

Supplementary Table 1: Diagnosis and Procedure Billing Codes

Variable	ICD 10	ICD 9
General Risk Factors	ICD 10	ICD 9
Smoking Status, n (%)	Z72.0, Z87.891, F17.200-F17.299	V15.82, 305.1
Homelessness, n (%)	Z59.0	V60.0
Cardiac Disease-related Risk Factors		
Diabetes Mellitus, n (%)	E08.00-E13.9	249.00-249.91, 250-250.03, 250.1-250.13, 250.2-250.23, 250.3-250.33, 250.4-250.43, 250.5-250.53, 250.6-250.63, 250.7-250.73, 250.8-250.83, 250.9,250.93
Peripheral Vascular Disease, n (%)	I73.00, I73.01, I73.1, I73.81, I73.89, I73.9	443.0, 443.1, 443.21, 443.22, 443.23, 443.24, 443.29, 443.81, 443.82, 443.89, 443.9
Cerebral Vascular disease, n (%)	I60-I69.998	430-438.9
Prior Stroke/Transient Ischemic Attack, n (%)	G45.0-G45.9	435.0-435.9, 437.7
COPD, n (%)	J41.0-J44.9, J45.20, J45.21, J45.22, J45.30, J45.31, J45.32, J45.40, J45.41, J45.42, J45.50, J45.51, J45.52, J45.901, J45.902, J45.909, J45.990, J45.991, J45.998, J47.0, J47.1, J47.9, J67.0, J67.1, J67.2, J67.3, J67.4, J67.5, J67.6, J67.7, J67.8, J67.9	490, 491.0, 491.1, 491.20, 491.21, 491.22, 491.8, 491.9, 492.0, 492.8, 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.20, 493.21, 493.22, 493.81, 493.82, 493.90, 493.91, 493.92, 494.0, 494.1, 495.0, 495.1, 495.2, 495.3, 495.4, 495.5, 495.6, 495.7, 495.8, 495.9, 496
Chronic Kidney Disease	-	-
Stage 1, n. (%)	N18.1	585.1
Stage 2, n. (%)	N18.2	585.2
Stage 3, n. (%)	N18.3	585.3
Stage 4, n. (%)	N18.4	585.4
Stage 5, n. (%)	N18.5	585.5
ESRD, n. (%)	N18.5	585.6
CKD with Dialysis, n (%)	Z99.2	V45.11

CKD without Dialysis, n (%)	N18.1 - N18.9	585.1-585.9
Coronary Artery Disease, n (%)	I25 - I25.9	414-414.9
Atrial Fibrillation/Flutter, n (%)	I48 - I48.4, I48.9 - I48.92	427.3 - 427.32
Previous MI, n (%)	I21.01, I21.02, I21.09, I21.11, I21.19, I21.21, I21.29, I21.3, I21.4, I21.9, I22.0, I22.1, I22.2, I22.8, I22.9, I21.A1, I21.A9, I25.2	410.00-410.92, 412
Congestive Heart Failure, n (%)	I50.20 - I50.23, I50.30 - I50.33, I50.40 - I50.43	428.0, 428.20 - 428.23, 428.30-428.33, 428.40 - 428.43
Prior Pacemaker/ICD, n (%)	Z98.61	V45.01, V45.02
Hyperlipidemia, n (%)	E78.49, E78.2, E78.5, E78.3, E78.1, E78.0, E78.4	272.0, 272.1, 272.2, 272.3, 272.4
Obesity, n (%)	E66-E66.9	278-278.3
BMI	Z68.1	< 19: V85.0
< 19.9	Z68.20 - Z68.29	V85.1
20-29	Z68.30 - Z68.39	V85.21-V85.25
30-39	Z68.41 - Z68.45	V85.30-V85.39
> 40.0		V85.41-V85.44
Dyspnea, n (%)	R06.00, R06.01, R06.02, R06.03, R06.09	786.09, 786.02, 786.05, 518.82, 770.89, 786.09
Obstructive sleep apnea, n (%)	G47.33	327.23
Hypertension, n (%)	I10, I11.0, I11.9, I12.0, I12.9, I13.0, I13.1, I13.10, I13.11, I13.2, I15, I15.0, I15.1, I15.2, I16, I16.0, I16.1, I16.9	401.0, 401.1, 401.9, 402.01, 402.11, 402.91, 402.00, 402.10, 402.90, 403.01, 403.11, 403.91, 403.00, 403.10, 403.90, 404.01, 404.11, 404.91, 404.00, 404.10, 404.90, 404.02, 404.12, 404.92, 404.03, 404.13, 404.93, 405.01, 405.11, 405.91, 405.91, 405.99, 405.09, 405.19, 405.99
Rheumatic Heart Disease, n (%)	I06.0, I06.2, I08.0, I08.2, I08.3, I335.0, I35.2, I06.1, I35.1	395.0, 395.2

Psychiatric Disease-related Risk Factors		
Alcohol abuse, n (%)	F1010, F1011, F10120, F10121, F10129, F1014, F10150, F10151, F10159, F10180, F10181, F10182, F10188, F1019, F1020, F1021, F10220, F10221, F10229, F10230, F10231, F10232, F10239, F1024, F10250, F10251, F10259, F1026, F1027, F10280, F10281, F10282, F10288, F1029, F10921, F1094, F10950, F10951, F10959, F1096, F1097, F10980, F10981, F10982, F10988, F1099	2910-2913, 2915, 2918, 29181, 29182, 29189, 2919, 30300-30393, 30500-30503
Opioid abuse, n (%)	F11.20, F11.21, F11.22, Z79.891, Z79.899	304.01- 304.03, 305.50-305.53
Family history of other mental health and behavioral disorders, n (%)	Z81.8	V17.0
Suicide ideation, n (%)	R45.851	V62.84
Suicide attempt, n (%)	T14.91	E950-E959
Intracranial injury, n (%)	S09.90, S06	959.01, 854
Age-related physical debility, n (%)	R54	797
Frailty (mental), n (%)	R41.81	797
Abnormal EEG, n (%)	R94.01	794.02
Autoimmune disease, n (%)	D89.9	273.279
Acquired coagulation factor deficiency, n (%)	D68.4	286.7
Abnormal leukocyte count, n (%)	D72.829	288.6
Other Psychiatric Disease-related Diagnoses		
PTSD n, (%)	F43.1, F43.10-F43.12	309.81
PTSD-related (adjustment disorder and stress) n, (%)	F43.21, F43.22, F43.23, F43.25, F43.29, F43.0, F43.8, F43.9	309.28
Depression n, %	F320, F321, F322, F323, F328, F3281, F3289, F329, F330, F331, F332, F333, F338, F339, F341, F4321	296.21, 296.22, 296.23, 296.24, 298.0, 298.82, 625.4, 262.20, 311, 296.31, 296.32, 296.33, 296.34, 296.99, 296.30, 300.4, 301.12, 309.0, 309.1

Generalized Anxiety Disorder, n (%)	F41.1	300.00, 300.01, 300.09, 300.21-300.23, 300.29, 300.3, 309.81
Alcohol-induced mental disorders	F10.159	291.0-291.3, 291.5, 291.8, 291.81, 291.89, 291.9
Obsessive-Compulsive Disorder, n (%)	F60.5, F63.3, F63.9, F98.8	300.3
Bipolar Disorder, n (%)	F31.9, F31.0, F31.1, F31.11, F31.12, F31.13, F31.30, F31.31	296.7
Schizophrenia, n (%)	F41.0, F41.1, F41.3, F41.8, F41.9	295, 295.01, 295.02, 295.03, 295.04, 295.05, 295.10, 295.11, 295.12, 295.13, 295.14, 295.15, 295.2, 295.21, 295.22, 295.23, 295.24, 295.25, 295.3, 295.31, 295.32, 295.33, 295.34, 295.35, 295.40, 295.41, 295.42, 295.43, 295.44, 295.45, 295.5, 295.51, 295.52, 295.53, 295.54, 295.55, 295.60, 295.61, 295.62, 295.63, 295.64, 295.65, 295.7, 295.71, 295.72, 295.73, 295.74, 295.75, 295.8, 295.81, 295.82, 295.83, 295.84, 295.85, 295.90, 295.91, 295.92, 295.93, 295.94, 295.95
Mild cognitive impairment, n (%)	G31.84	331.83
Dementia, n (%)	F03.90	294.2
Complications		
Ventilator Status, n (%)	Z99.11 (dependence on respirator [ventilator] status)	V46.11
Bleeding/Vascular Complications, n (%)	I97.610, I97.611, I97.618	998.11
Post-Procedural Pacemaker placement, n (%)	0JH60PZ, 0JH63PZ, 0JH80PZ, 0JH83PZ, 0JH604Z, 0JH605Z, 0JH606Z, 0JH634Z, 0JH635Z, 0JH636Z, 0JH804Z, 0JH834Z, 0JH605Z, 0JH635Z, 0JH805Z, 0JH835Z, 0JH606Z, 0JH636Z, 0JH806Z, 0JH836Z	37.80, 37.81, 37.82, 37.83
Prosthetic valve endocarditis, n (%)	B37.6, I33.0, I33.9, A52.03, M32.11, I0.01, I38, I39, I09.1, A32.82, A39.51, B33.21, I35.8, A18.84, A54.83	391.1, 112.81, 421.0, 421.1, 421.9, 093.20-093.24, 424.91, 424.90, 397.9, 036.42, 074.22, 098.84,
Aortic insufficiency, n (%)	I97.11, I97.110, I97.111	429.4, 997.1
Patient medical non-compliance, n (%)	Z91.19	V15.81
Acute embolism and thrombosis, n (%)	I82.409	453.4
Pneumonia, n (%)	J18.9	486

