

## **SUPPLEMENTAL MATERIAL**

**Table S1. Empirical risk scores for stroke and bleeding in patients with atrial fibrillation.**

---

<b>Stroke or Systemic Embolism</b>	
CHADS <sub>2</sub>	<ul style="list-style-type: none"><li>• <u>C</u>ongestive heart failure</li><li>• <u>H</u>ypertension</li><li>• <u>A</u>ge<sub>≥</sub>75</li><li>• <u>D</u>iabetes</li><li>• <u>S</u>troke or TIA (2 points)</li></ul>

---

<b>Bleeding</b>	
ATRIA	<ul style="list-style-type: none"><li>• Anemia (3 points)</li><li>• Severe renal disease (3 points)</li><li>• Age<sub>≥</sub>75 (2 points)</li><li>• Prior bleeding (1 point)</li><li>• Hypertension (1 point)</li></ul>

TIA: transient ischemic attack

**Table S2. Distribution of empirical populations.**

Risk Level	Empirical Score	Stroke Risk			Bleeding Risk			
		Adjusted CHADS <sub>2</sub> Stroke Rate	CHADS <sub>2</sub> Distribution, % patients	ORBIT-AF Distribution, %	Empirical Score	ATRIA Event Rates	ATRIA Distribution, % patient-years	ORBIT-AF Distribution, %
Low	CHADS <sub>2</sub> =0	1.9	7%	6%	ATRIA <sub>≤</sub> 3	0.76	83%	74%
Intermediate	CHADS <sub>2</sub> =1	2.8	27%	22%	ATRIA=4	2.62	7%	9%
High	CHADS <sub>2</sub> ≥2	3.6-44	66%	72%	ATRIA <sub>≥</sub> 5	5.75	10%	17%

Alignment among risk levels and empirical risk score, with event rates recorded in the derivation populations, as well as the distribution of patients in both the derivation and ORBIT-AF populations.

**Table S3. Candidate co-variates for the multivariable models.**

**Demographics**

1. Age, years
2. Race – African American/Hispanic/White/Others
3. Gender – Male/Female
4. Level of Education – Some School/High School Graduate/College Graduate/Post Graduate
5. Paylor/Insurance – Medicare or Medicaid/private/Others

**Medical History**

1. Smoking – Current/Recent or Former/Non-smoker
2. Cancer – Yes/No
3. Hypertension – Yes/No
4. Osteoporosis – Yes/No
5. Diabetes – Yes/No
6. Hip Fracture – Yes/No
7. Hyperthyroidism – Yes/No
8. Hypothyroidism – Yes/No
9. GI Bleed – Yes/No
10. Obstructive Sleep Apnea – Yes/No
11. Dialysis – Yes/No
12. Hyperlipidemia – Yes/No
13. Anemia – Yes/No
14. Cognitive Impairment/Dementia – Yes/No
15. Frailty – Yes/No
16. Liver Disease – Yes/No
17. COPD – Yes/No
18. Alcohol Abuse – Yes/No
19. Drug Abuse – Yes/No

**Cardiovascular History**

1. Family History of AF – Yes/No
2. Peripheral Vascular Disease – Yes/No
3. Sinus Node Dysfunction/Sick Sinus Syndrome – Yes/No
4. Stroke or TIA – Yes/No
5. Congestive Heart Failure (CHF) – No CHF/NYHA Class I/NYHA Class II/NYHA Class III or NYHA Class IV

6. Significant Valvular Disease – Yes/No
7. Prior Valve Replacement/Repair – Yes/No

### **Coronary Artery Disease History**

1. History of Coronary Artery Disease – Yes/No
2. Prior MI – Yes/No
3. Prior CABG – Yes/No
4. Any PCI – Yes/No

### **Vital Signs & AF status**

1. Height, cm
2. Weight, kg
3. Heart Rate, bpm
4. Diastolic Blood Pressure, mm Hg
5. Systolic Blood Pressure, mm Hg
6. Body Mass Index, kg/m<sup>2</sup> (For imputation purpose, we will impute individual components which are weight, height)
7. Intraventricular Conduction – RBBB/LBBB/Non-specific IVCD or Unknown-Ventricularly Paced/none

### **Echocardiographic Assessment (TTE or TEE)**

1. LVEF – Normal ( $\geq 50\%$ )/Mild dysfunction ( $>40\%$ ,  $<50\%$ )/Moderate dysfunction ( $\geq 30\%$ ,  $\leq 40\%$ )/Severe dysfunction ( $<30\%$ )
2. LAD Type – Normal/Mild enlargement/Moderate enlargement/Severe enlargement

### **Laboratory Data**

1. eGFR (MDRD), mg/dl (For imputation purpose, we will impute individual components which are age, gender, race, and serum creatinine)
2. Hemotocrit, % (fill in from Hemoglobin by Hemoglobin\*3 if missing)

### **Atrial Fibrillation Diagnosis**

1. Type of AF – First Detected or New Onset/Paroxysmal AF/Persistent AF /Permanent AF
2. EHRA Score – No symptoms/Mild/Severe/Disabling
3. AF management strategy – Rate Control/Rhythm Control
4. Prior Cardioversions – Yes/No

5. Prior antiarrhythmic drug – Yes/No
6. Catheter Ablation of AF – Yes/No
7. AV Node or HIS Bundle Ablation – Yes/No

**Functional Status**

1. Functional Status – Living independently/Living with assistance or Resides in assisted living facility or Resides in skilled nursing home or Bedbound

