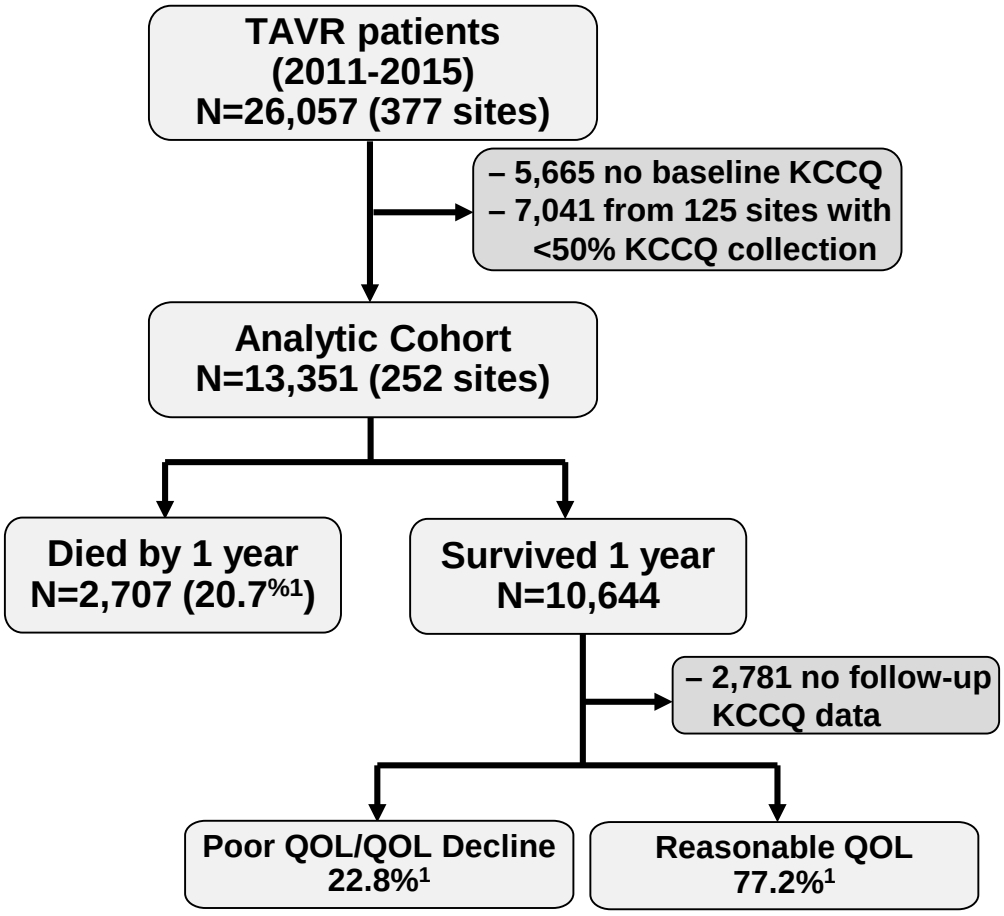
SUPPLEMENTAL MATERIAL

Supplemental Figure 1. Flowchart of the Analytic Cohort. [1]Rates of outcomes are inverse propensity weighted to account for missing data



Supplemental Table 1. Characteristics of patients treated at included versus excluded sites