Liver disease, n (%)	K76.9	573.9
Acute psychosis, n (%)	F23	298.9
Delirium due to other conditions, n (%)	F05	293
Cardiac Valvular Disease Rates		
Aortic Stenosis Diagnosis	I35.0, I35.2	395
Aortic Regurgitation Diagnosis	I35.1	396.3

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Supplementary Table 2: Final Model Details for AVR Predictions of New-Onset POAF Endpoint

Obs	LABEL	variable	levels	OR	ProbChiSq
2	Mental illness	_Mental_1	1_Yes vs 2_No	0.98 (0.92 - 1.05)	0.5746
3	Age	age		1.04 (1.04 - 1.04)	<.0001
4	surg_type	surg_type	SAVR vs TAVR	2.16 (2.05 - 2.28)	<.0001
5	Type of admission	admtp1	Elective vs Urgent	0.89 (0.84 - 0.95)	<.0001
6	Gender	Sex	F vs M	0.79 (0.75 - 0.82)	<.0001
7	Race	race2	Black vs Other	0.63 (0.57 - 0.71)	<.0001
8	Ethnicity	ethnic2	Hispanic vs Other\unknown	0.84 (0.75 - 0.93)	0.0009
9	Insurance	insurer5	Commercial vs Medicaid\Medicare\Other	0.90 (0.85 - 0.95)	0.0002
10	Opioid abuse	Psych_RF2	1_Yes vs 2_No	0.86 (0.75 - 0.99)	0.0388
11	Tobacco/Smoking	RF_SMOKE	1_Yes vs 2_No	0.94 (0.9 - 0.99)	0.0103
12	Coronary Artery Disease	RF_CAD	1_Yes vs 2_No	0.96 (0.92 - 1.01)	0.1189
13	Stroke	RF_STROKE	1_Yes vs 2_No	1.24 (1.1 - 1.4)	0.0003
14	Cerebral Vascular Disease	RF_CVD	1_Yes vs 2_No	1.03 (0.94 - 1.13)	0.5485
15	Bicuspid Aortic Valve	RF_BAV	1_Yes vs 2_No	0.83 (0.75 - 0.93)	0.0006
16	Abdominal Aortic Aneurysm	RF_AAA	1_Yes vs 2_No	1.20 (1.04 - 1.39)	0.0129
17	Non rheumatic aortic stenosis	RF_NRAS	1_Yes vs 2_No	0.64 (0.58 - 0.7)	<.0001
18	Rheumatic Heart Disease	RF_RHD	1_Yes vs 2_No	1.06 (0.94 - 1.19)	0.3346
19	Obstructive Sleep Apnea	RF_OSA	1_Yes vs 2_No	1.34 (1.23 - 1.45)	<.0001
20	Rheumatoid arthritis/collagen vascular diseases	RF_RACVD	1_Yes vs 2_No	0.91 (0.8 - 1.04)	0.1539
21	Pulmonary Hypertension (Edwards Paper)	RF_PHEP	1_Yes vs 2_No	1.51 (1.42 - 1.61)	<.0001
22	Intra-aortic Balloon Pump	RF_IABP	1_Yes vs 2_No	1.08 (0.88 - 1.32)	0.4715
23	Elixhauser Mortality Index	ElixhauserM		1.02 (1.01 - 1.02)	<.0001

The c-index of this model was 0.658 and the Hosmer and Lemeshow Goodness-of-Fit Test p-value was 0.0001.

Supplementary Table 3: Final Model Details for AVR Predictions of 30-Day Readmission Endpoint

Obs	LABEL	variable	levels	OR	ProbChISq
2	Mental illness	_Mental_1	1_Yes vs 2_No	1.06 (0.98 - 1.15)	0.1632
3	Age	age		1.01 (1.01 - 1.02)	<.0001
4	surg_type	surg_type	SAVR vs TAVR	2.26 (2.1 - 2.42)	<.0001
5	Type of admission	admtp1	Elective vs Urgent	0.93 (0.86 - 0.99)	0.0313
6	Gender	Sex	F vs M	1.15 (1.09 - 1.22)	<.0001
7	Race	race2	Black vs Other	1.14 (1.01 - 1.3)	0.0402
8	Insurance	insurer5	Commercial vs Medicaid/Medicare/Other	0.85 (0.79 - 0.91)	<.0001
9	Alcohol abuse	Psych_RF1	1_Yes vs 2_No	0.59 (0.43 - 0.81)	0.0012
10	Opioid abuse	Psych_RF2	1_Yes vs 2_No	0.96 (0.79 - 1.16)	0.6604
11	Tobacco/Smoking	RF_SMOKE	1_Yes vs 2_No	0.87 (0.82 - 0.93)	<.0001
12	Stroke	RF_STROKE	1_Yes vs 2_No	1.44 (1.32 - 1.58)	<.0001
13	Peripheral Vascular Disease	RF_PVD	1_Yes vs 2_No	1.09 (0.99 - 1.21)	0.0948
14	MI	RF_MI	1_Yes vs 2_No	1.13 (1.03 - 1.24)	0.0077
15	Bicuspid Aortic Valve	RF_BAV	1_Yes vs 2_No	0.73 (0.63 - 0.84)	<.0001
16	Abdominal Aortic Aneurysm	RF_AAA	1_Yes vs 2_No	1.37 (1.15 - 1.63)	0.0003
17	Non rheumatic aortic stenosis	RF_NRAS	1_Yes vs 2_No	0.87 (0.77 - 0.98)	0.0188
18	Rheumatic Heart Disease	RF_RHD	1_Yes vs 2_No	0.96 (0.83 - 1.11)	0.6118
19	Leukemia	RF_LEUKEMIA	1_Yes vs 2_No	1.55 (1.15 - 2.08)	0.0037
20	Pulmonary Hypertension (Edwards Paper)	RF_PHEP	1_Yes vs 2_No	0.99 (0.91 - 1.07)	0.7686
21	Intra-aortic Balloon Pump	RF_IABP	1_Yes vs 2_No	0.94 (0.74 - 1.2)	0.6264
22	Elixhauser Readmission Index	ElixhauserR		1.02 (1.02 - 1.02)	<.0001

The c-index of this model was 0.633 and the Hosmer and Lemeshow Goodness-of-Fit Test p-value was 0.7041.

Supplementary Table 4: Final Model Details for AVR Predictions of Mortality/Morbidity Composite (MM) Endpoint

Obs	LABEL	variable	levels	OR	ProbChiSq
2	Mental illness	_Mental_1	1_Yes vs 2_No	1.01 (0.91 - 1.12)	0.8478
3	Age	age		1.02 (1.01 - 1.02)	<.0001
4	surg_type	surg_type	SAVR vs TAVR	1.63 (1.51 - 1.76)	<.0001
5	Type of admission	admtpt1	Elective vs Urgent	0.64 (0.59 - 0.69)	<.0001
6	Race	race2	Black vs Other	1.16 (1 - 1.35)	0.0428
7	Insurance	insurer5	Commercial vs Medicaid/Medicare/Other	0.89 (0.81 - 0.97)	0.0074
8	Opioid abuse	Psych_RF2	1_Yes vs 2_No	0.89 (0.71 - 1.12)	0.3375
9	Suicide ideation	Psych_RF4	1_Yes vs 2_No	5.06 (1.34 - 19.11)	0.0168
10	Tobacco/Smoking	RF_SMOKE	1_Yes vs 2_No	0.73 (0.68 - 0.78)	<.0001
11	Stroke	RF_STROKE	1_Yes vs 2_No	1.96 (1.78 - 2.15)	<.0001
12	Peripheral Vascular Disease	RF_PVD	1_Yes vs 2_No	0.86 (0.76 - 0.96)	0.0105
13	MI	RF_MI	1_Yes vs 2_No	1.05 (0.94 - 1.16)	0.3827
14	Bicuspid Aortic Valve	RF_BAV	1_Yes vs 2_No	0.74 (0.62 - 0.89)	0.0011
15	Abdominal Aortic Aneurysm	RF_AAA	1_Yes vs 2_No	0.72 (0.56 - 0.91)	0.0060
16	Non rheumatic aortic stenosis	RF_NRAS	1_Yes vs 2_No	0.81 (0.71 - 0.92)	0.0012
17	Rheumatic Heart Disease	RF_RHD	1_Yes vs 2_No	1.07 (0.91 - 1.26)	0.4142
18	Obstructive Sleep Apnea	RF_OSA	1_Yes vs 2_No	1.38 (1.22 - 1.55)	<.0001
19	Leukemia	RF_LEUKEMIA	1_Yes vs 2_No	1.60 (1.15 - 2.22)	0.0050
20	Pulmonary Hypertension (Edwards Paper)	RF_PHEP	1_Yes vs 2_No	0.95 (0.87 - 1.04)	0.2489
21	Hypothyroidism (Udesh Paper)	RF_HYPHTDSM	1_Yes vs 2_No	0.88 (0.81 - 0.97)	0.0084
22	Intra-aortic Balloon Pump	RF_IABP	1_Yes vs 2_No	6.64 (5.36 - 8.22)	<.0001
23	Elixhauser Mortality Index	ElixhauserM		1.06 (1.06 - 1.07)	<.0001

The c-index of this model was 0.733 and the Hosmer and Lemeshow Goodness-of-Fit Test p-value was 0.0117.

