SUPPLEMENTAL MATERIAL

Table S1. Baseline Characteristics and Medical History, by hospitalization for heart failure status.

Baseline characteristics and medical history				
	Overall	No HF during follow up	With HF during follow-up	P-value
Number of Patients - with follow-up data	N=9765	N=9101	N=664	
Age(yrs), mean±SD	64.9±14.9	64.7±14.7	68.2±16.5	<0.001
Sex (male), , %	53.8	54.3	46.5	<0.001
Weight (kg), mean±SD	73.1±19.3	73.4±19.2	69.2±19.5	<0.001
Height (cm), mean±SD	166.6±10.5	166.8±10.5	163.8±11.3	<0.001
BMI (kg/m2), mean±SD	26.2±5.8	26.2±5.8	25.6±5.9	0.006
Systolic Blood Pressure(mmHg), mean±SD	133.0±24.5	133.1±24.3	132.0±26.4	0.329
Diastolic Blood Pressure(mmHg), mean±SD	80.5±15.0	80.6±15.0	79.0±15.8	0.009
Heart Rate (bpm), mean±SD	103.4±31.0	103.6±31.0	101.5±30.8	0.090
Prior diagnosis of Atrial Fibrillation, %	59.1	58.8	64.3	0.007
- Paroxysmal, %*	35.6	36.4	25.3	<.001
- Persistent, %*	23.7	24.2	17.3	0.001
- Permanent, %*	40.7	39.4	57.4	<.001
Current arrhythmia				
- Atrial Fibrillation, %	92.3	92.2	93.1	0.416
- Atrial Flutter, %	7.7	7.8	6.9	0.421
Patient in atrial fibrillation/atrial flutter when left ED, %	73.0	72.2	83.7	<0.001
Repeat visits for atrial fibrillation/atrial flutter complications during study period	16.8	15.3	36.9	<0.001
History of				
- Myocardial infarction, %	11.2	10.8	17.3	<0.001
- Coronary artery disease, %	25.5	24.6	37.2	<0.001
- Hypertension, %	59.2	58.8	65.8	<0.001
- Stroke/transient ischemic attack, %	13.2	13.0	15.7	0.053
- Rheumatic heart disease, %	10.7	10.3	15.5	<0.001
- Significant Valvular heart disease, %	18.3	17.8	25.2	<0.001
- Emphysema/chronic obstructive pulmonary disease, %	8.0	7.7	11.9	<0.001
- Diabetes mellitus, %	19.5	19.0	26.1	<0.001
- Permanent pacemaker, %	3.8	3.7	5.1	0.060
- Left ventricular hypertrophy, %	17.6	17.0	26.7	<0.001
Tobacco use, %	16.0	15.8	19.3	0.018
Alcohol use - # standard drinks/week, (median) mean±SD deviation	(0)3.3±7.66	(0)3.4±7.74	(0)3.1±6.09	0.644
Prior interventions				
Beta blocker, %	53.2	53.0	55.9	0.150
Calcium channel blocker, %	27.7	27.6	29.4	0.314
Angiotensin converting enzyme-inhibitor, %	27.6	27.0	36.7	<.0001

Angiotensin receptor blocker, %	15.3	15.5	13.0	0.078
Digoxin, %	25.6	24.9	36.1	<.0001
Diuretic, %	41.0	39.7	58.1	<.0001
Amiodarone, %	14.8	14.3	21.5	<.0001
Sotalol, %	3.2	3.3	1.1	0.001
Flecainide, %	1.6	1.7	0	0.001
Prior cardioversions, %	11.3	11.3	11.0	0.793
Prior atrial fibrillation catheter, surgical or Maze procedures, %	2.5	2.6	1.1	0.014
Prior AV-node ablation, %	0.5	0.5	0.9	0.129
Prior left atrial appendage occlusion or amputation, %	0.1	0.1	0	0.370
Medication use after emergency department visit				
Beta blocker, %	53.2	53.0	55.9	0.150
Calcium channel blocker, %	27.7	27.6	29.4	0.314
Angiotensin converting enzyme-inhibitor, %	27.6	27.0	36.7	<.0001
Angiotensin receptor blocker, %	15.3	15.5	13.0	0.078
Digoxin, %	25.6	24.9	36.1	<.0001
Diuretic, %	41.0	39.7	58.1	<.0001
Amiodarone, %	14.8	14.3	21.5	<.0001
Sotalol, %	3.2	3.3	1.1	0.001
Flecainide, %	1.6	1.7	0	0.001

SD= Standard deviation

* Based on the total number of patients with prior atrial fibrillation.

Table S2. Calibration table for the LVS-HARMED score in AFFORD.

Predicted probability	N	Observed, n (%)	Expected, n (%)
0-0.019	129	1 (0.8)	5.1 (3.9)
0.02-0.04	207	13 (6.2)	9.1 (4.4)
0.04-0.06	20	1 (5.0)	1.3 (6.7)
0.06-0.08	6	1 (16.7)	0.5 (8.9)
Total	367	17 (4.6)	17.0 (4.6)

Hosmer Lemeshow p = 0.22

Table S3. Odds ratios for LVS-HARMED score components across country income groups.

