Supplemental table 1. Baseline characteristics of discharged heart failure with reduced ejection fraction and chronic kidney patients with and without one-year total mortality (n=717)

| Variables | Mortality (n=153) | Alive (n=564) | P value | HR (95% CI) |
|-----------|-------------------|---------------|---------|-------------|
| **Demographics** |                   |               |         |             |
| Age       | 70.3 ± 12.1       | 66.7 ± 14.7   | 0.008   | 1.016 (1.004-1.028) |
| Men       | 98 (64.1%)        | 384 (68.1%)   | 0.422   | 0.873 (0.628-1.215) |
| Smoking   | 68 (44.4%)        | 269 (47.7%)   | 0.502   | 0.897 (0.652-1.233) |
| Alcoholism| 1 (0.7%)          | 14 (2.5%)     | 0.210   | 0.284 (0.040-2.031) |
| BMI       | 24.0 ± 4.9        | 25.5 ± 5.0    | 0.001   | 0.939 (0.904-0.975) |
| **Comorbidities** |                   |               |         |             |
| AF        | 48 (31.4%)        | 150 (26.6%)   | 0.302   | 1.197 (0.851-1.684) |
| HTN       | 49 (32.0%)        | 216 (38.3%)   | 0.156   | 0.782 (0.557-1.098) |
| DM        | 91 (59.5%)        | 279 (49.5%)   | 0.038   | 1.408 (1.019-1.944) |
| Dyslipidemia | 39 (25.5%)      | 136 (24.1%)   | 0.688   | 1.077 (0.749-1.550) |
| Old stroke| 22 (14.4%)        | 59 (10.5%)    | 0.201   | 1.343 (0.855-2.109) |
| Old MI    | 42 (27.5%)        | 153 (27.1%)   | 0.902   | 1.022 (0.717-1.458) |
| Advanced CKD | 63 (41.2%)      | 186 (33.0%)   | 0.043   | 1.395 (1.011-1.924) |
| PAOD      | 22 (14.4%)        | 47 (8.3%)     | 0.016   | 1.741 (1.108-2.735) |
| COPD      | 24 (15.7%)        | 53 (9.4%)     | 0.031   | 1.618       |
| Condition                        | Control Group | Disease Group | p-value | OR (95% CI)   |
|---------------------------------|---------------|---------------|---------|---------------|
| OSA                             | 3 (2.0%)      | 16 (2.8%)     | 0.526   | 0.691 (0.220-2.167) |
| Thyroid disorder                | 15 (9.8%)     | 23 (4.1%)     | 0.007   | 2.090 (1.226-3.561) |
| Cancer                          | 3 (2.0%)      | 18 (3.2%)     | 0.480   | 0.662 (0.211-2.076) |
| Hepatitis                       | 10 (6.5%)     | 37 (6.6%)     | 0.955   | 0.982 (0.517-1.864) |
| Depression                      | 4 (2.6%)      | 11 (2.0%)     | 0.631   | 1.275 (0.472-3.442) |
| Previous valvular surgery       | 15 (9.8%)     | 24 (4.3%)     | 0.009   | 2.043 (1.199-3.482) |
| HF type                          |               |               | 0.359   | 1.160 (0.845-1.595) |
| New-onset HF                    | 71 (46.4%)    | 239 (42.4%)   |         |               |
| Decompensated HF                | 82 (53.6%)    | 325 (57.6%)   |         |               |
| HF etiology                     |               |               | 0.774   | 1.048 (0.763-1.439) |
| ICM                             | 73 (47.7%)    | 260 (46.1%)   |         |               |
| NICM                            | 80 (52.3%)    | 304 (53.9%)   |         |               |
| **Echo data***                  |               |               |         |               |
| LA size (mm)                    | 46.5 ± 8.9    | 46.1 ± 8.7    | 0.571   | 1.005 (0.987-1.024) |
| LVEF (%)                        | 28.2 ± 8.3    | 29.4 ± 9.0    | 0.134   | 0.986 (0.968-1.004) |
| **Laboratory data***            |               |               |         |               |
| BUN                             | 49.3 ± 28.4   | 38.7 ± 24.9   | <0.001  | 1.010 (1.006-1.015) |
| Cr                              | 2.8 ± 2.2     | 2.5 ± 2.2     | 0.110   | 1.153 (0.989-1.121) |
| eGFR                            | 32.8 ± 16.4   | 36.6 ± 16.3   | 0.008   | 0.987 (0.978-0.997) |
| Na                              | 136.5 ± 5.1   | 137.3 ± 4.8   | 0.074   | 0.972          |
K & 4.2 ± 0.7 & 4.1 ± 0.7 & 0.173 & 1.165 (0.935-1.451) \\
Hgb & 11.8 ± 2.4 & 12.3 ± 2.5 & 0.018 & 0.922 (0.862-0.986) \\