Supplementary Table 5: Final Model Details for r-AVR Predictions of New-Onset POAF Endpoint

Obs	LABEL	variable	levels	OR	ProbChiSq
2	Mental illness	_Mental_1	1_Yes vs 2_No	1.33 (0.58 - 3.07)	0.4973
3	Age	age		1.03 (1 - 1.06)	0.0869
4	Ethnicity	ethnic2	Hispanic vs Other\unknown	0.19 (0.02 - 1.5)	0.1144
5	Insurance	insurer5	Commercial vs Medicaid\Medicare\Other	0.52 (0.22 - 1.24)	0.1379
6	Carotid Disease	RF_CD	1_Yes vs 2_No	6.08 (0.76 - 48.74)	0.0893
7	Hyperlipidemia	RF_HYPLIP	1_Yes vs 2_No	1.58 (0.76 - 3.28)	0.2173

The c-index of this model was 0.729 and the Hosmer and Lemeshow Goodness-of-Fit Test p-value was 0.0282.

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Supplementary Table 6: Final Model Details for r-AVR Predictions of 30-Day Readmission Endpoint

Obs	LABEL	variable	levels	OR	ProbChiSq
2	Mental illness	_Mental_1	1_Yes vs 2_No	0.66 (0.21 - 2.12)	0.4860
3	Ethnicity	ethnic2	Hispanic vs Other\unknown	2.04 (0.63 - 6.57)	0.2315
4	Tobacco/Smoking	RF_SMOKE	1_Yes vs 2_No	0.51 (0.2 - 1.27)	0.1469
5	Cerebral Vascular Disease	RF_CVD	1_Yes vs 2_No	3.36 (1.41 - 8.02)	0.0063

The c-index of this model was 0.645 and the Hosmer and Lemeshow Goodness-of-Fit Test p-value was 0.1790.

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Supplementary Table 7: Final Model Details for r-AVR Predictions of the Mortality/Morbidity Composite (MM) Endpoint

Obs	LABEL	variable	levels	OR	ProbChiSq
2	Mental illness	_Mental_1	1_Yes vs 2_No	0.59 (0.22 - 1.58)	0.2950
3	Race	race2	Black vs Other	4.66 (1.77 - 12.23)	0.0018
4	Ethnicity	ethnic2	Hispanic vs Other\unknown	2.66 (0.9 - 7.88)	0.0782
5	Insurance	insurer5	Commercial vs Medicaid\Medicare\Other	0.49 (0.23 - 1.04)	0.0617
6	Cerebral Vascular Disease	RF_CVD	1_Yes vs 2_No	2.40 (1.06 - 5.43)	0.0360

The c-index of this model was 0.706 and the Hosmer and Lemeshow Goodness-of-Fit Test p-value was 0.7659.

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Supplementary Table 8: First-Time SAVR and TAVR Patients' Characteristics with and without a New-onset Postoperative Atrial Fibrillation Complication

Variable	Level	Total (N=36,947)	New POAF		P-value
			Yes (N=15,971)	No (N=20,976)	
Primary factors					
Mental Illness		13.18%	12.23%	13.89%	<.0001
Surgery type	SAVR	62.22%	65.15%	59.99%	<.0001
	TAVR	37.78%	34.85%	40.01%	
Type of admission	Elective	82.23%	80.44%	83.60%	<.0001
	Urgent	17.77%	19.56%	16.40%	
Patients' characteristics					
Gender	Female	44.86%	42.87%	46.38%	<.0001
	Male	55.14%	57.13%	53.62%	
Age		74.09 ± 12.82	76.38±10.75	72.35±13.94	<.0001
Race	Black	4.39%	3.27%	5.23%	<.0001
	Other	95.61%	96.73%	94.77%	
Ethnicity	Hispanic	4.60%	3.89%	5.13%	<.0001
	Other and unknown	95.40%	96.11%	94.87%	
Insurance	Commercial	26.94%	21.90%	30.77%	<.0001
	Medicaid, Medicare, and Other	73.06%	78.10%	69.23%	
Psychiatric disease-related risk factors					
Alcohol Abuse		1.03%	1.00%	1.06%	0.5946
Opioid abuse		2.45%	2.05%	2.75%	<.0001
Family History		0.04%	0.03%	0.05%	0.4391
Suicide Ideation		0.03%	0.04%	0.01%	0.1110
Suicide attempt		0.00%	0.00%	0.00%	.
Intracranial Injury		0.01%	0.00%	0.02%	0.0757
Age-Related Physical Disability		1.79%	1.91%	1.69%	0.1182
Frailty (mental)		0.31%	0.34%	0.28%	0.2419
Abnormal EEG		0.00%	0.00%	0.00%	.
Autoimmune Disorder		0.04%	0.03%	0.05%	0.4391
Acquired coagulation factor deficiency		0.15%	0.16%	0.15%	0.7158
Abnormal leukocyte count		1.22%	1.28%	1.16%	0.2956
Risk factors					
Tobacco/Smoking		34.57%	33.35%	35.50%	<.0001
Hypertension		78.15%	79.53%	77.10%	<.0001
Congestive Heart Failure		20.38%	21.43%	19.58%	<.0001
Cardiomyopathy		6.21%	7.07%	5.56%	<.0001
Diabetes Mellitus		2.25%	2.15%	2.32%	0.2634
Coronary Artery Disease		48.49%	50.00%	47.34%	<.0001
Chronic Lung Disease		23.31%	24.44%	22.44%	<.0001
Chronic Obstructive Pulmonary Disease		7.99%	8.22%	7.82%	0.1574
History of Stroke		6.86%	7.86%	6.09%	<.0001
Stroke		8.59%	9.93%	7.57%	<.0001
Carotid Disease		3.96%	4.05%	3.89%	0.4183
Carotid Stenosis		3.83%	3.87%	3.80%	0.7286

		New POAF			
Variable	Level	Total (N=36,947)	Yes (N=15,971)	No (N=20,976)	P-value
Cerebral Vascular Disease		13.92%	15.51%	12.71	<.0001
Peripheral Vascular Disease		7.53%	7.72%	7.39%	0.2326
History of Myocardial Infarction		8.38%	8.61%	8.21%	0.1693
Myocardial Infarction		9.80%	10.11%	9.57%	0.0850
Permanent Pacemaker or Implantable Cardiac Defibrillator (PPM/ICD)		7.86%	10.74%	5.66%	<.0001
Bicuspid Aortic Valve		5.42%	3.98%	6.52%	<.0001
Syncope		0.93%	0.85%	0.99%	0.1463
Dyspnea		1.59%	1.54%	1.63%	0.4928
Chest Pain		1.95%	1.97%	1.94%	0.8001
Dialysis		519 (1.40%)	219 (1.37%)	300 (1.43%)	0.6333
Hyperlipidemia		22363 (60.53%)	9617 (60.22%)	12746 (60.76%)	0.2846
Elevated Lipoprotein		0.00%	0.00%	0.00%	.
Presence of Prosthetic Heart valve		0.00%	0.00%	0.00%	.
Abdominal Aortic Aneurysm		815 (2.21%)	388 (2.43%)	427 (2.04%)	0.0107
Aortic Valve Disorders		100.00%	100.00%	100.00%	.
Non rheumatic aortic stenosis		92.08%	90.49%	93.28%	<.0001
Rheumatic Heart Disease		5.01%	5.92%	4.32%	<.0001
Obstructive Sleep Apnea		7.47%	8.07%	7.01%	<.0001
Leukemia		0.71%	0.67%	0.73%	0.4654
Lymphoma		0.80%	0.76%	0.83%	0.4129
Chronic Kidney Disease (CKD)	Stage 1	0.06%	0.09%	0.04%	<.0001
	Stage 2	0.99%	0.99%	1.00%	
	Stage 3	8.39%	9.33%	7.67%	
	Stage 4	61.86%	1.98%	1.77%	
	Stage 5	0.15%	0.16%	0.14%	
	ESRD	2.33%	2.33%	2.34%	
Chronic Kidney Disease with Dialysis		1.40%	1.37%	1.43%	0.6333
Chronic Kidney Disease without dialysis		19.70%	21.46%	18.36%	<.0001
Obesity		15.64%	15.53%	15.71%	0.6392
Anemia (iron deficiency)		12.13%	12.54%	11.82%	0.0378
Rheumatoid arthritis/collagen vascular diseases		2.91%	2.72%	3.07%	0.0489
Fluid and Electrolyte Disorders		0.43%	0.61%	0.29%	<.0001
Pulmonary Hypertension		14.32%	18.04%	11.48%	<.0001
Platelet count (thrombocytopenia)		19.97%	22.34%	18.17%	<.0001
Previous internal cardioverter-defibrillator		1.53%	2.05%	1.14%	<.0001
Cerebral occlusion		0.02%	0.03%	0.00%	0.0893
Hypothyroidism		15.12%	15.35%	14.96%	0.2983
Intra-aortic Balloon Pump		1.13%	1.37%	0.94%	<.0001
Elixhauser Comorbidity					
Elixhauser Readmission Index		19.88±15.09	21.51±15.03	18.64±15.02	<.0001
Elixhauser Mortality Index		10.74±10.47	12.31±10.73	9.55±10.11	<.0001
Congestive heart failure		48.29%	53.44%	44.36%	<.0001
Valvular disease		37.85%	36.70%	38.73%	<.0001
Pulmonary circulation disease		8.98%	11.45%	7.09%	<.0001
Peripheral vascular disease		15.13%	15.69%	14.70%	0.0086