	Low income countries*		Lower-middle income countries†		Upper-middle income countries ‡		High income countries§	
	Odds Ratio (95% CI)	P-value	Odds Ratio (95% CI)	P-value	Odds Ratio (95% CI)	P-value	Odds Ratio (95% CI)	P-value
Left ventricular hypertrophy	0.797 (0.135-4.708)	0.7112	1.058 (0.472-2.371)	0.8646	1.407 (0.865-2.289)	0.1517	1.609 (1.214-2.134)	0.0021
Valvular heart disease	2.308 (0.309-17.23)	0.2773	1.118 (0.504-2.478)	0.7171	0.741 (0.338-1.627)	0.4195	1.948 (1.356-2.797)	0.0010
Smoking/other tobacco use	2.210 (0.261-18.70)	0.3225	2.444 (1.039-5.751)	0.0441	1.172 (0.713-1.928)	0.4999	1.474 (1.074-2.023)	0.0186
Height, per cm	0.994 (0.952-1.037)	0.7727	0.961 (0.940-0.981)	0.0002	0.979 (0.959-1.000)	0.0468	0.983 (0.972-0.995)	0.0068
Age, per year	1.008 (0.978-1.038)	0.6088	1.010 (0.995-1.026)	0.1807	1.024 (1.009-1.040)	0.0019	1.036 (1.024-1.048)	<.0001
Rheumatic heart disease	1.129 (0.092-13.91)	0.8877	2.006 (0.762-5.285)	0.1061	2.385 (1.029-5.529)	0.0440	1.383 (0.698-2.742)	0.3329
Myocardial infarction	2.764 (0.000-36x10^4)	0.5274	2.191 (0.616-7.794)	0.1171	1.769 (0.974-3.210)	0.0591	1.727 (1.250-2.384)	0.0020
ED discharge rhythm is AF	0.486 (0.039-6.048)	0.3436	2.582 (1.089-6.121)	0.0369	1.682 (1.035-2.734)	0.0381	1.809 (1.291-2.534)	0.0015
Diabetes mellitus	0.539 (0.017-17.00)	0.5214	1.092 (0.512-2.329)	0.7632	1.579 (1.006-2.477)	0.0474	1.369 (1.036-1.808)	0.0290

* Includes Tanzania, Kenya, Mozambique, and Uganda; 193 subjects and 54 events.

†Includes India, Sudan, Senegal, Zambia, Cameroon, Nigeria, Egypt, and the Ukraine; 2246 subjects and 119 events.

‡ Includes Argentina, Brazil, Colombia, Ecuador, Venezuela, Chile, Russia, Latvia, Turkey, Iran, South Africa, Thailand and China; 2358 subjects and 163 events.

§ Includes Japan, South Korea, Singapore, Saudi Arabia, the United Arab Emirates, Poland, Slovakia, Hungary, the Czech Republic, Bulgaria, Australia, Spain, Italy, the Netherlands, Germany, Austria, the United Kingdom, Sweden, Ireland, Canada, Denmark and the United States of America; 4968 subjects and 328 events.

Table S4. Odds ratios for LVS-HARMED coefficients in a model that also includes medication use after emergency department discharge.

	β	Odds Ratio (95% CI)	P-value
Intercept	-1.117		0.2134
Left ventricular hypertrophy	0.377	1.458 (1.175- 1.809)	0.0010
Valvular heart disease	0.270	1.309 (0.994- 1.725)	0.0552
Smoking/other tobacco use	0.324	1.383 (1.096- 1.746)	0.0075
Height, per 3 cms	-0.070	0.932 (0.907- 0.959)	<.0001
Age, per 5 years	0.099	1.104 (1.064- 1.146)	<.0001
Rheumatic heart disease	0.480	1.616 (1.135- 2.300)	0.0091
Myocardial infarction	0.587	1.799 (1.403- 2.307)	<.0001
ED discharge rhythm is AF	0.501	1.650 (1.296- 2.101)	0.0001
Diabetes mellitus	0.242	1.273 (1.032- 1.572)	0.0256
Diuretic after ED	0.640	1.896 (1.555- 2.313)	<.0001
Calcium channel blocker (any) after ED	-0.031	0.970 (0.797- 1.180)	0.7551
Beta blocker after ED	0.094	1.099 (0.913- 1.323)	0.3110
Angiotensin Receptor blocker (ARB) after ED	-0.318	0.728 (0.556- 0.954)	0.0223
ACE-inhibitor after ED	0.042	1.043 (0.848- 1.282)	0.6842
Digoxin after ED	0.267	1.307 (1.066- 1.602)	0.0113

Figure S1. Calibration plot for the LVS-HARMED score in the RE-LY registry.