**Provider or Site**

1. PI/Site Specialty – Cardiology/Electrophysiology/Family Practice or Internal Medicine

**Table S4. Factors associated with the difference in provider-assessed and objective stroke risk.**

<b>Risk Factor</b>	<b>Adjusted Estimate* (95% CI)</b>	<b>t-Value</b>	<b>P-value</b>	<b>Overall P-value</b>
Hypertension	-0.61 (-0.65,-0.56)	-28.38	<.0001	
NYHA Class I	-0.23 (-0.29,-0.17)	-7.09	<.0001	<.0001
60 < Age <= 85 years (per 10 increase)	-0.15 (-0.18,-0.12)	-10.83	<.0001	
Diabetes	-0.14 (-0.20,-0.09)	-5.29	<.0001	
Primary Care Provider	-0.14 (-0.26,-0.03)	-2.44	0.0145	0.0095
Rhythm Control Management Strategy	-0.06 (-0.09,-0.03)	-3.60	0.0003	
Prior Catheter Ablation of AF	-0.06 (-0.11,-0.00)	-2.07	0.0382	
NYHA Class II	-0.05 (-0.10,0.00)	-1.95	0.0506	
Weight > 100 kg (per 10 increase)	-0.02 (-0.03,-0.01)	-4.42	<.0001	
NYHA Class III/IV	-0.01 (-0.07,0.05)	-0.31	0.7554	
Prior Cardioversions	0.03 (0.00,0.06)	2.20	0.0279	
EHRA Mild Symptom Score	0.03 (-0.00,0.06)	1.70	0.0898	
History of Any PCI	0.04 (0.01,0.07)	2.36	0.0185	
History of CABG	0.04 (0.00,0.08)	2.13	0.0328	
Significant Valvular Disease	0.05 (0.02,0.08)	2.99	0.0028	
Peripheral Vascular Disease	0.05 (0.02,0.09)	2.79	0.0052	
Age <= 60 years (per 10 increase)	0.05 (0.01,0.09)	2.24	0.0248	
Anemia	0.06 (0.02,0.10)	2.85	0.0043	
EHRA Severe Symptom Score	0.08 (0.02,0.14)	2.69	0.0072	0.0221
EHRA Disabling Score	0.09 (-0.02,0.20)	1.63	0.1036	
Frailty	0.10 (0.02,0.17)	2.63	0.0084	
Electrophysiology Provider	0.10 (-0.07,0.27)	1.16	0.2459	
Not Living independently	0.12 (0.06,0.18)	3.87	0.0001	
Prior Stroke or TIA	0.17 (0.10,0.23)	5.25	<.0001	

**Table S5. Factors associated with the difference in provider-assessed and objective bleeding risk.**

<b>Risk Factor</b>	<b>Adjusted Estimate* (95% CI)</b>	<b>t-Value</b>	<b>P-value</b>	<b>Overall P-value</b>
Anemia	-1.36 (-1.42,-1.30)	-43.75	<.0001	
Dialysis	-0.38 (-0.54,-0.22)	-4.67	<.0001	
65 < Age <= 80 years (per 10 increase)	-0.11 (-0.15,-0.07)	-5.44	<.0001	
Others Payer vs. Medicare or Medicaid	-0.10 (-0.19,-0.01)	-2.20	0.0278	
Hematocrit, % (per 10 increase)	-0.07 (-0.11,-0.04)	-3.87	0.0003	
Private Payer vs. Medicare or Medicaid	-0.06 (-0.10,-0.02)	-2.95	0.0032	0.0025
eGFR > 63 mg/dl(MDRD) (per 10 increase)	-0.03 (-0.04,-0.01)	-4.20	0.0001	
Prior Cardioversions	0.03 (0.01,0.06)	2.31	0.0211	
Significant Valvular Disease	0.05 (0.01,0.09)	2.42	0.0156	
Obstructive Sleep Apnea	0.05 (0.01,0.08)	2.31	0.0208	
Age <= 65 years (per 10 increase)	0.06 (0.03,0.10)	3.42	0.0006	
Diabetes	0.06 (0.02,0.10)	3.16	0.0016	
Peripheral Vascular Disease	0.06 (0.01,0.10)	2.62	0.0087	
NYHA Class I	0.07 (0.02,0.12)	2.61	0.0090	
History of Coronary Artery Disease	0.09 (0.05,0.12)	4.97	<.0001	
eGFR <= 63 mg/dl(MDRD) (per 10 increase)	0.10 (0.08,0.12)	9.31	<.0001	
Prior Stroke or TIA	0.10 (0.06,0.14)	4.70	<.0001	
NYHA Class II	0.13 (0.08,0.18)	5.31	<.0001	<.0001
Alcohol Abuse	0.13 (0.06,0.20)	3.72	0.0002	
Frailty	0.13 (0.05,0.22)	3.23	0.0012	
Primary Care Provider	0.13 (0.01,0.24)	2.21	0.0270	0.0338
Not Living independently	0.15 (0.08,0.21)	4.57	<.0001	
GI Bleed	0.17 (0.10,0.24)	4.71	<.0001	
Electrophysiology Provider	0.17 (-0.00,0.34)	1.93	0.0531	
NYHA Class III/IV	0.18 (0.11,0.25)	5.05	<.0001	