	Included Sites (n=245 sites; 10,570 patients)	Excluded Sites (n=125 sites; 7,041 patients)	Standardized difference/ p-value
Teaching hospital	60.8%	68.8%	16.8%
Number of beds	500 (368, 685)	550 (408, 714)	0.076
Annual TAVR volume	17 (11, 26)	21 (12, 34)	0.015
Age (years)	84 (79, 88)	84 (79, 88)	0.222
Female sex	48.5%	48.1%	0.8%
White race	95.9%	95.2%	3.4%
STS mortality risk score (%)	6.8 (4.5, 10.3)	6.9 (4.6, 10.5)	0.247
<4%	18.9%	18.6%	0.8%
4-8%	41.6%	41.3%	0.6%
>8%	39.5%	40.1%	1.2%
Coronary artery disease	64.8%	62.2%	5.4%
Prior open heart surgery	32.6%	31.6%	2.1%
Previous stroke	12.0%	11.7%	0.9%
Peripheral arterial disease	31.3%	31.9%	1.3%
Severe chronic lung disease	13.4%	13.5%	0.3%
Home oxygen	12.4%	13.2%	2.4%
Renal function			
Dialysis dependent	3.9%	4.0%	0.5%
Creatinine ≥2.0 mg/dL without dialysis	6.1%	6.3%	0.8%
Creatinine <2.0 mg/dL	90.0%	89.7%	1.0%
Atrial fibrillation	43.1%	42.8%	0.6%
Permanent pacemaker/ICD	19.1%	20.5%	3.5%
LV ejection fraction			
<30%	7.0%	7.0%	0.0%
30-45%	18.3%	18.1%	0.5%
>45%	74.7%	74.9%	0.5%
Mean aortic gradient (mmHg)	43 (35, 51)	42 (34, 51)	
Moderate/severe mitral regurgitation	32.8%	31.5%	2.8%
KCCQ-OS	39 (23, 58)	38 (23, 57)	0.023

Continuous variables are presented as median (IQR) and compared using the Wilcoxon Rank Sum Test.
STS, Society of Thoracic Surgeons; ICD, implantable cardiac defibrillator; LV, left ventricular; KCCQ-OS, Kansas City Cardiomyopathy Questionnaire-overall summary score

Supplemental Table 2. Baseline characteristics of patients who survived 1 year based on availability of follow-up KCCQ data

	Data Available n=7,863	Missing Data n=2,701	Standardized difference/p-value
Age (years)	84 (79, 88)	84 (79, 88)	0.999
Female sex	49.4%	52.6%	6.4%
White race	95.9%	94.9%	4.8%
STS mortality risk score (%)	6.3 (4.3, 9.4)	6.9 (4.5, 10.3)	<0.001
<4%	21.8%	18.7%	7.7%
4-8%	44.2%	41.6%	5.3%
>8%	34.0%	39.7%	11.8%
Coronary artery disease	64.6%	61.9%	5.6%
Prior open heart surgery	33.0%	31.6%	3.0%
Previous stroke	11.6%	11.5%	0.3%
Peripheral arterial disease	29.8%	29.5%	0.7%
Severe chronic lung disease	0.114	0.141	8.1%
Home oxygen	10.5%	10.9%	1.3%
Renal function			
Dialysis dependent	2.9%	3.1%	1.2%
Cr ≥2.0 mg/dL without dialysis	4.9%	5.8%	4.0%
Cr <2.0 mg/dL	92.2%	91.0%	4.3%
Atrial fibrillation	40.1%	41.4%	2.6%
Permanent pacemaker/ICD	18.3%	18.3%	0.0%
LV ejection fraction			
<30%	6.1%	6.4%	1.2%
30-45%	17.3%	18.6%	3.4%
>45%	76.6%	75.0%	3.7%
Mean aortic gradient (mmHg)	43 (36, 52)	43 (36, 53)	0.070
Moderate/severe mitral regurgitation	31.5%	33.1%	3.4%
Baseline KCCQ-OS	41.7 (25.0, 60.9)	39.1 (24.0, 57.3)	<0.001

STS, Society of Thoracic Surgeons; ICD, implantable cardiac defibrillator; LV, left ventricular; KCCQ-OS, Kansas City Cardiomyopathy Questionnaire-overall summary score

