Supplemental Tables.

Supplemental Table 1: Missing transthoracic echocardiographic data.

Variable	# Missing	Non-missing	Total	% Missing
LVESVI	9	991	1000	0.9
LVEDVI	8	992	1000	0.8
LVEF	4	996	1000	0.4
LAVI	9	991	1000	0.9
RAVI	18	982	1000	1.8
LVMI	11	989	1000	1.1
AVA	3	997	1000	0.3
VTI$_{LVOT}$	8	992	1000	0.8
PASP	192	808	1000	19.2
VTI$_{RVOT}$	25	975	1000	2.5
RAP	14	986	1000	1.4
WMSI	10	990	1000	1
TRS	1	999	1000	0.1
MRS	0	1000	1000	0
LV Diastolic Function	62	938	1000	6.2

Abbreviations: LAVI = left atrial end-systolic volume index; RAVI = right atrial end-systolic volume index; MRS = severity of mitral regurgitation; PASP= Pulmonary artery systolic pressure; TRS = severity of tricuspid regurgitation; RAP = right atrial pressure; LVEDVI = left ventricular end-diastolic volume index; LVESVI = left ventricular end-systolic volume index; WMSI = wall motion score index; LVMI = left ventricular mass index; VTI $_{RVOT}$= right ventricular outflow tract velocity–time integral; VTI $_{LVOT}$ = left ventricular outflow tract velocity–time integral; LVEF = left ventricular ejection fraction; AVA = aortic valve area.

Supplemental Table 2: Summary of phenogroup assignments across 10 imputed datasets

Imputed Dataset	Phenogroup 1 N (%)	Phenogroup 2 N (%)	Phenogroup 3 N (%)	Phenogroup 4 N (%)
1	90 (9.0%)	337 (33.7%)	268 (26.8%)	305 (30.5%)
2	83 (8.3%)	319 (31.9%)	271 (27.1%)	327 (32.7%)
3	119 (11.9%)	238 (23.8%)	175 (17.5%)	468 (46.8%)
4	87 (8.7%)	243 (24.3%)	300 (30.0%)	370 (37.0%)
5	84 (8.4%)	265 (26.5%)	163 (16.3%)	488 (48.8%)
6	121 (12.1%)	238 (23.8%)	181 (18.1%)	460 (46.0%)
7	88 (8.8%)	335 (33.5%)	271 (27.1%)	306 (30.6%)
8	114 (11.4%)	238 (23.8%)	183 (18.3%)	465 (46.5%)
9	85 (8.5%)	315 (31.5%)	282 (28.2%)	318 (31.8%)
10	145 (14.5%)	75 (7.5%)	225 (22.5%)	555 (55.5%)
Consensus	85 (8.5%)	314 (31.4%)	205 (20.5%)	396 (39.6%)