

Supplemental Table S1. Logistic models and model performance metrics for prediction of early postoperative outcomes.

Variable		Operative mortality	Composite complications	Bleeding complications	Postoperative stroke	Newly initiated dialysis	Deep sternal wound infection	Prolonged mechanical ventilation	Gastrointestinal bleeding	ICU stay more than 7 days
Age Category	<60, 60-65, 65-70, 70-75, 75-80, 80≤	1.28	1.13	1.09	1.15	1.14		1.16	1.23	1.19
Gender	Male				1.44					0.88
Body surface area [m ²]				0.93						
BMI (kg/m ²)	30 and over		1.38					1.53		1.65
Smoker	Yes		1.23					1.16	1.77	
Diabetes	Yes		1.18			1.78				
Diabetes on treatment	Yes						1.27			
Chronic kidney disease	Yes	2.15	2.16	1.94		7.55	1.77	1.65	1.57	2.11
Hemodialysis	Yes	1.98							1.55	
Hypertension	Yes		1.12		1.32		1.26			
Respiratory disability	Moderate to severe									1.7
	Mild to severe	2.08	1.59			1.89	1.94	1.99	1.68	1.41
PAD	Yes	1.72	1.31		1.37			1.26		
	Thoracic aorta					1.94				1.48
	Abdominal aorta						1.46			1.21
Cerebrovascular disease	Yes		1.28		1.98			1.23		1.29
	Within 2 weeks	2.89			2.59			1.61		
Previous CABG	Yes	2.46	2.26	5.17		1.7	2.06	1.81	1.85	2.37
Previous MI	Yes		1.11					1.34		
Congestive heart failure	Within 2 weeks	1.8	1.32			1.43	1.45	1.36		1.38
Unstable angina	At the time of surgery		1.15					1.25		
Cardiogenic shock	At the time of surgery	1.75	1.76	1.46		1.61	1.65	1.81	2.11	1.91
Atrial fibrillation	Yes	2.02	1.23			1.61		1.55	1.37	1.61
CCS class	II and over									1.23
NYHA class	III		1.22					1.38	1.88	1.35
	IV	1.43	1.9		1.7	1.56		2.23	1.93	1.59
Preop catecholamine use	Yes	1.63				1.47				1.28
Aortic stenosis	Yes							1.42		
Mitral stenosis	Yes								3.44	
Triple vessel disease	Yes		1.22	1.29			1.52	1.29	1.3	1.3
LVEF	60% or less		1.12							1.26
LVEF	30% or less	2.6	1.63	1.71		1.81		1.48		2.32
Mitral insufficiency	III and over	2.04								1.48
Acuity status	Urgent to salvage	2.05	1.68		1.4	2.05		2.12		2.11
	Emergent to salvage	3.38	2.33	1.75	2.13	2.33		2.76		3.17
Concomitant cardiac or vascular surgery	Yes	2.08	1.42		2.29	1.75		1.61		1.59
		0.8655	0.7294	0.636	0.6744	0.8531	0.6358	0.7714	0.6756	0.7938

BMI, body mass index; CABG, coronary aorta bypass grafting; CCS, Canadian Cardiovascular Society; ICU, intensive care unit; LVEF, left ventricular ejection fraction; MI, myocardial infarction; NYHA, New York Heart Association; PAD, peripheral arterial disease.

Supplemental Table S2. Early postoperative outcomes of the study population after propensity score matching, adjusted for surgical volume.

First, to characterize volume, the average number of procedures that each surgeon performed during the study period was first determined. Then, categorical variables for volume by ranking surgeons in order of increasing estimated total volume was created. Finally, cutoff points that most closely sorted patients into 4 evenly-sized groups (low, low-medium, high-medium, and high volume) were selected. Multiple logistic regression analyses was used to examine the relationship between surgeon volume and postoperative outcomes by the use of beta-blockers, with adjustment for characteristics of the patients.

	Beta	No Beta	Odds ratio (95% CI)	<i>P</i>
Operative mortality, %	1.6	1.5	1.047 (0.832–1.317)	0.69
Composite complications, %	9.8	9.7	0.989 (0.898–1.089)	0.98
Bleeding complications, %	1.6	1.4	1.108 (0.876–1.401)	0.39
Postoperative stroke, %	1.3	1.4	0.933 (0.730–1.191)	0.93
Newly initiated dialysis, %	1.7	1.7	0.967 (0.776–1.205)	0.96
Deep sternal wound infection, %	1.5	1.5	0.954 (0.756–1.205)	0.69
Prolonged mechanical ventilation, %	6.0	5.8	1.031 (0.912–1.164)	0.63
Postoperative myocardial infarction, %	0.8	0.7	1.159 (0.840–1.597)	0.37