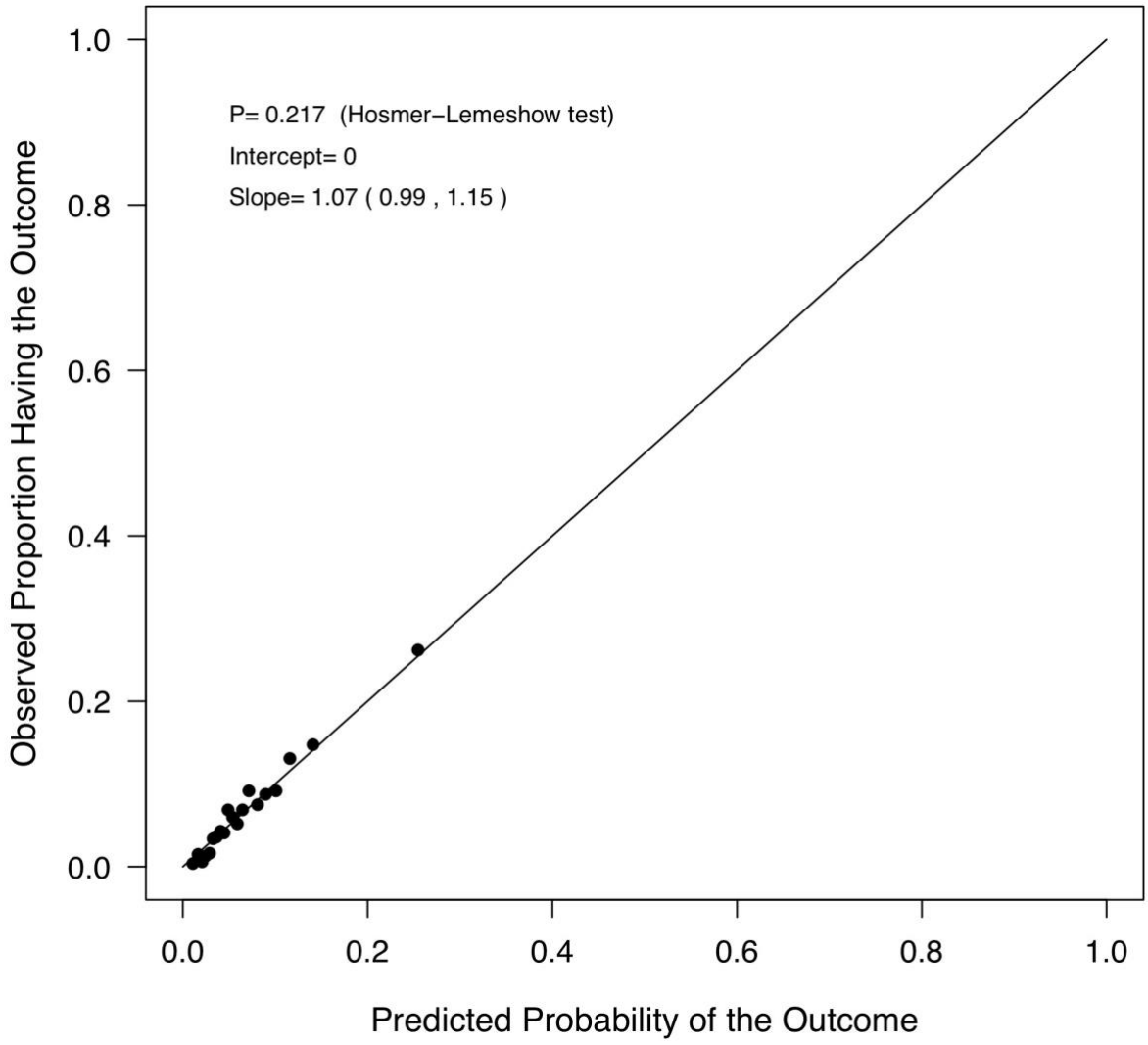
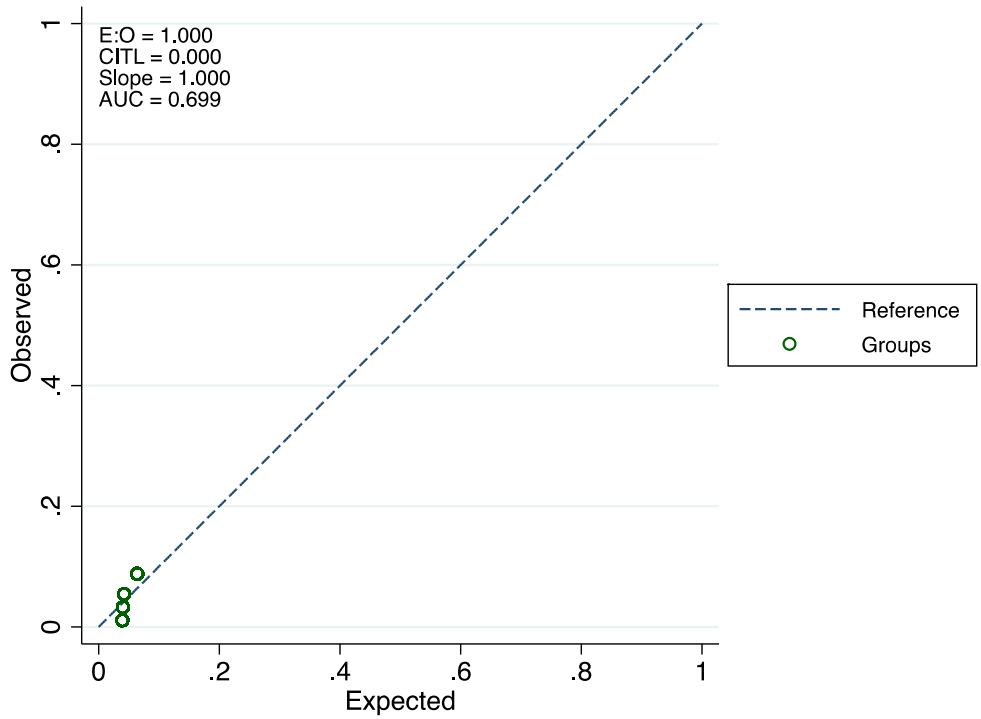


Figure S2. Calibration plot for the LVS-HARMED score in the Atrial Fibrillation and Flutter Outcomes & Risk Determination (AFFORD) study study.



