



A Comparison of the Characteristics of Patients with Successful Vaginal Birth After C-section vs. Patients with Repeat C-section at St. Francis Hospital

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INTRODUCTION

The cesarean delivery rate was 32.3% in the US in 2023, up from 1% in 2022.

Women with a prior cesarean delivery typically have three main options for subsequent births: a trial of labor after cesarean (TOLAC), which may result in a successful vaginal birth (VBAC), an unplanned Cesarean Delivery (CD), or a scheduled repeat CD.

Successful vaginal birth after cesarean (VBAC) reduces risks associated with repeat CD, including hemorrhage, infection, and hysterectomy.

Predictors of VBAC success include maternal age, BMI, and previous vaginal delivery.

OBJECTIVES

We compared the demographic and clinical characteristics of patients who had a VBAC to those who underwent repeat CD to identify independent predictors of VBAC success.

METHODS

This is a retrospective cohort study of patients with prior CD who delivered at St. Francis Hospital between January 1 and December 31, 2020.

Demographics (age, race, ethnicity, BMI, parity and prenatal clinic type) comorbidities, and pregnancy complications were compared between those who had a VBAC and those who had a repeat CD.

Data was analyzed using chi-square, t-test and multivariate logistic regression.

RESULTS

Table 1: Comparison of VBAC vs. Repeat Cesarean Deliveries (N=444)

Characteristics	VBAC (n=39, 8.8%)	Repeat CD (n=405, 91.2%)	p-value
BMI at delivery (mean)	31.3	35.2	<0.01
Gestation (days, mean)	274.0	267.7	<0.01
Prenatal care at St. Francis	56.4 %	30%	<0.01
Hispanic ethnicity	7.7%	22.8%	0.03
Chronic hypertension	0%	9.9%	0.04

The VBAC group had lower BMI, longer gestation, lower rate of chronic hypertension and were more likely to receive prenatal care at St. Francis.

Table 2: Logistic Regression Predictors of VBAC Success

Predictors	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
Parity = 1	2.45	1.19 – 5.05	0.02
Prenatal care at SFH	3.12	1.55 – 6.29	0.002
Lower BMI at delivery (per unit ↑)	0.90	0.85 – 0.96	0.001

Predictors of VBAC were single parity, prenatal care at St. Francis and lower BMI.

LIMITATIONS

Counseling: The study could not assess how patients were counseled for the mode of delivery.

Single-site study: The analysis was conducted at St. Francis Hospital, which may limit generalizability to broader populations.

Sample size: Only 39 women achieved VBAC (8.8% of the cohort), limiting statistical power to detect associations for less common predictors.

Limited timeframe: The study reviewed one year of deliveries, which may not reflect trends across multiple years or practice changes.

FUTURE DIRECTION

Multicenter studies: Expanding to multiple hospitals or a regional dataset could improve generalizability and capture diverse patient populations.

Inclusion of patient-centered factors: Future work should incorporate patient preferences, counseling strategies, and social determinants of health, as these influence decisions around TOLAC vs. repeat CD.

CONCLUSION

In this cohort, lower parity, lower BMI, and attendance at a St. Francis prenatal clinic were independent predictors of VBAC success. While the study does not establish causality, the association with prenatal care site may reflect differences in counseling, patient selection, or institutional support for TOLAC, underscoring the potential impact of provider engagement and prenatal care practices on VBAC outcomes.

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