		New POAF			
Variable	Level	Total (N=36,947)	Yes (N=15,971)	No (N=20,976)	P-value
Hypertension (uncomplicated/complicated)		78.08%	79.44%	77.04%	<.0001
Paralysis		1.68%	1.88%	1.53%	0.0089
Neurodegenerative disorders		4.85%	4.91%	4.81%	0.6467
Chronic pulmonary disease		23.59%	24.73%	22.72%	<.0001
Diabetes (uncomplicated)		20.84%	20.66%	20.97%	0.4686
Diabetes (complicated)		8.15%	7.86%	8.36%	0.0832
Solid tumor without metastasis		1.67%	1.67%	1.67%	0.9819
Metastatic cancer		0.34%	0.32%	0.35%	0.5833
Hypothyroidism		15.42%	15.61%	15.28%	0.3840
Renal failure		18.78%	20.49%	17.48%	<.0001
Liver disease		2.05%	1.94%	2.14%	0.1804
Peptic ulcer Disease, excluding bleeding		0.87%	0.85%	0.88%	0.7550
AIDS/HIV		0.00%	0.00%	0.00%	1.0000
Lymphoma		1.11%	1.06%	1.14%	0.4338
Rheumatoid arthritis/collagen vascular diseases		3.63%	3.31%	3.88%	0.0037
Coagulopathy		21.67%	24.33%	19.64%	<.0001
Obesity		16.05%	16.01%	16.08%	0.8656
Weight loss		3.70%	4.68%	2.95%	<.0001
Fluid and electrolyte disorders		25.62%	(29.08%	22.98%	<.0001
Blood loss anemia		0.60%	0.54%	0.65%	0.1758
Deficiency Anemia		14.31%	14.73%	13.99%	0.0426
Alcohol abuse		1.66%	1.72%	1.62%	0.4805
Drug abuse		0.89%	0.68%	1.05%	0.0001
Psychoses		0.85%	0.72%	0.95%	0.0156
Depression		7.03%	6.57%	7.38%	0.0024

1: For continuous variables, the mean +/- std were reported.
2: For categorical variables, P-values were based on chi-squared test with exact p-value from Monte Carlo simulation.
3: For continuous variables, P-values were based on Welch's t-test.

Definitions: SAVR (Surgical Aortic Valve Replacement), TAVR (Transcatheter Aortic Valve Replacement), EEG (Electroencephalogram), PPM (Permanent Pacemaker), ICD (Implantable cardioverter-defibrillator), AIDS (Acquired immunodeficiency syndrome), HIV (Human immunodeficiency virus)

Supplementary Table 9: First-Time SAVR and TAVR Patients' characteristics with and without a 30-day Readmission

Variable	Level	Total (N=36,947)	30-Day Readmission		P-value
			Yes (N=15,971)	No (N=20,976)	
Primary factors					
Mental Illness		13.18%	14.00%	13.01%	0.0336
Surgery type	SAVR	62.22%	69.48%	60.72%	<.0001
	TAVR	37.78%	30.52%	39.28%	
Type of admission	Elective	82.23%	79.49%	82.80%	<.0001
	Urgent	17.77%	20.51%	17.20%	
Patients' characteristics					
Gender	Female	44.86%	3070 (48.45%)	13505 (44.12%)	<.0001
	Male	55.14%	3267 (51.55%)	17105 (55.88%)	
Age		74.09 ± 12.82	75.25±12.13	73.85±12.94	<.0001
Race	Black	4.39%	331 (5.22%)	1290 (4.21%)	0.0004
	Other	95.61%	6006 (94.78%)	29320 (95.79%)	
Ethnicity	Hispanic	4.60%	267 (4.21%)	1432 (4.68%)	0.1078
	Other and unknown	95.40%	6070 (95.79%)	29178 (95.32%)	
Insurance	Commercial	26.94%	1411 (22.27%)	8541 (27.90%)	<.0001
	Medicaid, Medicare, and Other	73.06%	4926 (77.73%)	22069 (72.10%)	
Psychiatric disease-related risk factors					
Alcohol Abuse		1.03%	44 (0.69%)	338 (1.10%)	0.0033
Opioid abuse		2.45%	136 (2.15%)	768 (2.51%)	0.0888
Family History		0.04%	1 (0.02%)	14 (0.05%)	0.3389
Suicide Ideation		0.03%	3 (0.05%)	7 (0.02%)	0.3977
Suicide attempt		0.00%	0.00%	0.00%	.
Intracranial Injury		0.01%	1 (0.02%)	4 (0.01%)	1.0000
Age-Related Physical Disability		1.79%	101 (1.59%)	559 (1.83%)	0.2036
Frailty (mental)		0.31%	0.35%	0.30%	0.5128
Abnormal EEG		0.00%	0.00%	0.00%	.
Autoimmune Disorder		0.04%	0.05%	0.04%	1.0000
Acquired coagulation factor deficiency		0.15%	0.17%	0.15%	0.6670
Abnormal leukocyte count		1.22%	1.09%	1.24%	0.3130
Risk factors					
Tobacco/Smoking		34.57%	31.17%	35.28%	<.0001
Hypertension		78.15%	77.80%	78.22%	0.4554
Congestive Heart Failure		20.38%	19.24%	20.61%	0.0132
Cardiomyopathy		6.21%	7.04%	6.04%	0.0028
Diabetes Mellitus		2.25%	3.65%	1.96%	<.0001
Coronary Artery Disease		48.49%	48.86%	48.42%	0.5263
Chronic Lung Disease		23.31%	26.61%	22.62%	<.0001
Chronic Obstructive Pulmonary Disease		7.99%	7.62%	8.07%	0.2320
History of Stroke		6.86%	7.26%	6.77%	0.1629
Stroke		8.59%	11.28%	8.03%	<.0001
Carotid Disease		3.96%	4.28%	3.89%	0.1518
Carotid Stenosis		3.83%	4.04%	3.79%	0.3387
Cerebral Vascular Disease		13.92%	17.03%	13.28%	<.0001

		30-Day Readmission			
Variable	Level	Total (N=36,947)	Yes (N=15,971)	No (N=20,976)	P-value
Peripheral Vascular Disease		7.53%	8.55%	7.32%	0.0007
History of Myocardial Infarction		8.38%	9.01%	8.25%	0.0474
Myocardial Infarction		9.80%	10.86%	9.58%	0.0019
Permanent Pacemaker or Implantable Cardiac Defibrillator (PPM/ICD)		7.86%	8.19%	7.79 %	0.2794
Bicuspid Aortic Valve		5.42%	3.65%	5.79%	<.0001
Syncope		0.93%	0.76%	0.96%	0.1191
Dyspnea		1.59%	1.29%	1.65%	0.0376
Chest Pain		1.95%	2.13%	1.91%	0.2580
Dialysis		1.40%	2.04%	1.27%	<.0001
Hyperlipidemia		60.53%	57.17%	61.22%	<.0001
Elevated Lipoprotein		0.00%	0.00%	0.00%	.
Presence of Prosthetic Heart valve		0.00%	0.00%	0.00%	.
Abdominal Aortic Aneurysm		2.21%	2.81%	2.08%	0.0003
Aortic Valve Disorders		100.00%	100.00%	100.00%	.
Non rheumatic aortic stenosis		92.08%	90.69%	93.36%	<.0001
Rheumatic Heart Disease		5.01%	5.46%	4.92%	0.0711
Obstructive Sleep Apnea		7.47%	7.46%	7.47%	0.9911
Leukemia		0.71%	0.96%	0.65%	0.0075
Lymphoma		0.80%	0.85%	0.79%	0.6169
Chronic Kidney Disease	Stage 1	0.06%	0.09%	0.07%	<.0001
	Stage 2	0.99%	0.99%	0.99%	
	Stage 3	8.39%	9.23%	8.21%	
	Stage 4	61.86%	2.46%	1.74%	
	Stage 5	0.15%	0.27%	0.12%	
	ESRD	2.33%	3.63%	2.06%	
Chronic Kidney Disease with Dialysis		1.40%	2.04%	1.27%	<.0001
Chronic Kidney Disease without dialysis		19.70%	23.78%	18.86%	<.0001
Obesity		15.64%	15.43%	15.68%	0.6254
Anemia (iron deficiency)		12.13%	13.44%	11.86%	0.0004
Rheumatoid arthritis/collagen vascular diseases		2.91%	3.36%	2.82%	0.0203
Fluid and Electrolyte Disorders		0.43%	0.85%	0.34%	<.0001
Pulmonary Hypertension		14.32%	16.04%	13.96%	<.0001
Platelet count (thrombocytopenia)		19.97%	21.27%	19.70%	0.0045
Previous internal cardioverter-defibrillator		1.53%	1.51%	1.54%	0.8884
Cerebral occlusion		0.02%	0.03%	0.00%	0.0098
Hypothyroidism		15.12%	15.35%	14.96%	0.7413
Intra-aortic Balloon Pump		1.13%	1.37%	0.94%	0.0586
Elixhauser Comorbidity					
Elixhauser Readmission Index		19.88±15.09	22.97±15.69	19.24±14.88	<.0001
Congestive heart failure		48.29%	52.66%	47.38%	<.0001
Valvular disease		37.85%	31.97%	39.07%	<.0001
Pulmonary circulation disease		8.98%	11.16%	8.52%	<.0001
Peripheral vascular disease		15.13%	16.59%	14.83%	0.0004
Hypertension (uncomplicated/complicated)		78.08%	77.72%	78.15%	0.4485