E:O = Expected vs observed ratio
CITL = Calibration in the large
AUC= Area under the curve

Figure S3. Receiver operator characteristic (ROC) curve for the LVS-HARMED score in the full RE-LY registry.

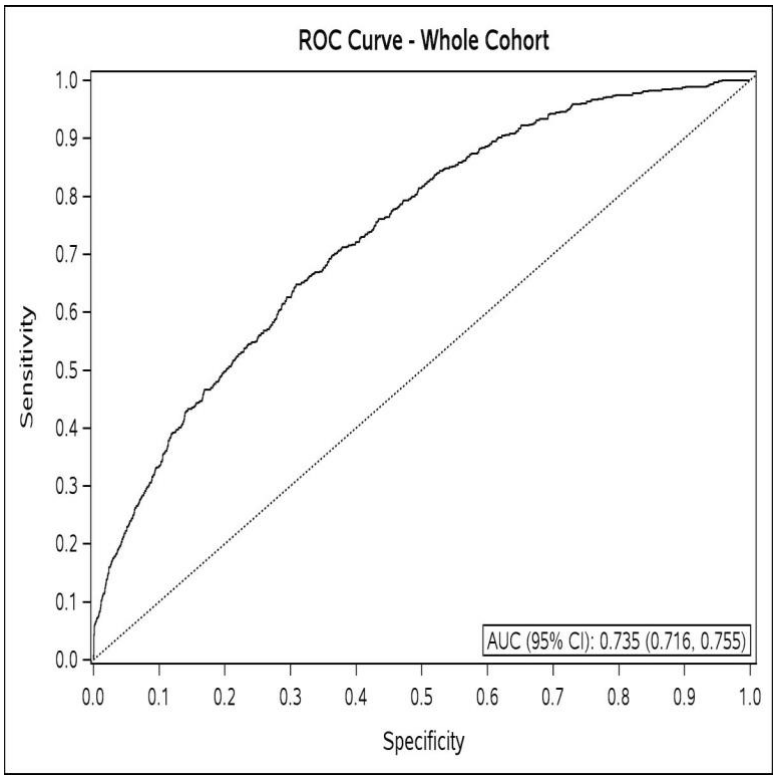


Figure S4. Receiver operator characteristic (ROC) curve for the LVS-HARMED score in low income countries.

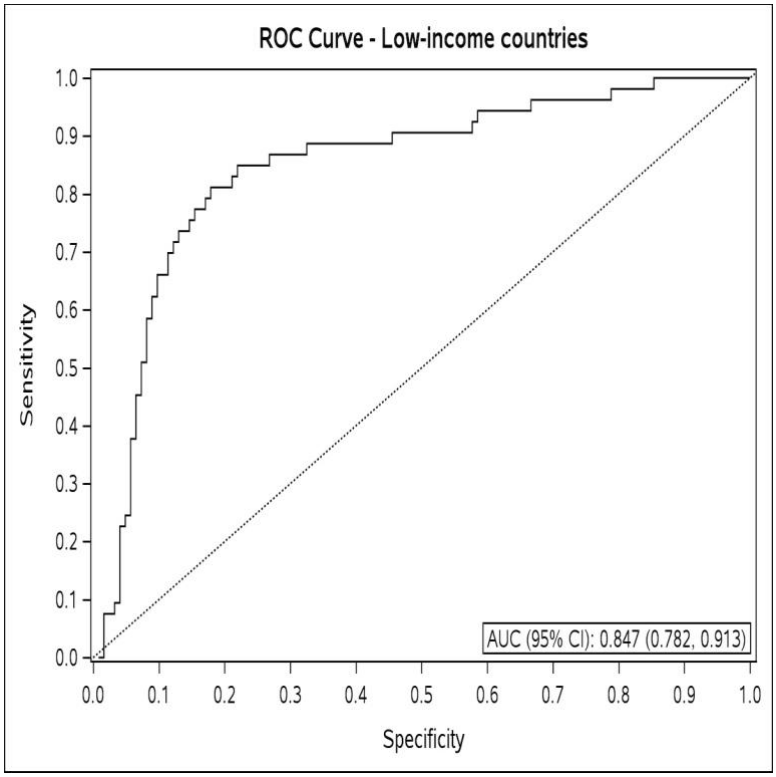


Figure S5. Receiver operator characteristic (ROC) curve for the LVS-HARMED score in lower-middle income countries.