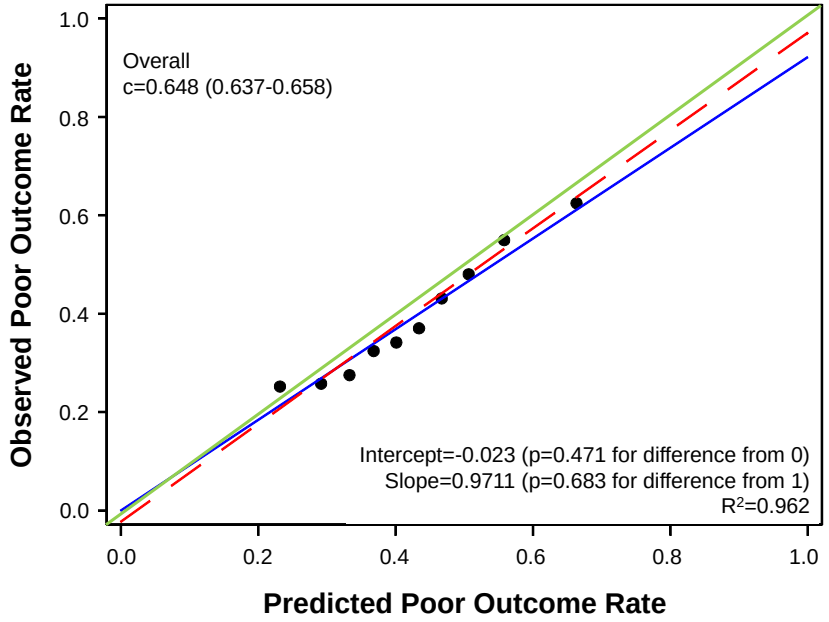
Supplemental Table 3. Examples of How to Calculate Estimated Risk for Poor Outcome

	Model coefficients	Patient 1 (high risk)	Patient 2 (low risk)	Patient 3 (medium risk)
Intercept	0.0022			
KCCQ-overall summary score	-0.0151	25 points (NYHA IV)	65 points (NYHA II)	50 points (NYHA III)
Mean aortic valve gradient	-0.0039	30 mmHg	50 mmHg	40 mmHg
Home oxygen	0.6007	1 (yes)	0 (no)	0 (no)
Creatinine	0.1733	2.5 mg/dL	1 mg/dL	1.3 mg/dL
Atrial fibrillation/flutter	0.3529	1 (yes)	0 (no)	1 (yes)
Diabetes mellitus	0.0704	0 (no)	0 (no)	0 (no)
Estimated Risk of Poor Outcome[1]		0.710	0.269	0.418

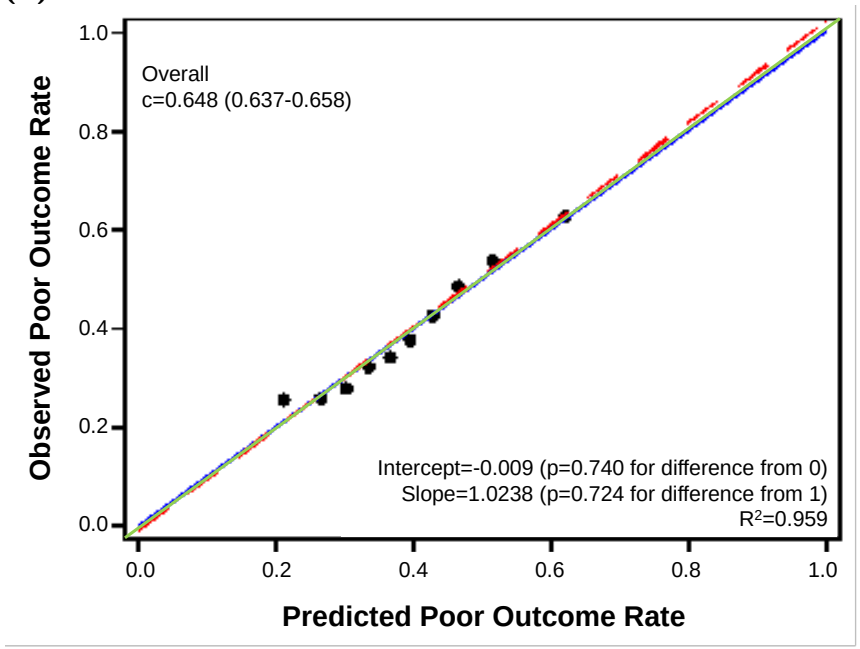
[1]Estimated Risk=1/(1+e^(-(intercept+coefficient A*value A+coefficient B*value B+…)))

Supplemental Figure 2. Calibration of the Poor Outcome Risk Model. (A) Model without inverse propensity weighting. (B) Model with inverse propensity weighting. The plots show predicted risk of poor outcome by deciles plotted against the observed rate of poor outcome in each decile. The red dashed line represents the regression line for the deciles; the blue line is the regression line forced through the 0 intercept; and the green line is the line of unity (i.e., perfect calibration). The statistical tests compare the red dashed and green lines.

