

SUPPLEMENTAL MATERIAL

Supplemental Table 1. PARTNER Complication Definitions

Stroke (major)	Focal neurologic deficit lasting ≥ 24 hours or focal neurologic deficit lasting < 24 hours with imaging findings of acute infarction or hemorrhage Modified Rankin Scale of ≥ 2 at ≥ 30 days after the event
Stroke (minor)	Acute stroke with Modified Rankin Scale of 0-1 at ≥ 30 days
Myocardial infarction	(1) acute MI demonstrated by autopsy, (2) emergent PCI performed for acute ST-elevation MI, (3) administration of thrombolytics for acute MI, (4) peri-procedural MI (≤ 7 days post index procedure): new pathologic Q waves in ≥ 2 leads with elevation of CK-MB; or documented signs or symptoms of ischemia or new ischemic changes on ECG and CK-MB elevation $> 10 \times \text{ULN}$. (5) non-procedural MI (> 7 days): new pathologic Q waves in ≥ 2 contiguous leads with elevation of CK, CK-MB or troponin and signs or symptoms of myocardial ischemia; or elevation of CK $> 2 \times \text{ULN}$ with elevation of CK-MB or troponin and signs or symptoms of myocardial ischemia.
Vascular complication (major)	(1) any thoracic aortic dissection, (2) access site or access-related vascular injury (dissection, stenosis, perforation, rupture, arterio-venous fistula, pseudoaneurysm, hematoma, irreversible nerve injury, or compartment syndrome) leading to either death, need for significant blood transfusions (> 3 units), unplanned percutaneous or surgical intervention, or irreversible end-organ damage (e.g., hypogastric artery occlusion causing visceral ischemia or spinal artery injury causing neurologic impairment), (3) distal embolization

	(non-cerebral) from a vascular source requiring surgery or resulting in amputation or irreversible end-organ damage, or (4) left ventricular perforation.
Vascular complication (minor)	Vascular complication not meeting major criteria
Renal insufficiency	serum creatinine >3 mg/dL
Renal failure	need for renal replacement therapy
Major bleeding	Clear site of bleeding that met any one of the following criteria: (1) caused death, (2) prolonged hospitalization ≥ 24 hours due to treatment of bleeding, (3) required pericardiocentesis or procedure for repair or hemostasis, (4) caused permanent disability (e.g. blindness, paralysis, hearing loss), (5) required transfusion of >3 units of blood within 24 hour period
Arrhythmia	High-degree AV block, atrial fibrillation or flutter, or ventricular tachycardia
Permanent pacemaker	Arrhythmia requiring permanent pacemaker placement
Repeat TAVR	Implantation of new percutaneous aortic valve
Surgical AVR	Conversion to surgical aortic valve replacement

Supplemental Table 2. Baseline characteristics and rates of complications among patients with vs. without billing data

	Billing Available n=406	Billing Not Available n=113	P-value
Age	83.5 ± 7.1	83.2 ± 8.8	0.748
Female	46.8%	46.0%	0.883
Prior bypass surgery	40.4%	34.5%	0.257
Prior angioplasty	32.2%	27.4%	0.336
Peripheral vascular disease	41.8%	31.0%	0.038
Creatinine (mg/dL)	1.30 ± 0.47	1.29 ± 0.49	0.929
Renal disease (Cr ≥2)	16.7%	25.9%	0.028
Ejection fraction (%)	52.9 ± 13.7	53.0 ± 13.8	0.967
Ejection fraction <40%	16.0%	18.6%	0.515
Oxygen-dependent lung disease	11.8%	18.6%	0.061
Body mass index (kg/m ²)	27.6 ± 7.7	25.3 ± 5.2	0.003
Body mass index <20 kg/m ²	9.4%	12.4%	0.343
Diabetes mellitus	38.2%	40.7%	0.625
Arrhythmia	48.5%	46.9%	0.761
Hemoglobin (mg/dL)	11.7 ± 1.6	11.7 ± 1.6	0.815
Systolic blood pressure (mmHg)	127.6 ± 21.3	126.4 ± 24.3	0.601
Mini Mental State Exam Score	26.8 ± 3.4	26.6 ± 3.5	0.669
6MWT attempted	58.4%	52.2%	0.242
6MWT distance (m)	150.6 ± 106.0	180.4 ± 119.9	0.066
NYHA class			<0.001
2	4.7%	12.4%	
3	40.9%	55.8%	
4	54.4%	31.9%	
Mean aortic valve gradient	43.6 ± 14.8	43.2 ± 14.7	0.823
Aortic valve area	0.66 ± 0.20	0.61 ± 0.19	0.030
STS Risk Score	11.6 ± 4.1	11.6 ± 5.1	0.975
Cohort A	70.2%	52.2%	<0.001
Transfemoral approach	79.1%	85.0%	0.163
In-hospital complications			
Any complications	44.6%	64.6%	<0.001
Death	4.9%	5.3%	0.869
Major stroke	3.2%	3.5%	0.772
Minor stroke	1.2%	1.8%	0.649
Major vascular complication	11.6%	17.7%	0.086

Minor vascular complication	7.9%	10.6%	0.355
Major bleeding	9.9%	20.4%	0.002
Renal insufficiency	4.2%	7.1%	0.204
Renal failure	2.7%	3.5%	0.750
Arrhythmia	16.3%	21.2%	0.216
Permanent pacemaker	3.2%	6.2%	0.166
Repeat TAVR	0.5%	0.9%	0.522
Surgical AVR	1.7%	0.9%	1.000

Supplemental Table 3. Hospital costs attributable to specific complications of TAVR, within the TVT registry

Complication	Incremental Cost of Complication (\$)	Frequency in PARTNER	Frequency in TVT Registry	Attributable Cost (\$)
Death	\$42,008	5.01%	5.54%	\$2,327
Major stroke	\$16,272	3.28%	2.02%	\$329
Major bleeding	\$32,869	12.14%	3.46%	\$1,138
Renal failure	\$68,051	2.89%	1.88%	\$1,280
Arrhythmia	\$16,067	17.34%	5.97%	\$959
Repeat TAVR	\$119,905	0.58%	2.87%	\$3,437
Surgical AVR	\$26,070	1.54%	1.22%	\$318
Total cost of complications				\$9,787