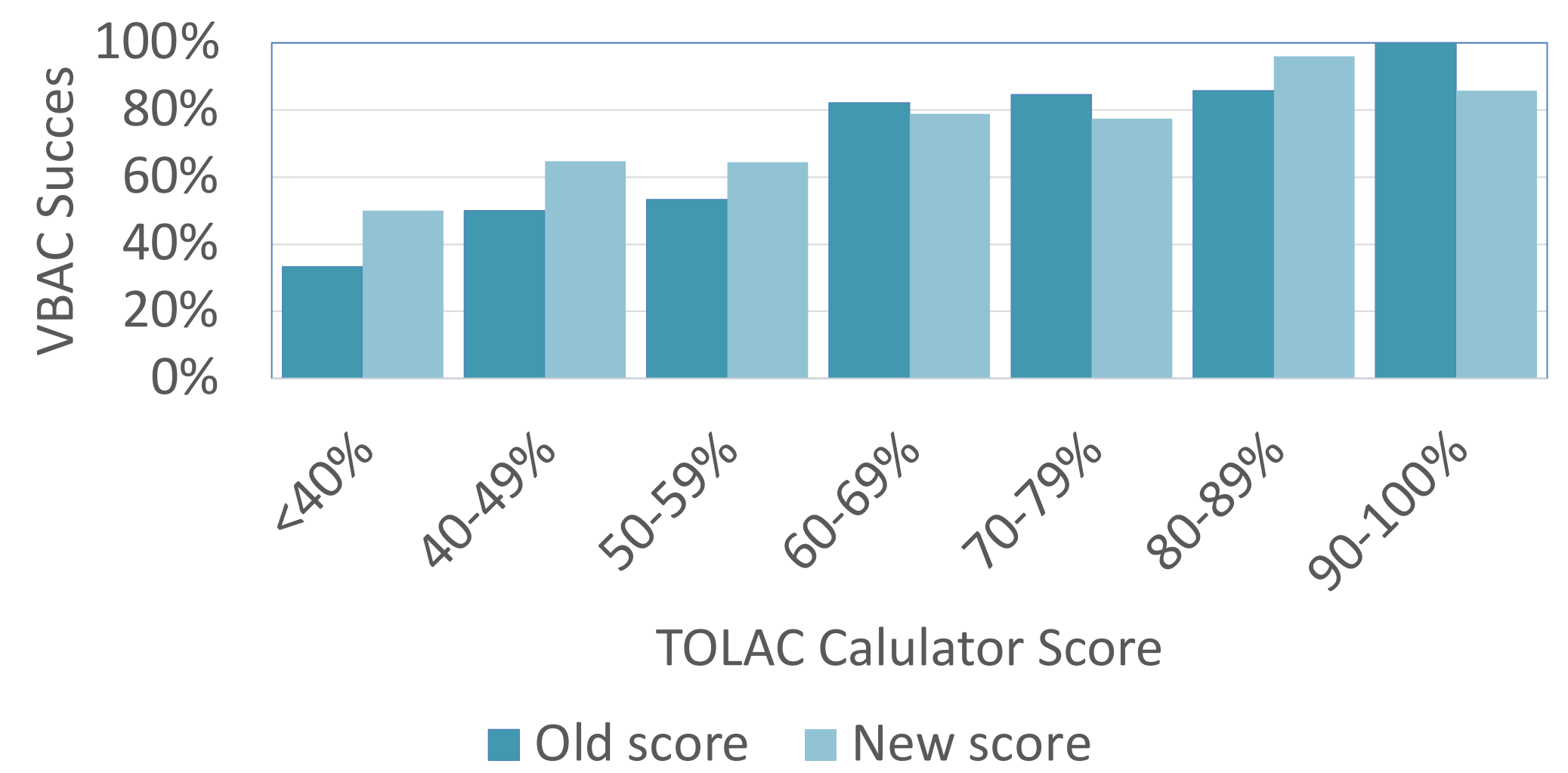


Figure 1: Comparison of the MFMU TOLAC Calculator Score vs. Actual VBAC Success in Patients with Both Old and New MFMU Calculator

Patient Characteristics (n = 166)	
Maternal age (years)	33.1
Race	
Asian	37
Black	4
Native Hawaiian or Other Pacific Islander	5
Other	56
White	61
Ethnicity	
Hispanic	64
Not Hispanic	102
Gravidity	3.1
Prity	2.6
EFW prior to delivery (grams)	2,956.7
Height (inches)	63.4
Weight (pounds)	169.8
BMI	29.7
Prior GDM	17 (10.2%)
Current GDM	21 (12.0%)
Prior Pre-Eclampsia	13 (7.8%)
Chronic HTN	1 (0.6%)
Current HTN disorder of pregnancy	12 (7.2%)
Previous vaginal delivery	53 (31.9%)
Hx of vaginal delivery prior to CS	25 (15.1%)
Hx of VBAC	31 (18.7%)

Table 1: Characteristics and Outcomes of Patients with a Calculated MFMU TOLAC Score