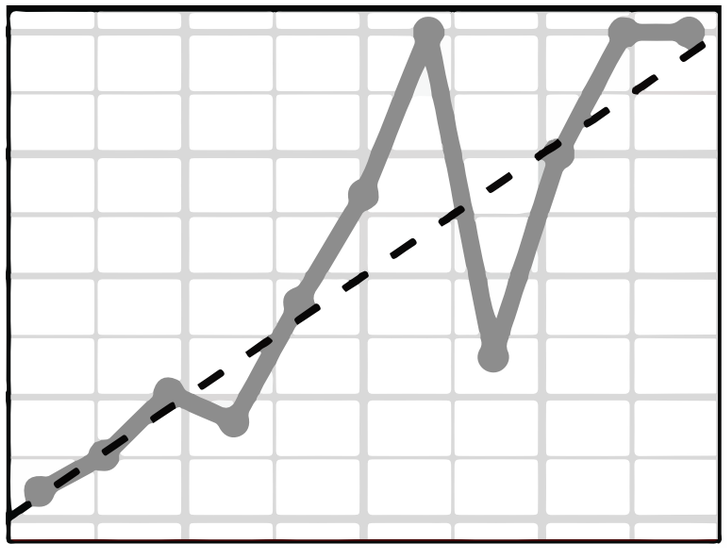
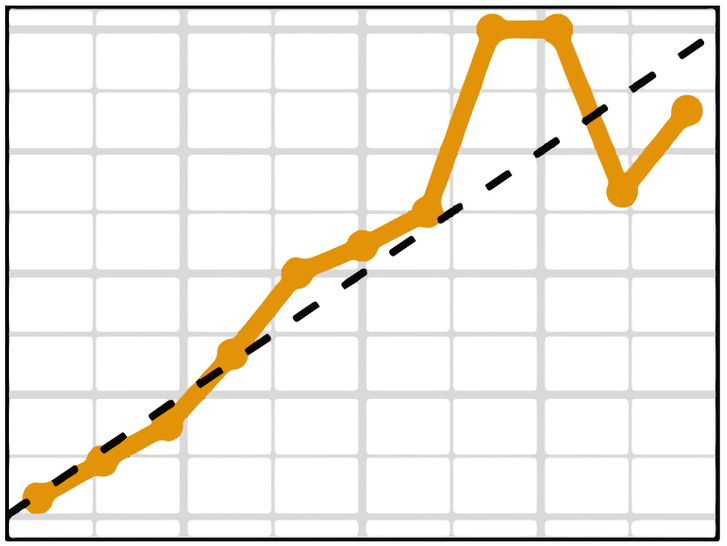
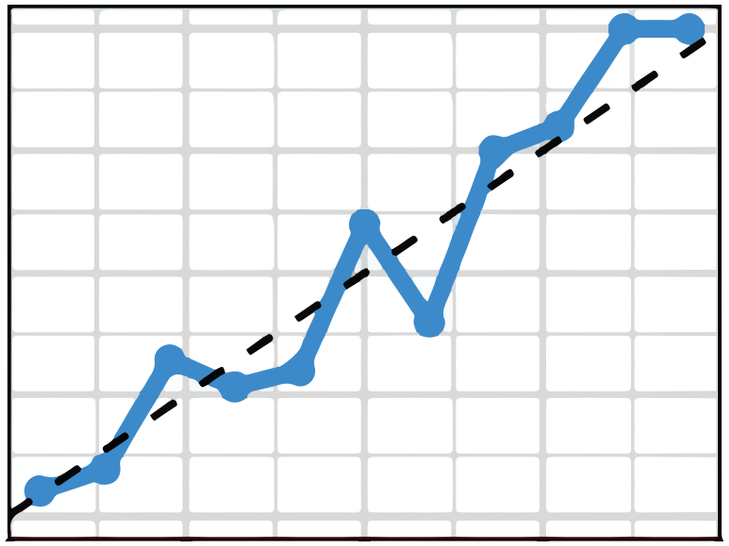
Base Model