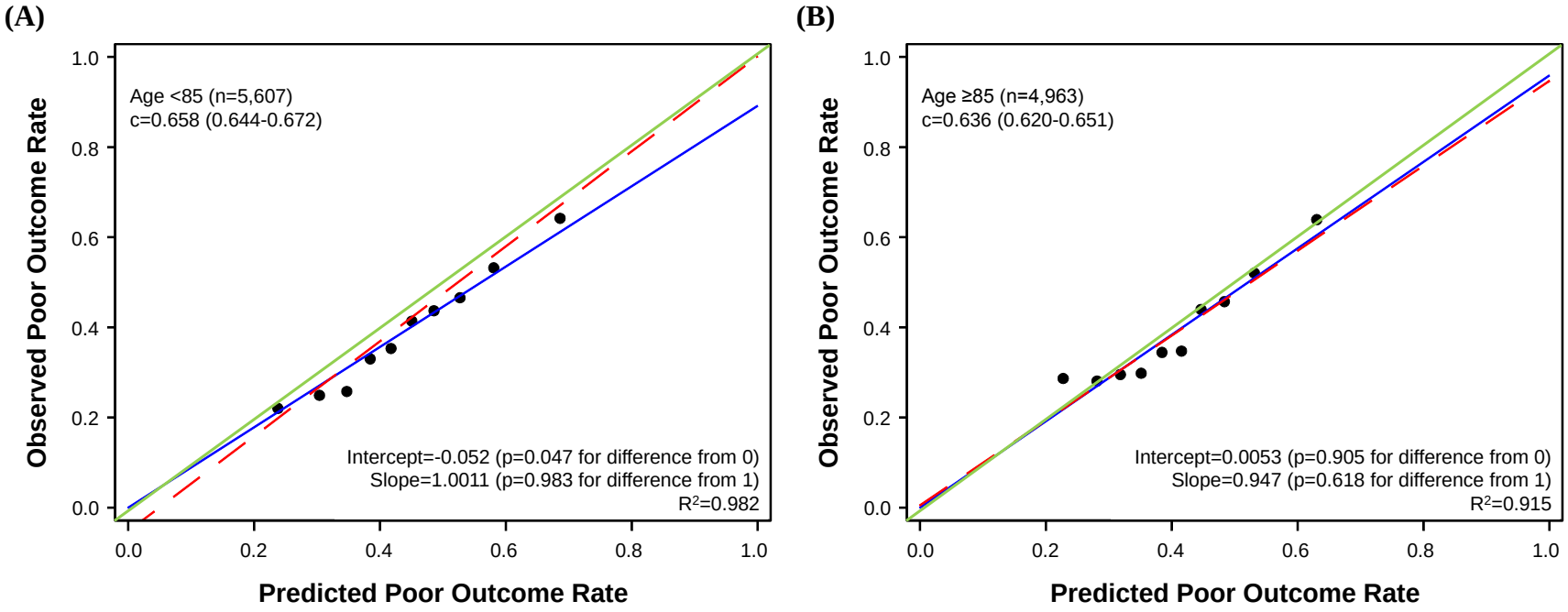
(A)