Variable	Level	Total (N=36,947)	30-Day Readmission		P-value
			Yes (N=15,971)	No (N=20,976)	
Paralysis		1.68%	3.41%	1.32%	<.0001
Neurodegenerative disorders		4.85%	6.64%	4.48%	<.0001
Chronic pulmonary disease		23.59%	26.84%	22.91%	<.0001
Diabetes (uncomplicated)		20.84%	22.53%	20.49%	0.0003
Diabetes (complicated)		8.15%	9.50%	7.87%	<.0001
Solid tumor without metastasis		1.67%	2.02%	1.59%	0.0160
Metastatic cancer		0.34%	0.30%	0.35%	0.5620
Hypothyroidism		15.42%	15.43%	15.42%	0.9786
Renal failure		18.78%	22.94%	17.92%	<.0001
Liver disease		2.05%	2.56%	1.95%	0.0020
Peptic ulcer Disease, excluding bleeding		0.87%	1.03%	0.84%	0.1392
AIDS/HIV		0.00%	0.00%	0.00%	1.0000
Lymphoma		1.11%	1.22%	1.08%	0.3662
Rheumatoid arthritis/collagen vascular diseases		3.63%	3.83%	3.59%	0.3375
Coagulopathy		21.67%	23.43%	21.30%	0.0002
Obesity		16.05%	15.81%	16.10%	0.5748
Weight loss		3.70%	5.38%	3.35%	<.0001
Fluid and electrolyte disorders		25.62%	29.92%	24.72%	<.0001
Blood loss anemia		0.60%	0.71%	0.58%	0.2163
Deficiency Anemia		14.31%	15.95%	13.97%	<.0001
Alcohol abuse		1.66%	1.37%	1.72%	0.0481
Drug abuse		0.89%	1.28%	0.81%	0.0003
Psychoses		0.85%	1.14%	0.79%	0.0070
Depression		7.03%	7.95%	6.84%	0.0016

1: For continuous variables, the mean +/- std were reported.
2: For categorical variables, P-values were based on chi-squared test with exact p-value from Monte Carlo simulation.
3: For continuous variables, P-values were based on Welch's t-test.

Definitions: SAVR (Surgical Aortic Valve Replacement), TAVR (Transcatheter Aortic Valve Replacement), EEG (Electroencephalogram), PPM (Permanent Pacemaker), ICD (Implantable cardioverter-defibrillator), AIDS (Acquired immunodeficiency syndrome), HIV (Human immunodeficiency virus)

Supplementary Table 10: First-Time SAVR and TAVR Patients' Characteristics with and without a Mortality/Morbidity Composite Endpoint

Variable	Level	Total (N=36,947)	Composite Endpoint		P-value
			Yes (N=15,971)	No (N=20,976)	
Primary factors					
Mental Illness		13.18%	11.58%	13.41%	0.0005
Surgery type	SAVR	62.22%	66.02%	61.66%	<.0001
	TAVR	37.78%	33.98%	38.34%	
Type of admission	Elective	82.23%	73.28%	83.56%	<.0001
	Urgent	17.77%	26.72%	16.44%	
Patients' characteristics					
Gender	Female	44.86%	43.85%	45.01%	0.1325
	Male	55.14%	56.15%	54.99%	
Age		74.09 ± 12.82	76.30±11.74	73.76±12.94	<.0001
Race	Black	4.39%	5.47%	4.23%	<.0001
	Other	95.61%	94.53%	95.77%	
Ethnicity	Hispanic	4.60%	4.42%	4.62%	0.5388
	Other and unknown	95.40%	95.58%	95.38%	
Insurance	Commercial	26.94%	20.75%	27.86%	<.0001
	Medicaid, Medicare, and Other	73.06%	79.25%	72.14%	
Psychiatric disease-related risk factors					
Alcohol Abuse		1.03%	0.83%	1.06%	0.1444
Opioid abuse		2.45%	1.86%	2.53%	0.0047
Family History		0.04%	0.02%	0.04%	0.7102
Suicide Ideation		0.03%	0.08%	0.02%	0.0291
Suicide attempt		0.00%	0.00%	0.00%	.
Intracranial Injury		0.01%	0.02%	0.01%	1.0000
Age-Related Physical Disability		1.79%	1.46%	1.83%	0.0685
Frailty (mental)		0.31%	0.29%	0.31%	0.8547
Abnormal EEG		0.00%	0.00%	0.00%	.
Autoimmune Disorder		0.04%	0.06%	0.04%	0.4341
Acquired coagulation factor deficiency		0.15%	0.67%	0.08%	<.0001
Abnormal leukocyte count		1.22%	1.40%	1.19%	0.2148
Risk factors					
Tobacco/Smoking		34.57%	27.91%	35.57%	<.0001
Hypertension		78.15%	76.52%	77.10%	0.0034
Congestive Heart Failure		20.38%	22.98%	19.99%	<.0001
Cardiomyopathy		6.21%	8.56%	5.87%	<.0001
Diabetes Mellitus		2.25%	3.80%	2.02%	<.0001
Coronary Artery Disease		48.49%	48.28%	48.53%	0.7487
Chronic Lung Disease		23.31%	25.53%	22.98%	<.0001
Chronic Obstructive Pulmonary Disease		7.99%	8.29%	7.95%	0.4214
History of Stroke		6.86%	5.89%	7.00%	0.0044
Stroke		8.59%	14.44%	7.72%	<.0001
Carotid Disease		3.96%	4.40%	3.89%	0.0888
Carotid Stenosis		3.83%	4.05%	3.80%	0.3962
Cerebral Vascular Disease		13.92%	20.33%	12.96%	<.0001

		Composite Endpoint			
Variable	Level	Total (N=36,947)	Yes (N=15,971)	No (N=20,976)	P-value
Peripheral Vascular Disease		7.53%	8.24%	7.43%	0.0453
History of Myocardial Infarction		8.38%	8.10%	8.42%	0.4474
Myocardial Infarction		9.80%	11.48%	9.55%	<.0001
Permanent Pacemaker or Implantable Cardiac Defibrillator (PPM/ICD)		7.86%	7.76%	7.87%	0.7984
Bicuspid Aortic Valve		5.42%	3.28%	5.74%	<.0001
Syncope		0.93%	0.81%	0.95%	0.3764
Dyspnea		1.59%	1.73%	1.57%	0.4034
Chest Pain		1.95%	1.52%	2.02%	0.0218
Dialysis		1.40%	3.24%	1.1	<.0001
Hyperlipidemia		60.53%	60.22%	60.76%	<.0001
Elevated Lipoprotein		0.00%	0.00%	0.00%	.
Presence of Prosthetic Heart valve		0.00%	0.00%	0.00%	.
Abdominal Aortic Aneurysm		2.21%	1.75%	2.27%	0.0222
Aortic Valve Disorders		100.00%	100.00%	100.00%	.
Non rheumatic aortic stenosis		92.08%	88.71%	92.58%	<.0001
Rheumatic Heart Disease		5.01%	6.55%	4.78%	<.0001
Obstructive Sleep Apnea		7.47%	8.14%	7.37%	0.0576
Leukemia		0.71%	1.04%	0.66%	0.0028
Lymphoma		0.80%	0.86%	0.79%	0.6494
Chronic Kidney Disease	Stage 1	0.06%	0.06%	0.06%	<.0001
	Stage 2	0.99%	1.25%	0.95%	
	Stage 3	8.39%	15.99%	7.26%	
	Stage 4	61.86%	5.36%	1.34%	
	Stage 5	0.15%	0.40%	0.11%	
	ESRD	2.33%	5.82%	1.81%	
Chronic Kidney Disease with Dialysis		1.40%	3.24%	1.13%	<.0001
Chronic Kidney Disease without dialysis		19.70%	40.18%	16.65%	<.0001
Obesity		15.64%	15.63%	15.64%	0.9960
Anemia (iron deficiency)		12.13%	13.90%	11.87%	<.0001
Rheumatoid arthritis/collagen vascular diseases		2.91%	2.86%	2.92%	0.8068
Fluid and Electrolyte Disorders		0.43%	2.69%	0.09%	<.0001
Pulmonary Hypertension		14.32%	19.56%	13.54%	<.0001
Platelet count (thrombocytopenia)		19.97%	24.84%	19.25%	<.0001
Previous internal cardioverter-defibrillator		1.53%	1.54%	1.53%	0.9522
Cerebral occlusion		0.02%	0.06%	0.01%	0.0893
Hypothyroidism		15.12%	14.03%	15.29%	0.0230
Intra-aortic Balloon Pump		1.13%	5.07%	0.54%	<.0001
Elixhauser Comorbidity					
Elixhauser Mortality Index		10.74±10.47	17.40±11.53	9.75±9.93	<.0001
Congestive heart failure		48.29%	61.59%	46.30%	<.0001
Valvular disease		37.85%	36.76%	38.02%	0.0931
Pulmonary circulation disease		8.98%	12.13%	8.51%	<.0001
Peripheral vascular disease		15.13%	17.35%	14.80%	<.0001
Hypertension (uncomplicated/complicated)		78.08%	76.33%	78.34%	0.0017

Variable	Level	Total (N=36,947)	Composite Endpoint		P-value
			Yes (N=15,971)	No (N=20,976)	
Paralysis		1.68%	4.99%	1.18%	<.0001
Neurodegenerative disorders		4.85%	8.20%	4.35%	<.0001
Chronic pulmonary disease		23.59%	26.07%	23.22%	<.0001
Diabetes (uncomplicated)		20.84%	19.24%	21.08%	0.0036
Diabetes (complicated)		8.15%	12.59%	7.49%	<.0001
Solid tumor without metastasis		1.67%	1.88%	1.64%	0.2209
Metastatic cancer		0.34%	0.44%	0.32%	0.2013
Hypothyroidism		15.42%	14.38%	15.58%	0.0325
Renal failure		18.78%	39.18%	15.74%	<.0001
Liver disease		2.05%	3.74%	1.80%	<.0001
Peptic ulcer Disease, excluding bleeding		0.87%	1.09%	0.84%	0.0834
AIDS/HIV		0.00%	0.00%	0.00%	1.0000
Lymphoma		1.11%	1.40%	1.06%	0.0388
Rheumatoid arthritis/collagen vascular diseases		3.63%	3.42%	3.66%	0.4128
Coagulopathy		21.67%	29.85%	20.45%	<.0001
Obesity		16.05%	16.30%	16.01%	0.6075
Weight loss		3.70%	10.62%	2.67%	<.0001
Fluid and electrolyte disorders		25.62%	44.94%	22.74%	<.0001
Blood loss anemia		0.60%	0.77%	0.58%	0.0998
Deficiency Anemia		14.31%	17.70%	13.80%	<.0001
Alcohol abuse		1.66%	1.80%	1.64%	0.4395
Drug abuse		0.89%	1.38%	0.82%	0.0001
Psychoses		0.85%	0.88%	0.85%	0.8460
Depression		7.03%	5.99%	7.19%	0.0025

1: For continuous variables, the mean +/- std were reported.
2: For categorical variables, P-values were based on chi-squared test with exact p-value from Monte Carlo simulation.
3: For continuous variables, P-values were based on Welch's t-test.