**Vital signs and HF status at discharge**

| Metric | Discharge Value | Reference Value | p-Value | OR (95% CI) |
|--------|----------------|-----------------|---------|-------------|
| HR     | 80.7 ± 15.2    | 79.3 ± 14.1     | 0.200   | 1.007 (0.996-1.018) |
| SBP    | 119.3 ± 20.2   | 122.4 ± 18.6    | 0.060   | 0.992 (0.983-1.000) |
| DBP    | 68.1 ± 12.8    | 72.0 ± 13.1     | 0.002   | 0.980 (0.967-0.993) |

| HF, NYHA Functional class at discharge | | |
|--------------------------------------|--|--|---|
| I + II | 90 (58.8%) | 402 (71.2%) |
| III + IV | 63 (41.2%) | 162 (28.7%) |

**Medication**

| Medication     | Discharge Value | Reference Value | p-Value | OR (95% CI) |
|----------------|----------------|-----------------|---------|-------------|
| ACEI/ARB       | 67 (43.8%)     | 311 (55.1%)     | 0.010   | 0.658 (0.478-0.905) |
| Beta-blocker   | 41 (46.4%)     | 346 (61.3%)     | 0.001   | 0.750 (0.418-0.790) |
| Aldactone/eplerenone | 88 (41.1%) | 513 (48.4%) | 0.093   | 0.750 (0.536-1.049) |
| Diuretics      | 105 (68.6%)    | 423 (75.0%)     | 0.099   | 0.750 (0.533-1.055) |
| CCB            | 20 (13.1%)     | 87 (15.4%)      | 0.433   | 0.829 (0.518-1.326) |
| Digoxin        | 49 (32.0%)     | 122 (21.6%)     | 0.012   | 1.546 (1.101-2.172) |
| Antiplatelet   | 91 (59.5%)     | 347 (61.5%)     | 0.733   | 0.945 (0.685-1.305) |
| Anticoagulation | 31 (20.3%) | 122 (21.6%) | 0.664   | 0.916 (0.618-1.359) |
|                          | 27 (17.6%) | 87 (15.4%) | 0.454 | 1.172 (0.773-1.776) |
|--------------------------|------------|------------|-------|---------------------|
| **Number of GDM prescriptions!** | 1.2 ± 0.9  | 1.6 ± 0.9  | <0.001 | 0.675 (0.564-0.809) |
| 0                        | 33 (21.6%) | 70 (12.4%) |       |                     |
| 1                        | 66 (43.1%) | 185 (32.8%)|       |                     |
| 2                        | 39 (25.5%) | 229 (40.6%)|       |                     |
| 3                        | 15 (9.8%)  | 80 (14.2%) |       |                     |
| **Number of GDM prescriptions ≥ 2** | 54 (35.3%) | 309 (54.8%)| <0.001 | 0.478 (0.343-0.666) |

Data are expressed as means ± SD or % (n).

ACEIs/ARBs = angiotensin-converting enzyme inhibitors/angiotensin-receptor blockers; AF = atrial fibrillation; BMI = body mass index; BUN = blood urine nitrogen; CAD = coronary artery disease; CCB = calcium channel blocker; CKD = chronic kidney disease; COPD = chronic obstructive pulmonary disease; Cr = creatinine; CV = cardiovascular; DBP = diastolic blood pressure; DM = diabetes mellitus; Echo = echocardiography; GDM = guideline-directed medication; HF = heart failure; Hgb = hemoglobin; HR = heart rate; HTN = hypertension; ICM = ischemic cardiomyopathy; K = potassium; LA = left atrium; LVEF = left ventricular ejection fraction; MI = myocardial infarction; Na = sodium; NICM = non-ischemic cardiomyopathy; OSA = obstructive sleep apnea; PAOD = peripheral artery occlusion disease; SBP = systolic blood pressure; SHF = systolic heart failure.

* Data first collected during the index hospitalization.
### Supplemental table 2. Baseline characteristics of discharged heart failure with reduced ejection fraction and chronic kidney patients with and without one-year CV mortality (n=717)