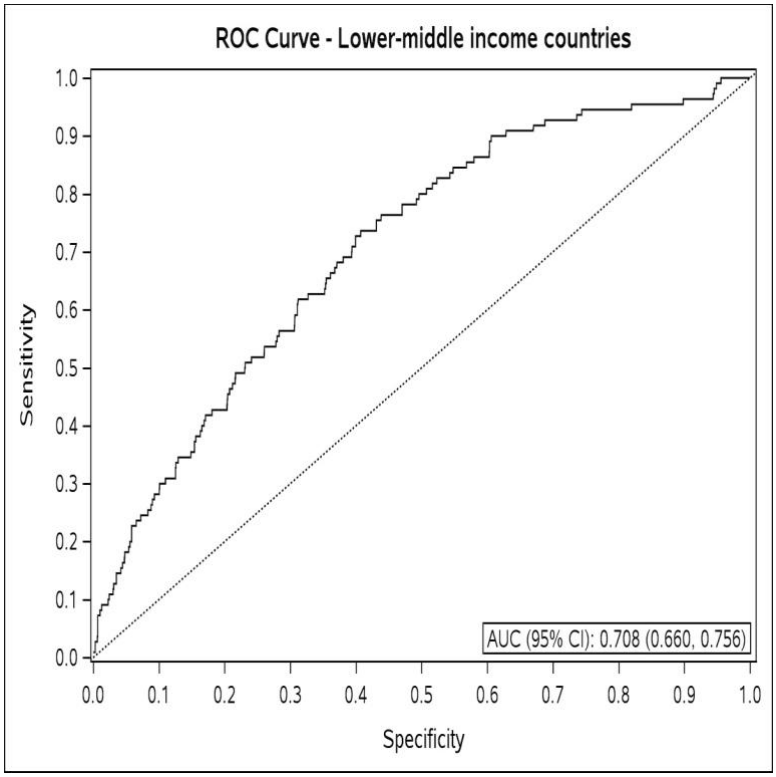


Figure S6. Receiver operator characteristic (ROC) curve for the LVS-HARMED score in upper-middle income countries.

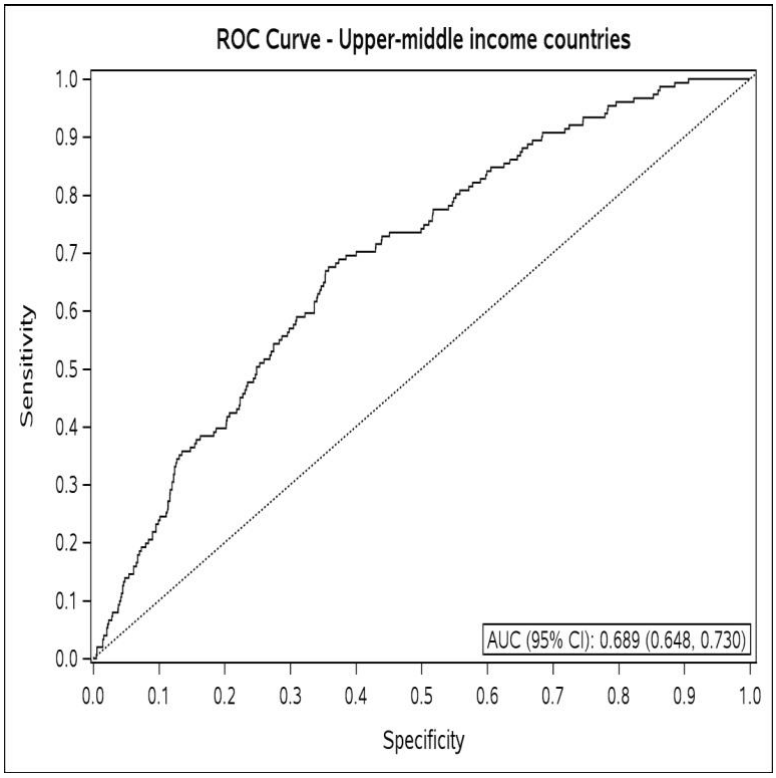


Figure S7. Receiver operator characteristic (ROC) curve for the LVS-HARMED score in high income countries.