Definitions: SAVR (Surgical Aortic Valve Replacement), TAVR (Transcatheter Aortic Valve Replacement), EEG (Electroencephalogram), PPM (Permanent Pacemaker), ICD (Implantable cardioverter-defibrillator), AIDS (Acquired immunodeficiency syndrome), HIV (Human immunodeficiency virus)

Supplementary Table 11: Repeat SAVR and ViV-TAVR Patients' Characteristics with and without a New Onset Postoperative Atrial Fibrillation Complication

Variable	Level	Total (N=242)	New Onset POAF		P-value
			Yes (N=51)	No (N=191)	
Primary factors					
Mental Illness		16.94%	21.57%	15.71%	0.3215
Surgery type	Redo-SAVR	70.25%	72.55%	69.63%	0.6858
	ViV-TAVR	29.75%	27.45%	30.37%	
Type of admission	Elective	75.21%	82.35%	73.30%	0.1834
	Urgent	24.79%	17.65%	26.70%	
Patients' characteristics					
Gender	Female	35.54%	39.22%	34.55%	0.5367
	Male	64.46%	60.78%	65.45%	
Age		64.91±14.87	71.71±11.86	63.10±15.09	<.0001
Race	Black	8.68%	9.80%	8.38%	0.7478
	Other	91.32%	90.20%	91.62%	
Ethnicity	Hispanic	7.85%	1.96%	9.42%	0.0840
	Other and unknown	92.15%	98.04%	90.58%	
Insurance	Commercial	39.67%	19.61%	45.03%	0.0010
	Medicaid, Medicare, and Other	60.33%	80.39%	54.97%	
Psychiatric disease-related risk factors					
Alcohol Abuse		2.07%	0.00%	2.62%	0.3665
Opioid abuse		2.48%	5.88%	1.57%	0.1082
Family History		0.00%	0.00%	0.00%	
Suicide Ideation		0.00%	0.00%	0.00%	
Suicide attempt		0.00%	0.00%	0.00%	.
Intracranial Injury		0.00%	0.00%	0.00%	
Age-Related Physical Disability		1.24%	1.59%	1.83%	1.0000
Frailty (mental)		0.41%	1.96%	0.00%	0.2129
Abnormal EEG		0.00%	0.00%	0.00%	.
Autoimmune Disorder		0.41%	1.96%	0.00%	0.2150
Acquired coagulation factor deficiency		1.65%	1.96%	1.57%	1.0000
Abnormal leukocyte count		1.65%	1.96%	1.57%	1.0000
Risk factors					
Tobacco/Smoking		36.78%	35.29%	37.17%	0.8048
Hypertension		79.34%	86.27%	77.49%	0.1685
Congestive Heart Failure		24.38%	23.53%	24.61%	0.8735
Cardiomyopathy		7.44%	3.92%	8.38%	0.3711
Diabetes Mellitus		2.48%	1.96%	2.62%	1.0000
Coronary Artery Disease		38.02%	43.14%	36.65%	0.3965
Chronic Lung Disease		22.31%	15.69%	24.08%	0.2007
Chronic Obstructive Pulmonary Disease		11.16%	5.88%	12.57%	0.2211
History of Stroke		5.79%	5.88%	5.76%	1.0000
Stroke		11.57%	11.76%	11.52%	0.9610
Carotid Disease		2.07%	5.88%	1.05%	0.0586
Carotid Stenosis		2.07%	5.88%	1.05%	0.0655
Cerebral Vascular Disease		16.53%	23.53%	14.66%	0.1298
Peripheral Vascular Disease		3.72%	3.92%	3.66%	1.0000

		New Onset POAF			
Variable	Level	Total (N=242)	Yes (N=51)	No (N=191)	P-value
History of Myocardial Infarction		4.13%	1.96%	4.71%	0.4790
Myocardial Infarction		10.33%	11.76%	9.95%	0.7049
Permanent Pacemaker or Implantable Cardiac Defibrillator (PPM/ICD)		5.37%	0.00%	6.81%	0.0814
Bicuspid Aortic Valve		0.83%	0.00%	1.05%	1.0000
Syncope		0.00%			
Dyspnea		3.31%	1.96%	3.66%	0.6952
Chest Pain		1.24%	1.96%	1.05%	1.0000
Dialysis		3.72%	3.92%	3.66%	1.0000
Hyperlipidemia		52.07%	66.67%	48.17%	0.0188
Elevated Lipoprotein		0.00%	0.00%	0.00%	.
Presence of Prosthetic Heart valve		0.00%	0.00%	0.00%	.
Abdominal Aortic Aneurysm		1.24%	1.96%	1.05%	1.0000
Aortic Valve Disorders		65.70%	70.59%	64.40%	0.4080
Non rheumatic aortic stenosis		54.13%	54.90%	53.93%	0.9012
Rheumatic Heart Disease		4.96%	3.92%	5.24%	0.7463
Obstructive Sleep Apnea		10.33%	9.80%	10.47%	0.8894
Leukemia		0.41%	1.96%	0.00%	0.2058
Lymphoma		1.24%	0.00%	1.57%	0.6080
Chronic Kidney Disease	Stage 1	82.23%	82.35%	82.20%	0.4608
	Stage 2	0.41%	1.96%	0.00%	
	Stage 3	8.68%	7.84%	8.90%	
	Stage 4	2.48%	1.96%	2.62%	
	Stage 5	6.20%	5.88%	6.28%	
ESRD	6.20%	5.88%	6.28%		
Chronic Kidney Disease with Dialysis		3.72%	3.92%	3.66%	1.0000
Chronic Kidney Disease without dialysis		23.97%	27.45%	23.04%	0.5118
Obesity		21.07%	21.57%	20.94%	0.9224
Anemia (iron deficiency)		13.64%	13.73%	13.61%	0.9833
Rheumatoid arthritis/collagen vascular diseases		3.72	1.96	4.19%	0.6952
Fluid and Electrolyte Disorders		0.83%	1.96%	0.52%	0.3785
Pulmonary Hypertension		14.05	21.57%	12.04%	0.0820
Platelet count (thrombocytopenia)		24.38%	31.37%	22.51%	0.1905
Previous internal cardioverter-defibrillator		1.24%	0.00%	1.57%	0.5920
Cerebral occlusion		0.00%	0.00%	0.00%	
Hypothyroidism		10.74%	5.88%	12.04%	0.3126
Intra-aortic Balloon Pump		2.89%	3.92%	2.62%	0.6382
Elixhauser Comorbidity					
Elixhauser Readmission Index		23.93±15.36	23.55±14.78	24.03±15.55	0.8382
Elixhauser Mortality Index		13.06±10.95	13.02±10.49	13.07±11.09	0.9745
Congestive heart failure		52.89%	54.90%	52.36%	0.7462
Valvular disease		62.81%	70.59%	60.73%	0.1958
Pulmonary circulation disease		6.61%	3.92%	7.33%	0.5381
Peripheral vascular disease		11.98%	19.61%	9.95%	0.0591
Hypertension (uncomplicated/complicated)		78.93%	86.27%	76.96%	0.1475
Paralysis		2.89%	3.92%	2.62%	0.6402

Variable	Level	Total (N=242)	New Onset POAF		P-value
			Yes (N=51)	No (N=191)	
Neurodegenerative disorders		6.61%	7.84%	6.28%	0.7576
Chronic pulmonary disease		22.31%	15.69%	24.08%	0.2007
Diabetes (uncomplicated)		16.94%	13.73%	17.80%	0.4906
Diabetes (complicated)		11.98%	15.69%	10.99%	0.3594
Solid tumor without metastasis		2.07%	1.96%	2.09%	1.0000
Metastatic cancer		0.41%	0.00%	0.52%	1.0000
Hypothyroidism		11.16%	5.88%	12.57%	0.2095
Renal failure		23.55%	25.49%	23.04%	0.7137
Liver disease		3.31%	3.92%	3.14%	1.0000
Peptic ulcer Disease, excluding bleeding		1.24%	0.00%	1.57%	0.6134
AIDS/HIV		0.00%	100.00%	100.00%	
Lymphoma		1.65%	0.00%	2.09%	0.5850
Rheumatoid arthritis/collagen vascular diseases		5.37%	3.92%	5.76%	0.7440
Coagulopathy		28.10%	37.25%	25.65%	0.1015
Obesity		21.90%	21.57%	21.99%	0.9485
Weight loss		6.20%	0.00%	7.85%	0.0489
Fluid and electrolyte disorders		39.67%	35.29%	40.84%	0.4722
Blood loss anemia		1.24%	3.92%	0.52%	0.1157
Deficiency Anemia		16.53%	17.65%	16.23%	0.8088
Alcohol abuse		2.48%	0.00%	3.14%	0.3461
Drug abuse		2.89%	1.96%	3.14%	1.0000
Psychoses		1.65%	1.96%	1.57%	1.0000
Depression		10.74%	9.80%	10.99%	0.8072

1: For continuous variables, the mean +/- std were reported.
2: For categorical variables, P-values were based on chi-squared test with exact p-value from Monte Carlo simulation.
3: For continuous variables, P-values were based on Welch's t-test.