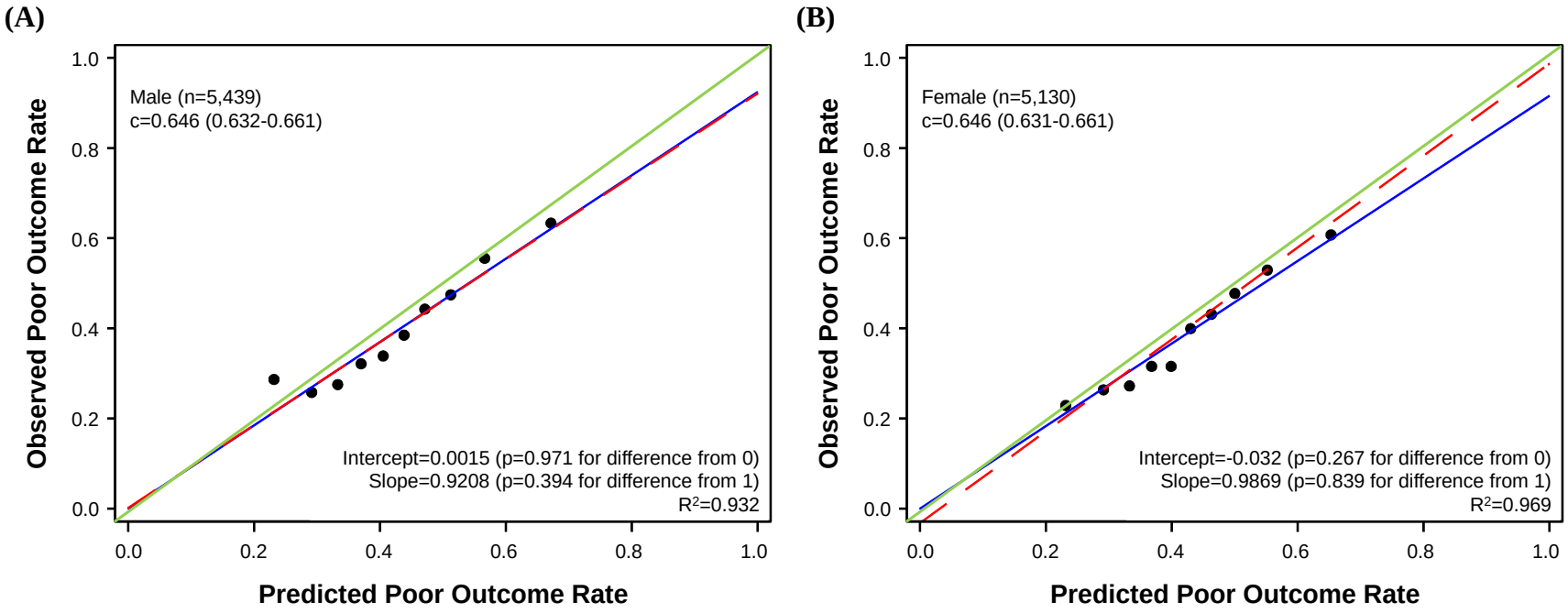
(B)



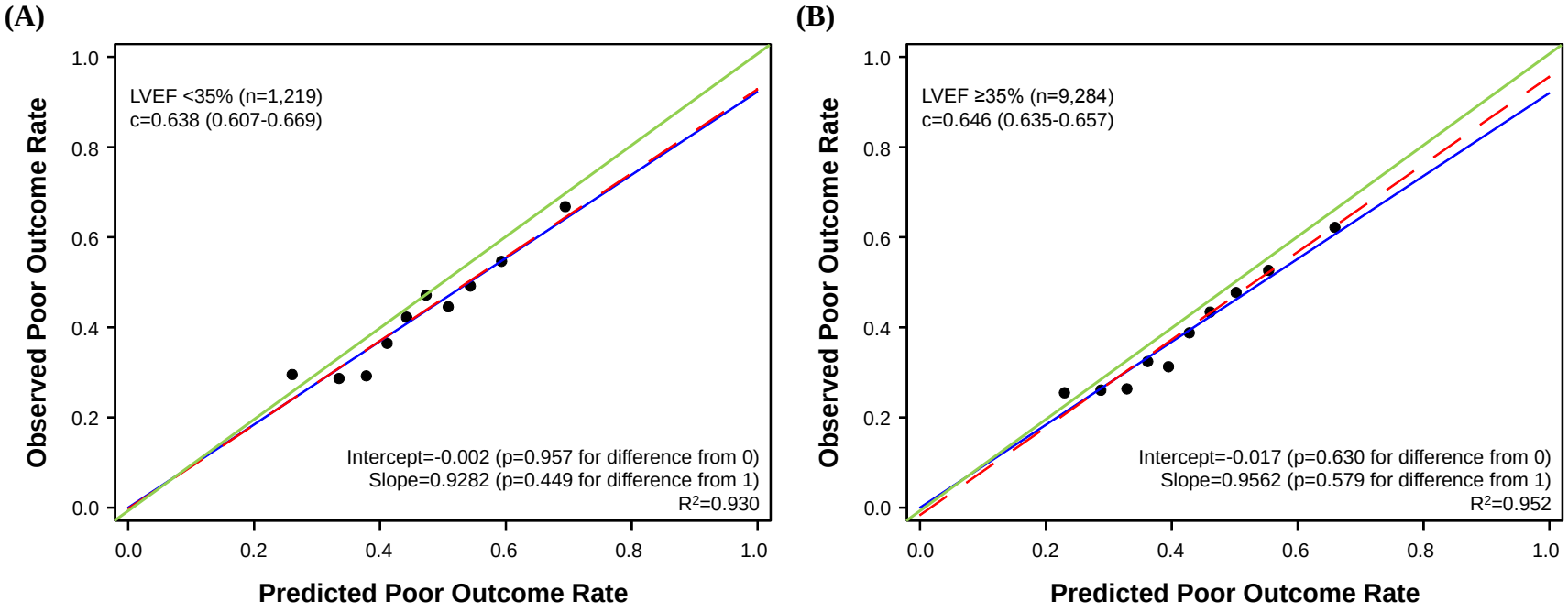
Supplemental Figure 3. Calibration of the Poor Outcome Risk Model. (A) Model in patients <85 years of age. (B) Model in patients ≥85 years of age.