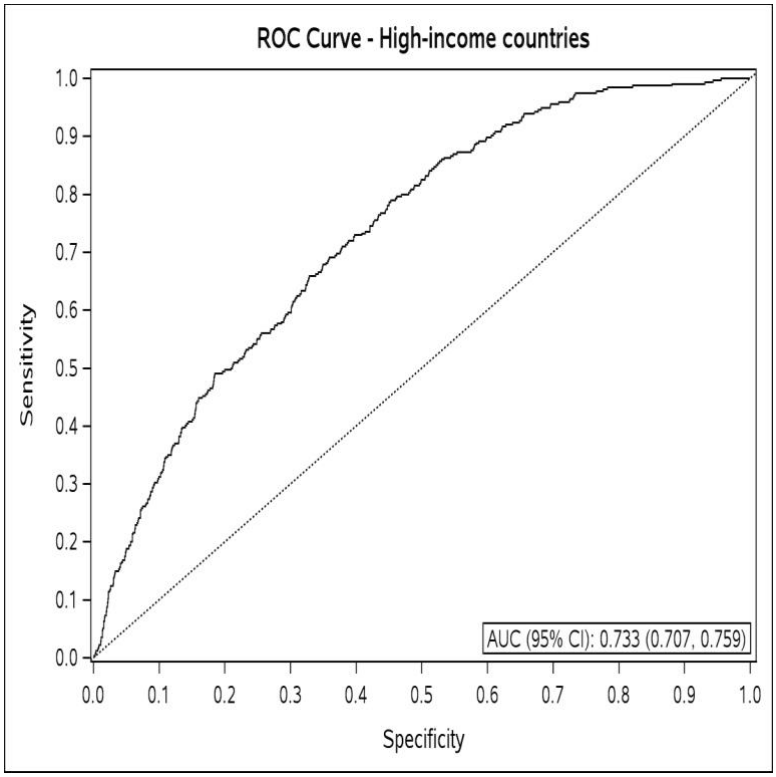
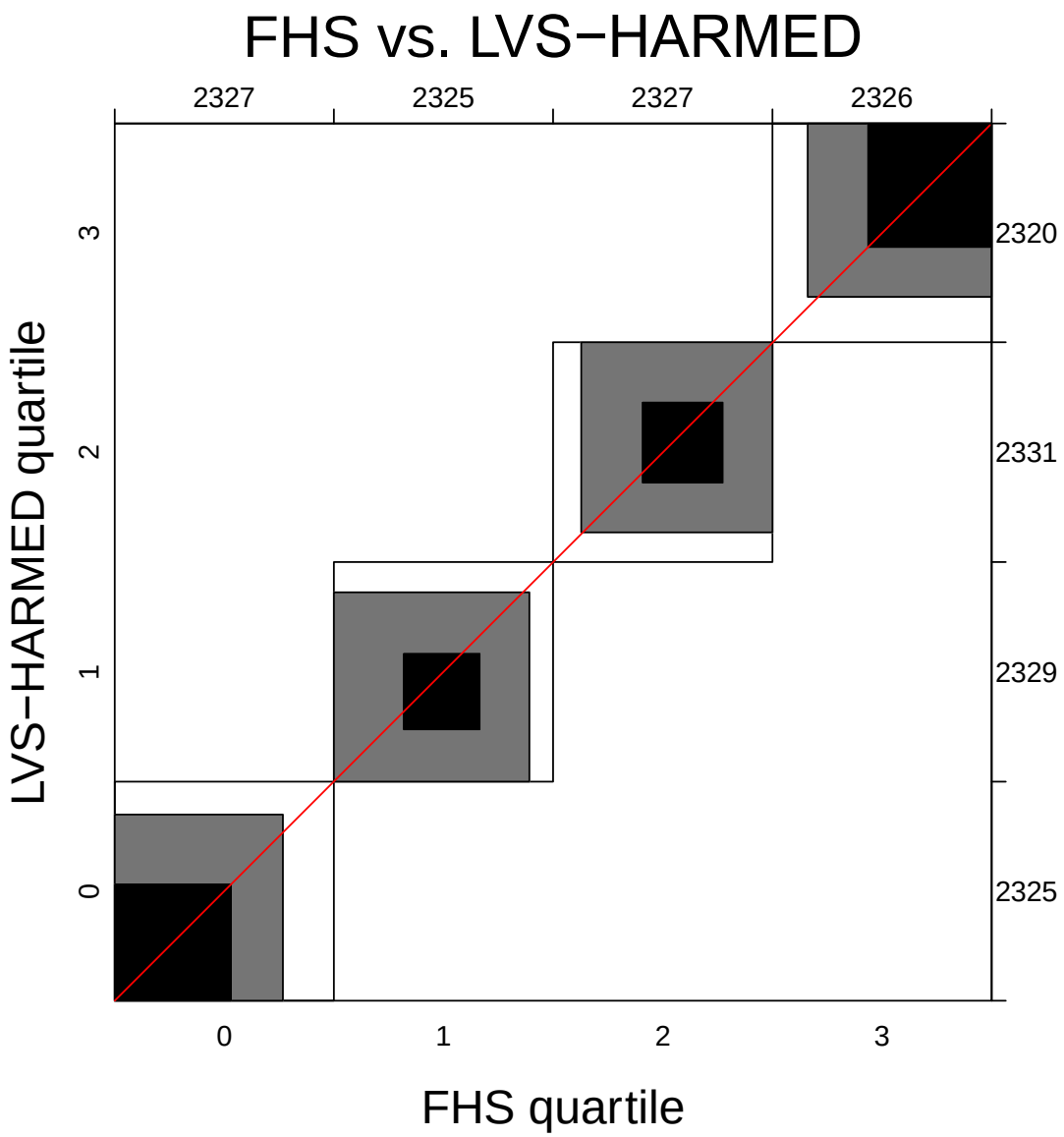


Figure S8. Agreement plot for the LVS-HARMED and FHS scores.



Bangdiwala statistics for the agreement between LVS-HARMED and FHS scores= 0.654

Black squares denote observed agreement, grey squares denote partial agreement and white squares denote the total within each quartile.

Figure S9. Calibration plot for the LVS-HARMED score in low income countries.