Definitions: SAVR (Surgical Aortic Valve Replacement), TAVR (Transcatheter Aortic Valve Replacement), EEG (Electroencephalogram), PPM (Permanent Pacemaker), ICD (Implantable cardioverter-defibrillator), AIDS (Acquired immunodeficiency syndrome), HIV (Human immunodeficiency virus)

Supplementary Table 12: Repeat SAVR and ViV-TAVR Patients' Characteristics with and without a 30-day Readmission

Variable	Level	Total (N=242)	30-Day Readmission		P-value
			Yes (N=51)	No (N=191)	
Primary factors					
Mental Illness		16.94%	12.90%	17.54%	0.6163
Surgery type	Redo-SAVR	70.25%	77.42%	69.19%	0.3496
	ViV-TAVR	29.75%	22.58%	30.81%	
Type of admission	Elective	75.21%	74.19%	75.36%	0.8887
	Urgent	24.79%	25.81%	24.64%	
Patients' characteristics					
Gender	Female	35.54%	35.48%	35.55%	0.9947
	Male	64.46%	64.52%	64.45%	
Age		64.91±14.87	68.16±16.80	64.44±14.55	0.2487
Race	Black	8.68%	3.23%	9.48%	0.3235
	Other	91.32%	96.77%	90.52%	
Ethnicity	Hispanic	7.85%	16.13%	6.64%	0.0665
	Other and unknown	92.15%	83.87%	93.36%	
Insurance	Commercial	39.67%	38.71%	39.81%	0.9069
	Medicaid, Medicare, and Other	60.33%	61.29%	60.19%	
Psychiatric disease-related risk factors					
Alcohol Abuse		2.07%	0.00%	2.37%	0.6281
Opioid abuse		2.48%	5.88%	1.57%	0.6109
Family History		0.00%	0.00%	0.00%	
Suicide Ideation		0.00%	0.00%	0.00%	
Suicide attempt		0.00%	0.00%	0.00%	.
Intracranial Injury		0.00%	0.00%	0.00%	
Age-Related Physical Disability		1.24%	0.00%	1.42%	1.0000
Frailty (mental)		0.41%	0.00%	0.47%	1.0000
Abnormal EEG		0.00%	0.00%	0.00%	.
Autoimmune Disorder		0.41%	0.00%	0.47%	1.0000
Acquired coagulation factor deficiency		1.65%	3.23%	1.42%	1.0000
Abnormal leukocyte count		1.65%	0.00%	1.90%	0.6583
Risk factors					
Tobacco/Smoking		36.78%	22.58%	38.86%	0.0792
Hypertension		79.34%	77.42%	79.62%	0.7774
Congestive Heart Failure		24.38%	22.58%	24.64%	0.8027
Cardiomyopathy		7.44%	9.68%	7.11%	0.7134
Diabetes Mellitus		2.48%	0.00%	2.84%	0.6064
Coronary Artery Disease		38.02%	41.94%	37.44%	0.6302
Chronic Lung Disease		22.31%	19.35%	22.75%	0.6717
Chronic Obstructive Pulmonary Disease		11.16%	16.13%	10.43%	0.3464
History of Stroke		5.79%	3.23%	6.16	0.7000
Stroke		11.57%	25.81%	9.48%	0.0080
Carotid Disease		2.07%	6.45%	1.42%	0.1201
Carotid Stenosis		2.07%	6.45%	1.42%	0.1213
Cerebral Vascular Disease		16.53%	35.48%	13.74%	0.0023
Peripheral Vascular Disease		3.72%	3.23%	3.79%	1.0000

		30-Day Readmission			
Variable	Level	Total (N=242)	Yes (N=51)	No (N=191)	P-value
History of Myocardial Infarction		4.13%	9.68%	3.32%	0.1208
Myocardial Infarction		10.33%	22.58%	8.53%	0.0164
Permanent Pacemaker or Implantable Cardiac Defibrillator (PPM/ICD)		5.37%	6.45%	5.21%	1.0000
Bicuspid Aortic Valve		0.83%	0.00%	0.95%	1.0000
Syncope		0.00%			
Dyspnea		3.31%	6.45%	2.84%	0.6093
Chest Pain		1.24%	0.00%	1.42%	1.0000
Dialysis		3.72%	0.00%	4.27%	0.3871
Hyperlipidemia		52.07%	45.16%	53.08%	0.4099
Elevated Lipoprotein		0.00%	0.00%	0.00%	.
Presence of Prosthetic Heart valve		0.00%	0.00%	0.00%	.
Abdominal Aortic Aneurysm		1.24%	0.00%	1.42%	1.0000
Aortic Valve Disorders		65.70%	48.39%	68.25%	0.0296
Non rheumatic aortic stenosis		54.13%	41.94%	55.92%	0.1444
Rheumatic Heart Disease		4.96%	9.68%	4.27%	0.3635
Obstructive Sleep Apnea		10.33%	3.23%	11.37%	0.2128
Leukemia		0.41%	0.00%	0.47%	1.0000
Lymphoma		1.24%	0.00%	1.42%	1.0000
Chronic Kidney Disease	Stage 1	82.23%	82.35%	82.20%	0.2555
	Stage 2	0.41%	1.96%	0.00%	
	Stage 3	8.68%	7.84%	8.90%	
	Stage 4	2.48%	1.96%	2.62%	
	Stage 5	6.20%	5.88%	6.28%	
	ESRD	6.20%	5.88%	6.28%	
Chronic Kidney Disease with Dialysis		3.72%	0.00%	4.27%	0.3878
Chronic Kidney Disease without dialysis		23.97%	29.03%	23.22%	0.4792
Obesity		21.07%	16.13%	21.80%	0.4697
Anemia (iron deficiency)		13.64%	3.23%	15.17%	0.0949
Rheumatoid arthritis/collagen vascular diseases		3.72%	9.68%	2.84%	0.0955
Fluid and Electrolyte Disorders		0.83%	3.23%	0.47%	0.2482
Pulmonary Hypertension		14.05%	19.35%	13.27%	0.3626
Platelet count (thrombocytopenia)		24.38%	22.58%	24.64%	0.8027
Previous internal cardioverter-defibrillator		1.24%	3.23%	0.95%	0.3413
Cerebral occlusion		0.00%	0.00%	0.00%	
Hypothyroidism		10.74%	12.90%	10.43%	0.7471
Intra-aortic Balloon Pump		2.89%	6.45%	2.37%	0.2248
Elixhauser Comorbidity					
Elixhauser Readmission Index		23.93±15.36	25.35±17.72	23.72±15.02	0.6282
Congestive heart failure		52.89%	48.39%	53.55%	0.5904
Valvular disease		62.81%	54.84%	63.98%	0.3254
Pulmonary circulation disease		6.61%	9.68%	6.16%	0.7028
Peripheral vascular disease		11.98%	12.90	11.85%	1.0000
Hypertension (uncomplicated/complicated)		78.93%	74.19%	79.62%	0.4890
Paralysis		2.89%	3.23%	2.84%	1.0000
Neurodegenerative disorders		6.61%	12.90%	5.69%	0.2318

Variable	Level	Total (N=242)	30-Day Readmission		P-value
			Yes (N=51)	No (N=191)	
Chronic pulmonary disease		22.31%	19.35%	22.75%	0.6717
Diabetes (uncomplicated)		16.94%	19.35%	16.59%	0.7013
Diabetes (complicated)		11.98%	12.90%	11.85%	1.0000
Solid tumor without metastasis		2.07%	3.23%	1.90%	1.0000
Metastatic cancer		0.41%	0.00%	0.47%	1.0000
Hypothyroidism		11.16%	12.90%	10.90%	0.7616
Renal failure		23.55%	29.03%	22.75%	0.4414
Liver disease		3.31%	6.45%	2.84%	0.6065
Peptic ulcer Disease, excluding bleeding		1.24%	3.23%	0.95%	0.3322
AIDS/HIV		0.00%	0.00%	0.00%	
Lymphoma		1.65%	0.00%	1.90%	0.6497
Rheumatoid arthritis/collagen vascular diseases		5.37%	9.68%	4.74%	0.3805
Coagulopathy		28.10%	29.03%	27.96%	0.9015
Obesity		21.90%	19.35%	22.27%	0.7136
Weight loss		6.20%	16.13%	4.74%	0.0141
Fluid and electrolyte disorders		39.67%	45.16%	38.86%	0.5033
Blood loss anemia		1.24%	0.00%	1.42%	1.0000
Deficiency Anemia		16.53%	6.45%	18.01%	0.1260
Alcohol abuse		2.48%	0.00%	2.84%	0.6065
Drug abuse		2.89%	3.23%	2.84%	1.0000
Psychoses		1.65%	0.00%	1.90%	0.6577
Depression		10.74%	6.45%	11.37%	0.5516

1: For continuous variables, the mean +/- std were reported.
2: For categorical variables, P-values were based on chi-squared test with exact p-value from Monte Carlo simulation.
3: For continuous variables, P-values were based on Welch's t-test.