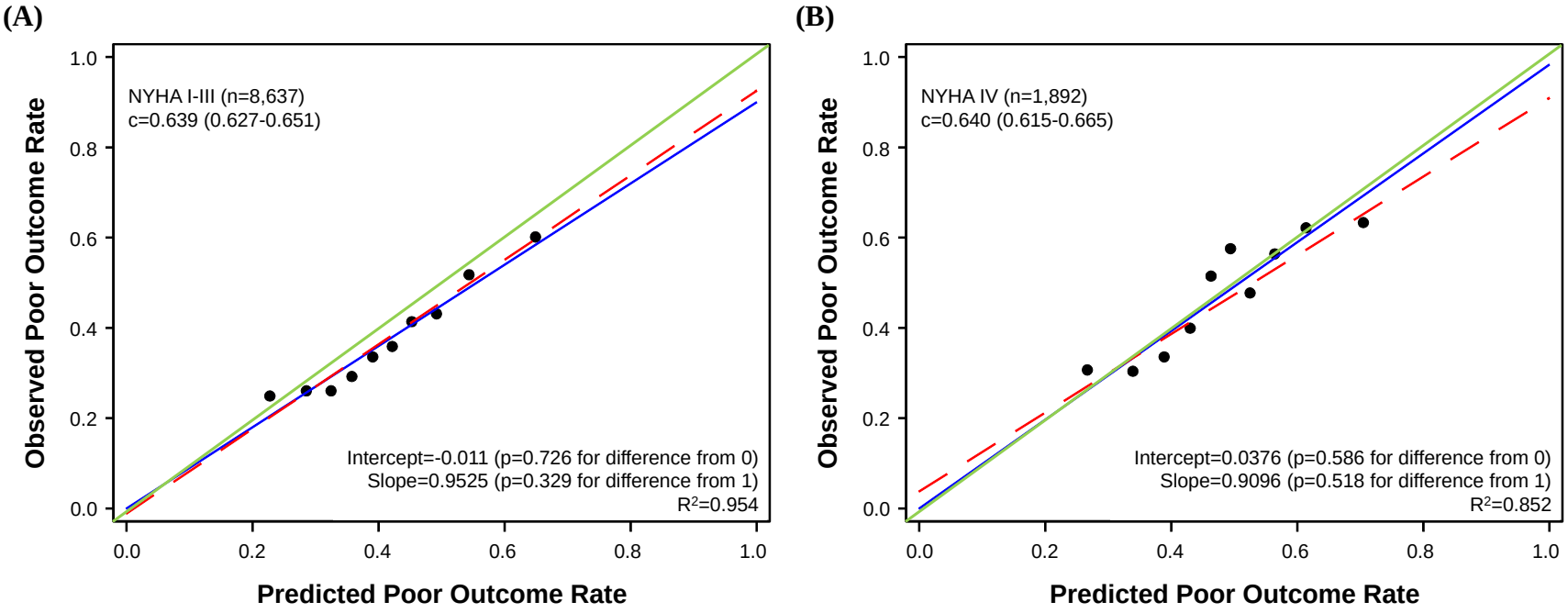
Supplemental Figure 4. Calibration of the Poor Outcome Risk Model. (A) Model in male patients. (B) Model in female patients.