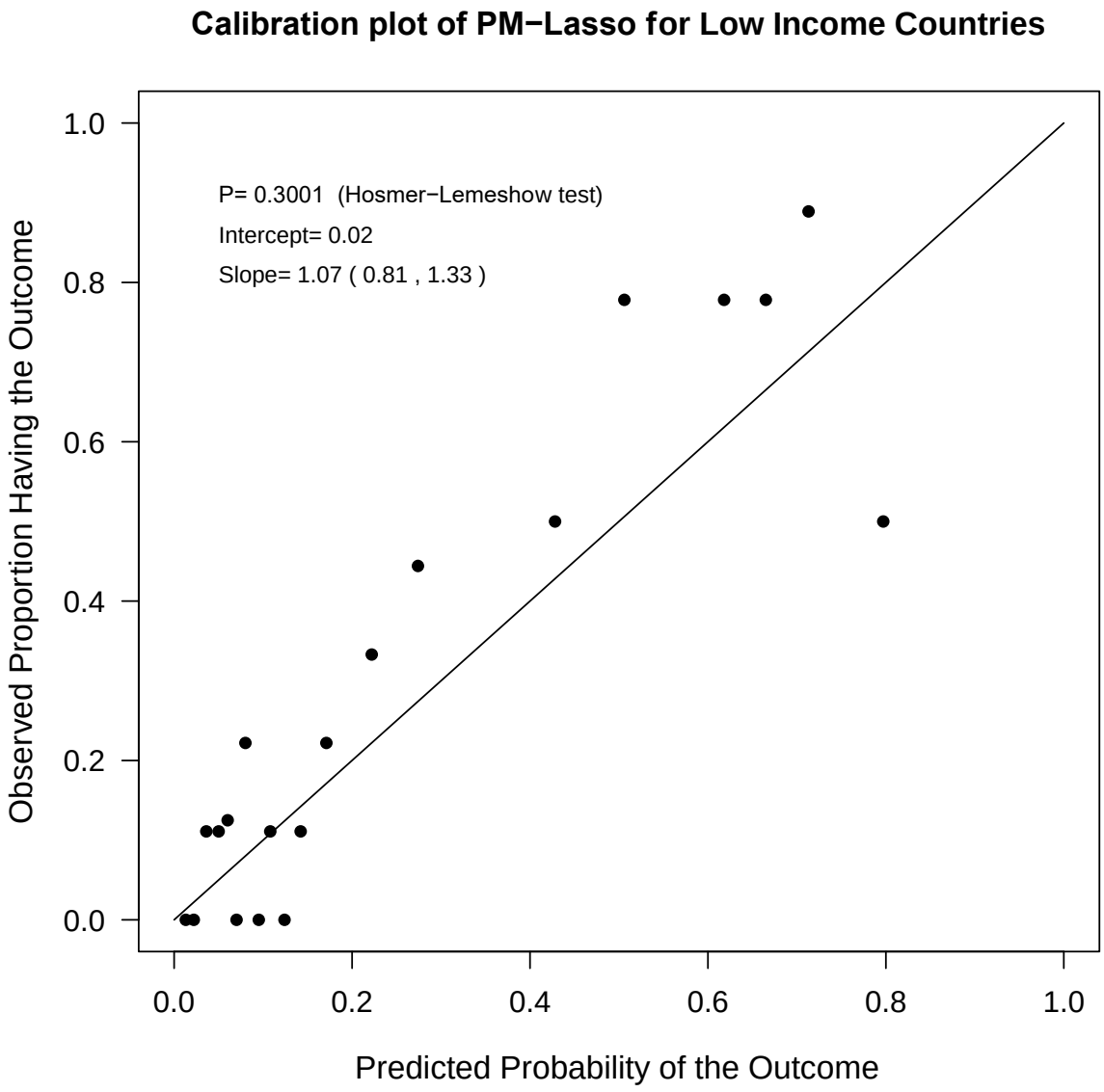


Figure S10. Calibration plot for the LVS-HARMED score in lower-middle income countries