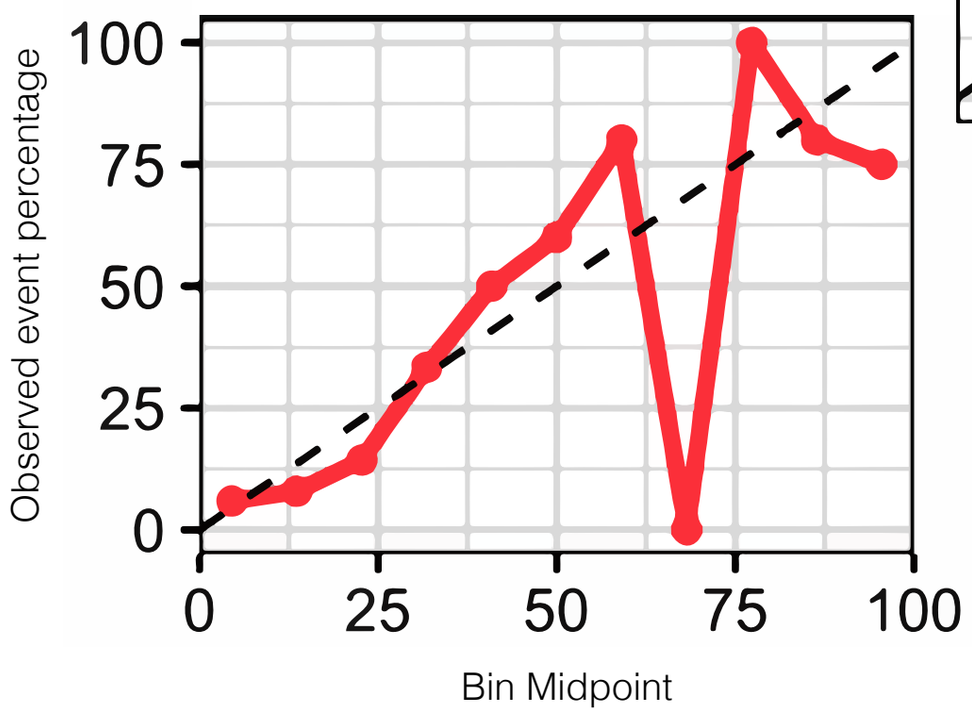
Full Model



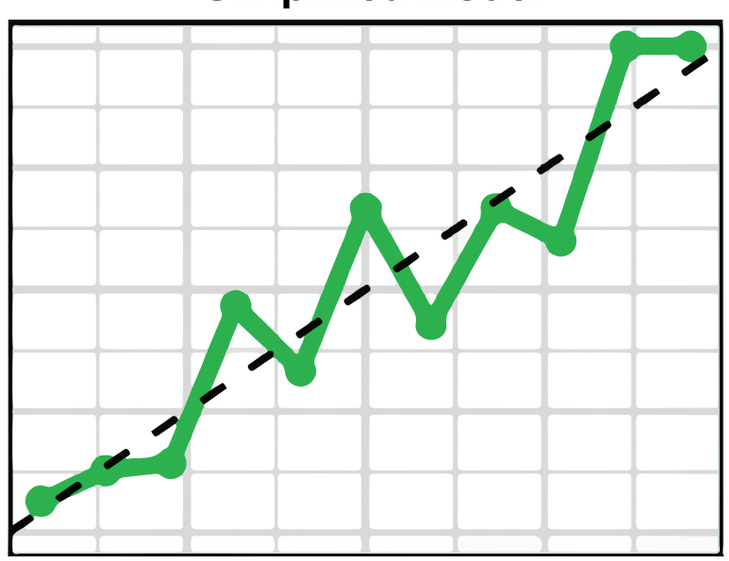
Clinical Confounding Factors Model



Extended Mechanistic Model



Simplified Model



	Variable	Odds Ratio (95% CI)	P-Value	ROC-AUC (95% CI)	AIC	Hosmer-Lemeshow Test
Base Model	Alpha power	0.75 (0.67, 0.84)	<0.001 *	0.801 (0.717, 0.884)	139.76	P-value: 0.5709
Extended Mechanistic Model	Alpha power	0.80 (0.69, 0.92)	0.0017 *	0.845 (0.768, 0.922)	137.83	P-value: 0.06052
	Age	1.03 (0.99, 1.06)	0.1646			
	Anesthetic drug type	0.50 (0.20, 1.25)	0.1375			
	Anesthetic drug dose (standardized)	0.76 (0.38, 1.53)	0.4455			
	Type * Dose	1.83 (0.74, 4.53)	0.1944			
	Propofol bolus rate	1.02 (1, 1.03)	0.0165 *			
Clinical Confounding Factors Model	Alpha power	0.75 (0.67, 0.85)	<0.001 *	0.800 (0.717, 0.884)	145.45	P-value: 0.7112
	Sex	1.21 (0.51, 2.86)	0.6645			
	Intraop hypotension	1.00 (1.00, 1.00)	0.7417			
	Pre/intraop midazolam	1.01 (0.67, 1.53)	0.9468			
Simplified Model	Alpha power	0.75 (0.67, 0.84)	<0.001 *	0.821 (0.741, 0.902)	135.56	P-value: 0.762
	Propofol bolus rate	1.01 (1.00, 1.03)	0.0142 *			
Full Model	Alpha power	0.81 (0.70, 0.94)	0.0051 *	0.851 (0.777, 0.925)	142.45	P-value: 0.5161
	Age	1.03 (0.99, 1.07)	0.1198			
	Sex	1.69 (0.65, 4.39)	0.2787			
	Intraop hypotension	1.00 (1.00, 1.00)	0.8052			
	Pre/intraop midazolam	1.10 (0.71, 1.71)	0.6750			
	Anesthetic drug type	0.45 (0.17, 1.15)	0.0954			
	Anesthetic drug dose (standardized)	0.81 (0.39, 1.66)	0.5581			
	Type * Dose	1.68 (0.65, 4.31)	0.2806			
	Propofol bolus rate	1.02 (1.00, 1.03)	0.0118 *			

Supplementary Table 1:

The Base Model, the Extended Mechanistic Model, the Clinical Confounding Factors Model, the Simplified Model and the Full Model are logistic regression models consisting of different combinations of potential contributing factors associated with burst suppression. Alpha power and the rate of intraoperative propofol boluses are the only variables significantly associated with the probability of burst suppression across all models. Alpha power and propofol bolus rate remain significantly associated with the propensity for burst suppression in the Full Model which accounts for as much confounding as possible. The values for area under the Receiving Operating Characteristic curves (ROC-AUC) along with a 95% Confidence Interval (CI) and the Akaike Information Criterion (AIC) values appear comparable for the Base Model, the Extended Mechanistic Model, the Clinical Confounding Factors Model and the Simplified Model as well as the Full Model. The ROC-AUCs for the Extended Mechanistic Model and the Full Model are slightly larger than other three models, suggestion better model performance. The Simplified model had the lowest AIC value, suggesting that the added parameters in the other models are less helpful. The Hosmer-Lemeshow test results show that none of the models' predicted event rates deviate significantly from the observed events. Non-significant P value indicates non-significant deviation from good model calibration to the data.