Supplemental Figure 5. Calibration of the Poor Outcome Risk Model. (A) Model in patients with left ventricular ejection <35%. (B) Model in patients with left ventricular ejection ≥35%.

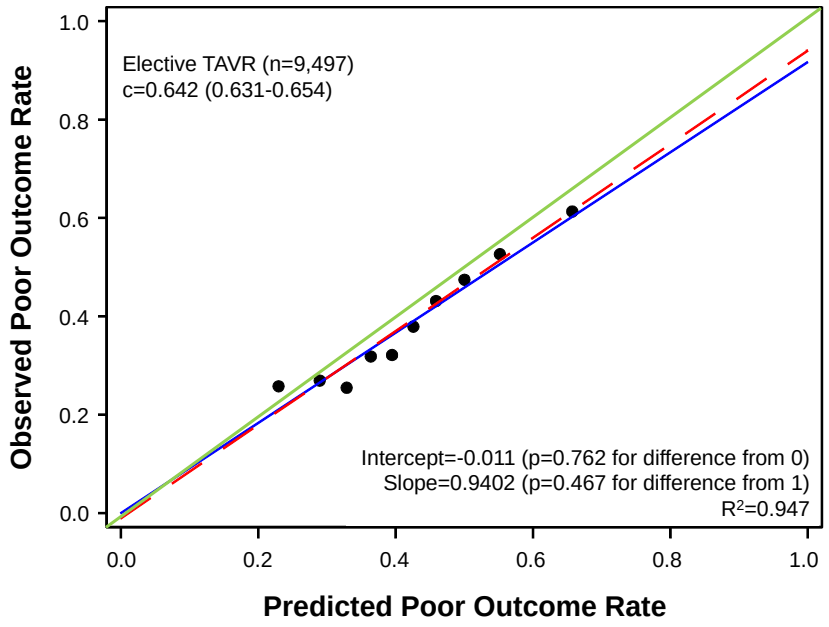


Supplemental Figure 6. Calibration of the Poor Outcome Risk Model. (A) Model in patients with NYHA I-III functional status. (B) Model in patients with NYHA IV functional status.

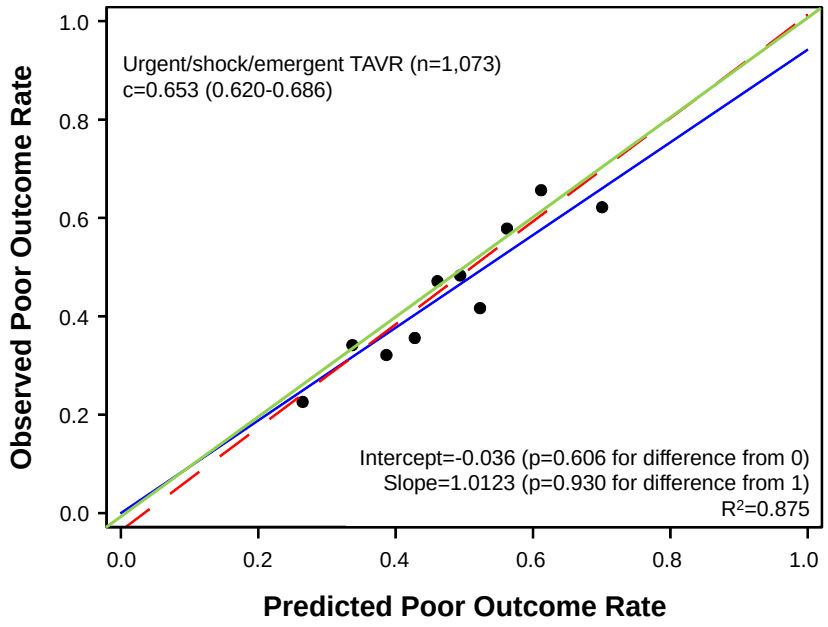


Supplemental Figure 7. Calibration of the Poor Outcome Risk Model. (A) Model in patients who underwent elective TAVR. (B) Model in patients who underwent TAVR with urgent/shock/emergent acuity.