Definitions: SAVR (Surgical Aortic Valve Replacement), TAVR (Transcatheter Aortic Valve Replacement), EEG (Electroencephalogram), PPM (Permanent Pacemaker), ICD (Implantable cardioverter-defibrillator), AIDS (Acquired immunodeficiency syndrome), HIV (Human immunodeficiency virus)

Supplementary Table 13: Repeat SAVR and ViV-TAVR Patients' Characteristics with and without a Mortality/Morbidity Composite Endpoint

Variable	Level	Total (N=242)	Composite Endpoint		P-value
			Yes (N=51)	No (N=191)	
Primary factors					
Mental Illness		16.94%	6 (12.77%)	35 (17.95%)	0.3952
Surgery type	Redo-SAVR	170 (70.25%)	35 (74.47%)	135 (69.23%)	0.4808
	ViV-TAVR	72 (29.75%)	12 (25.53%)	60 (30.77%)	
Type of admission	Elective	182 (75.21%)	32 (68.09%)	150 (76.92%)	0.2078
	Urgent	60 (24.79%)	15 (31.91%)	45 (23.08%)	
Patients' characteristics					
Gender	Female	86 (35.54%)	20 (42.55%)	66 (33.85%)	0.2629
	Male	156 (64.46%)	27 (57.45%)	129 (66.15%)	
Age		64.91±14.87	67.34±13.63	64.33±15.13	0.1873
Race	Black	21 (8.68%)	10 (21.28%)	11 (5.64%)	0.0006
	Other	221 (91.32%)	37 (78.72%)	184 (94.36%)	
Ethnicity	Hispanic	19 (7.85%)	7 (14.89%)	12 (6.15%)	0.0455
	Other and unknown	223 (92.15%)	40 (85.11%)	183 (93.85%)	
Insurance	Commercial	96 (39.67%)	13 (27.66%)	83 (42.56%)	0.0608
	Medicaid, Medicare, and Other	146 (60.33%)	34 (72.34%)	112 (57.44%)	
Psychiatric disease-related risk factors					
Alcohol Abuse		2.07%	0.00%	2.37%	0.5816
Opioid abuse		2.48%	5.88%	1.57%	0.3550
Family History		0.00%	0.00%	0.00%	
Suicide Ideation		0.00%	0.00%	0.00%	
Suicide attempt		0.00%	0.00%	0.00%	.
Intracranial Injury		0.00%	0.00%	0.00%	
Age-Related Physical Disability		1.24%	0.00%	1.42%	0.6192
Frailty (mental)		0.41%	0.00%	0.47%	1.0000
Abnormal EEG		0.00%	0.00%	0.00%	.
Autoimmune Disorder		0.41%	0.00%	0.47%	1.0000
Acquired coagulation factor deficiency		1.65%	3.23%	1.42%	1.0000
Abnormal leukocyte count		1.65%	0.00%	1.90%	0.5891
Risk factors					
Tobacco/Smoking		36.78%	14.89%	42.05%	0.0005
Hypertension		79.34%	78.72%	79.49%	0.9076
Congestive Heart Failure		24.38%	23.40%	24.62%	0.8622
Cardiomyopathy		7.44%	8.51%	7.18%	0.7589
Diabetes Mellitus		2.48%	6.38%	1.54%	0.0897
Coronary Artery Disease		38.02%	29.79%	40.00%	0.1954
Chronic Lung Disease		22.31%	23.40%	22.05%	0.8415
Chronic Obstructive Pulmonary Disease		11.16%	10.64%	11.28%	0.8999
History of Stroke		5.79%	2.13%	6.67%	0.3176
Stroke		11.57%	17.02%	10.26%	0.1931
Carotid Disease		2.07%	6.38%	1.03%	0.0530
Carotid Stenosis		2.07%	6.38%	1.03%	0.0483
Cerebral Vascular Disease		16.53%	27.66%	13.85%	0.0221
Peripheral Vascular Disease		3.72%	2.13%	4.10%	0.7009

		Composite Endpoint			
Variable	Level	Total (N=242)	Yes (N=51)	No (N=191)	P-value
History of Myocardial Infarction		4.13%	6.38%	3.59%	0.4198
Myocardial Infarction		10.33%	21.28%	7.69%	0.0060
Permanent Pacemaker or Implantable Cardiac Defibrillator (PPM/ICD)		5.37%	6.38%	5.13%	1.0000
Bicuspid Aortic Valve		0.83%	0.00%	1.03%	1.0000
Syncope		0.00%	0.00%	0.00%	
Dyspnea		3.31%	0 (0.00%)	4.10%	0.2229
Chest Pain		1.24%	0 (0.00%)	1.54%	1.0000
Dialysis		3.72%	10.64%	2.05%	0.3871
Hyperlipidemia		52.07%	44.68%	53.85%	0.4099
Elevated Lipoprotein		0.00%	0.00%	0.00%	.
Presence of Prosthetic Heart valve		0.00%	0.00%	0.00%	.
Abdominal Aortic Aneurysm		1.24%	0.00%	1.54%	0.6200
Aortic Valve Disorders		65.70%	63.83%	66.15%	0.7632
Non rheumatic aortic stenosis		54.13%	42.55%	56.92%	0.0759
Rheumatic Heart Disease		4.96%	2.13%	5.64%	0.4734
Obstructive Sleep Apnea		10.33%	12.77%	(9.74%)	0.5411
Leukemia		0.41%	0.00%	0.51%	1.0000
Lymphoma		1.24%	0.00%	1.54%	0.6248
Chronic Kidney Disease	Stage 1	82.23%	63.83%	86.67%	0.0008
	Stage 2	0.41%	0.00	0.51%	
	Stage 3	8.68%	14.89%	7.18%	
	Stage 4	2.48%	8.51%	1.03%	
	Stage 5	6.20%	12.77%	4.62%	
	ESRD	6.20%	12.77%	12.77%	
Chronic Kidney Disease with Dialysis		3.72%	10.64%	2.05%	0.3878
Chronic Kidney Disease without dialysis		23.97%	51.06%	17.44%	0.4792
Obesity		21.07%	25.53%	20.00%	0.4697
Anemia (iron deficiency)		13.64%	10.64%	14.36%	0.0949
Rheumatoid arthritis/collagen vascular diseases		3.72%	6.38%	3.08%	0.0955
Fluid and Electrolyte Disorders		0.83%	2.13%	0.51%	0.2482
Pulmonary Hypertension		14.05%	14.89%	13.85%	0.3626
Platelet count (thrombocytopenia)		24.38%	21.28%	25.13%	0.8027
Previous internal cardioverter-defibrillator		1.24%	0.00%	1.54%	0.3413
Cerebral occlusion		0.00%	0.00%	0.00%	
Hypothyroidism		10.74%	10.64%	10.77%	0.7471
Intra-aortic Balloon Pump		2.89%	6.38%	2.05%	0.2248
Elixhauser Comorbidity					
Elixhauser Mortality Index		13.06±10.95	16.62±9.96	12.21±11.02	0.0093
Congestive heart failure		52.89%	59.57%	51.28%	0.3066
Valvular disease		62.81%	59.57%	63.59%	0.6092
Pulmonary circulation disease		6.61%	8.51%	6.15%	0.7480
Peripheral vascular disease		11.98%	14.89%	11.28%	0.4938
Hypertension (uncomplicated/complicated)		78.93%	76.60%	79.49%	0.6626
Paralysis		2.89%	4.26%	2.56%	0.6299
Neurodegenerative disorders		6.61%	12.77%	5.13%	0.0585

Variable	Level	Total (N=242)	Composite Endpoint		P-value
			Yes (N=51)	No (N=191)	
Chronic pulmonary disease		22.31%	23.40%	22.05%	0.8415
Diabetes (uncomplicated)		16.94%	8.51%	18.97%	0.1305
Diabetes (complicated)		11.98%	25.53%	8.72%	0.0014
Solid tumor without metastasis		2.07%	0.00%	2.56%	0.5865
Metastatic cancer		0.41%	0.00%	0.51%	1.0000
Hypothyroidism		11.16%	10.64%	11.28%	0.8999
Renal failure		23.55%	51.06%	16.92%	<.0001
Liver disease		3.31%	2.13%	3.59%	0.7053
Peptic ulcer Disease, excluding bleeding		1.24%	2.13%	1.03%	1.0000
AIDS/HIV		0.00%	0.00%	0.00%	
Lymphoma		1.65%	0.00%	2.05%	0.5901
Rheumatoid arthritis/collagen vascular diseases		5.37%	6.38%	5.13%	1.0000
Coagulopathy		28.10%	27.66%	28.21%	0.9405
Obesity		21.90%	27.66%	20.51%	0.2876
Weight loss		6.20%	8.51%	5.64%	0.5019
Fluid and electrolyte disorders		39.67%	53.19%	36.41%	0.0348
Blood loss anemia		1.24%	4.26%	0.51%	0.0993
Deficiency Anemia		16.53%	17.02%	16.41%	0.9194
Alcohol abuse		2.48%	0.00%	3.08%	0.3642
Drug abuse		2.89%	2.13%	3.08%	1.0000
Psychoses		1.65%	0.00%	2.05%	0.5912
Depression		10.74%	10.64%	10.77%	0.9792

1: For continuous variables, the mean +/- std were reported.
2: For categorical variables, P-values were based on chi-squared test with exact p-value from Monte Carlo simulation.
3: For continuous variables, P-values were based on Welch's t-test.

Definitions: SAVR (Surgical Aortic Valve Replacement), TAVR (Transcatheter Aortic Valve Replacement), EEG (Electroencephalogram), PPM (Permanent Pacemaker), ICD (Implantable cardioverter-defibrillator), AIDS (Acquired immunodeficiency syndrome), HIV (Human immunodeficiency virus)