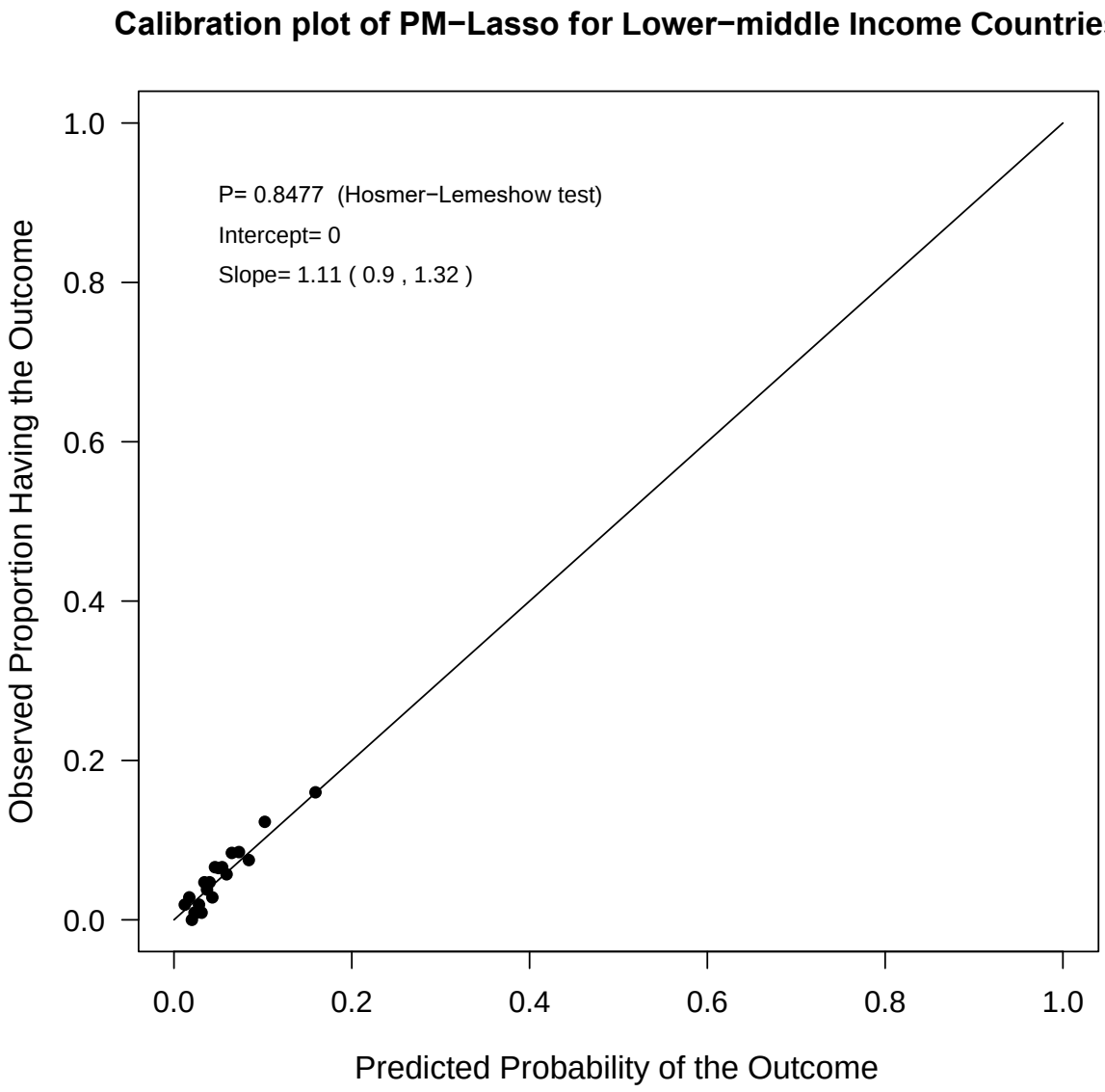


Figure S11. Calibration plot for the LVS-HARMED score in upper-middle income countries.

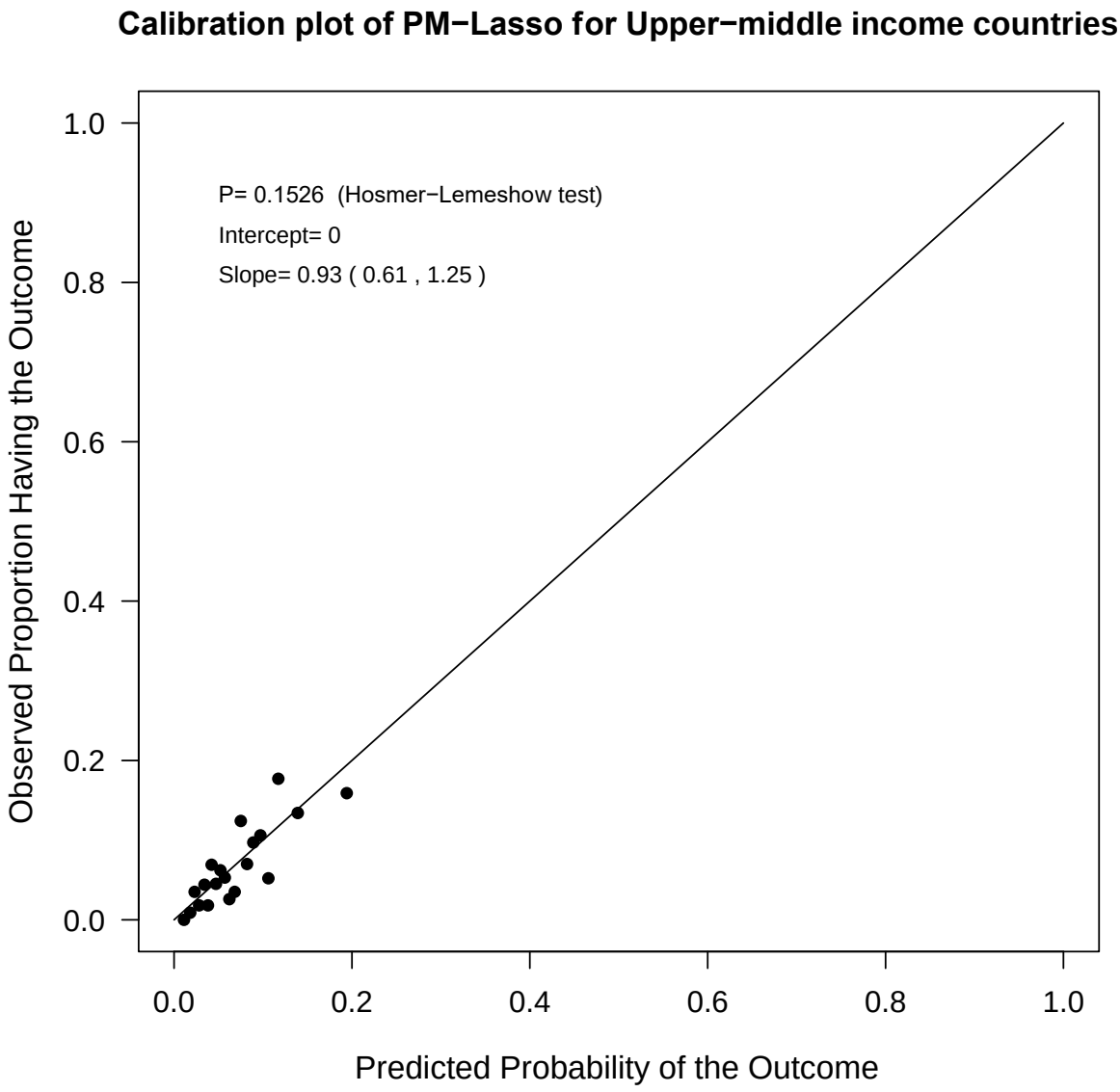


Figure S12. Calibration plot for the LVS-HARMED score in high income countries.