(A)

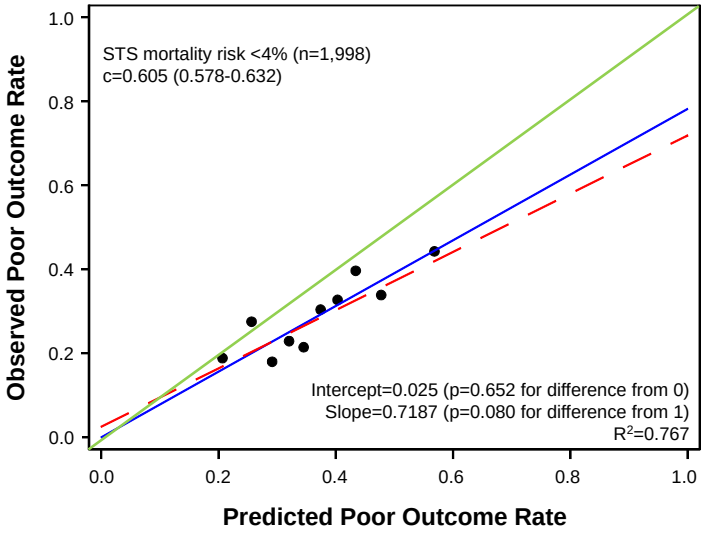


(B)

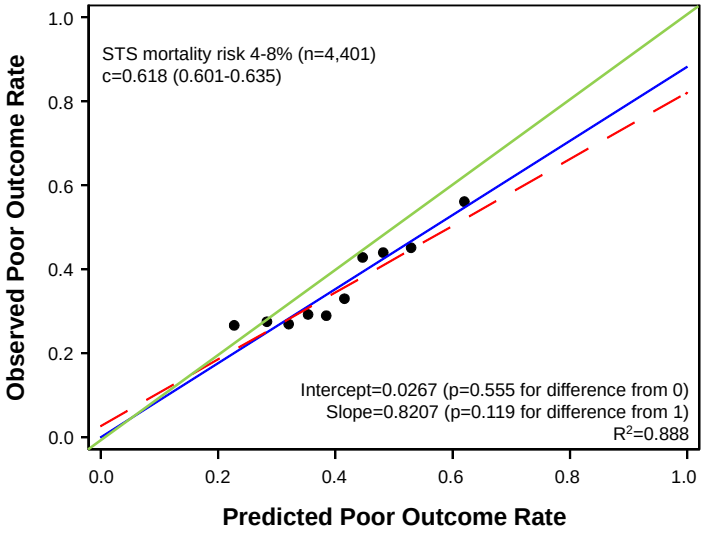


Supplemental Figure 8. Calibration of the Poor Outcome Risk Model. (A) Model in patients with STS mortality risk <4%. (B) Model in patients with STS mortality risk 4-8%. (C) Model in patients with STS mortality risk >8%.

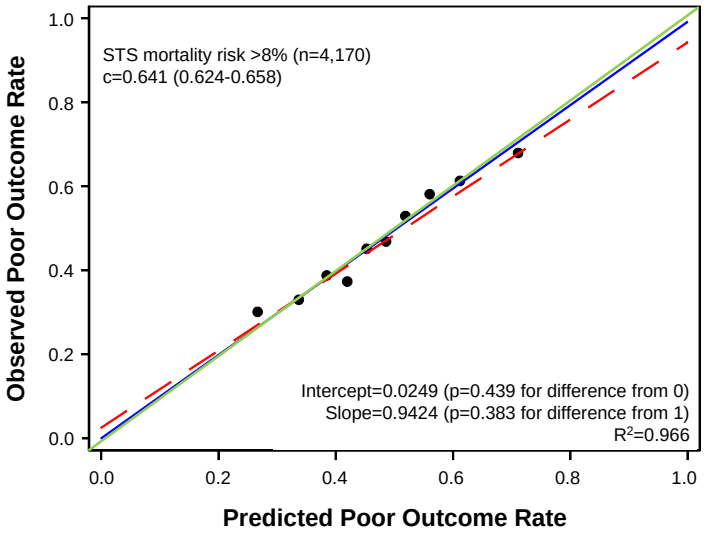
(A)



(B)



(C)



Supplemental Figure 9. Calibration of the Poor Outcome Risk Model in Patients Treated On/After January 1, 2014