| Variables               | Mortality (n=100) | Alive (n=617) | P value | HR (95% CI) |
|-------------------------|-------------------|--------------|---------|-------------|
| **Demographics**        |                   |              |         |             |
| Age                     | 69.5 ± 12.4       | 67.1 ± 14.5  | 0.106   | 1.012 (0.997-1.026) |
| Men                     | 69 (69.0%)        | 413 (66.9%)  | 0.680   | 1.093 (0.716-1.670) |
| Smoking                 | 47 (47.0%)        | 290 (47.0%)  | 0.983   | 0.996 (0.672-1.475) |
| Alcoholism              | 1 (1.0%)          | 14 (2.3%)    | 0.414   | 0.440 (0.061-3.155) |
| BMI                     | 24.7 ± 5.4        | 25.2 ± 5.0   | 0.264   | 0.976 (0.935-1.019) |
| **Comorbidity**         |                   |              |         |             |
| AF                      | 29 (29.0%)        | 169 (27.4%)  | 0.767   | 1.068 (0.693-1.644) |
| HTN                     | 25 (25.0%)        | 240 (38.9%)  | 0.011   | 0.554 (0.352-0.871) |
| DM                      | 61 (61.0%)        | 309 (50.1%)  | 0.051   | 1.493 (0.999-2.231) |
| Dyslipidemia            | 25 (25%)          | 150 (24.3%)  | 0.841   | 1.048 (0.666-1.647) |
| Old stroke              | 11 (11.0%)        | 70 (11.3%)   | 0.964   | 0.986 (0.527-1.844) |
| Old MI                  | 25 (25.0%)        | 170 (27.6%)  | 0.654   | 0.902 (0.573-1.418) |
| Advanced CKD            | 39 (39.0%)        | 210 (34.0%)  | 0.242   | 1.271 (0.850-1.899) |
| PAOD                    | 15 (15.0%)        | 54 (8.8%)    | 0.033   | 1.818 (1.050-3.148) |
| COPD                    | 12 (12.0%)        | 65 (10.5%)   | 0.585   | 1.183 (0.647-2.162) |
| OSA                     | 3 (3.0%)          | 16 (2.6%)    | 0.906   | 0.933 (0.296-2.943) |
| Thyroid disorder        | 10 (10.0%)        | 28 (4.5%)    | 0.025   | 2.110 (1.098-4.056) |
| Cancer                  | 1 (1.0%)          | 20 (3.2%)    | 0.278   | 0.336 (0.047-2.411) |
| Hepatitis               | 5 (5.0%)          | 42 (6.8%)    | 0.509   | 0.739 (0.301-1.816) |
| Depression              | 3 (3.0%)          | 12 (1.9%)    | 0.515   | 1.464 (0.464-4.619) |
| Previous valvular surgery | 11 (11.0%) | 28 (4.5%)    | 0.009   | 2.294 (1.226-4.292) |
| HF type                 |                   |              |         |             |
| New-onset HF            | 47 (47.0%)        | 263 (42.6%)  |         |             |
| Decompensated HF        | 53 (53.0%)        | 354 (57.4%)  |         |             |
| HF etiology             |                   |              |         |             |
| ICM                     | 49 (49.0%)        | 284 (46.0%)  |         |             |
| NICM                    | 51 (51.0%)        | 333 (54.0%)  |         |             |
### Echo data*

|                | LA size (mm) | LVEF (%) |
|----------------|-------------|----------|
|                | 47.0 ± 8.7  | 27.6 ± 8.1|
|                | 46.1 ± 8.8  | 29.4 ± 9.0|
|                | 0.325       | 0.057    |
|                | 1.011 (0.989-1.035) | 0.978 (0.956-1.001) |

### Laboratory data*

|                |                |                |
|----------------|----------------|----------------|
|                | BUN            | Cr             |
|                | 47.5 ± 26.8    | 2.6 ± 2.1      |
|                | 39.9 ± 25.8    | 2.6 ± 2.2      |
|                | 0.004          | 0.645          |
|                | 1.009 (1.003-1.015) | 1.020 (0.936-1.112) |
|                | Cr             | eGFR           |
|                | 34.9 ± 16.3    | 35.9 ± 16.4    |
|                | 0.384          | 0.995          |
|                | 0.983-1.007    |                |
|                | Na             | K              |
|                | 136.3 ± 5.5    | 4.2 ± 0.7      |
|                | 137.3 ± 4.8    | 4.1 ± 0.7      |
|                | 0.050          | 0.425          |
|                | 0.964 (0.929-1.000) | 1.118 (0.850-1.471) |
|                | Hgb            |                |
|                | 11.9 ± 2.4     | 12.3 ± 2.5     |
|                | 0.191          | 0.947          |
|                | 0.872-1.028    |                |

### Vital signs and HF status at discharge

|                |                |                |
|----------------|----------------|----------------|
|                | HR             | SBP            |
|                | 81.1 ± 14.2    | 117.9 ± 21.0   |
|                | 79.3 ± 14.4    | 122.4 ± 18.6   |
|                | 0.184          | 0.025          |
|                | 1.009 (0.996-1.023) | 0.987 (0.977-0.998) |
|                | DBP            |                |
|                | 67.2 ± 13.1    | 71.8 ± 13.0    |
|                | 0.002          | 0.974          |
|                | 0.959-0.990    |                |
|                | NYHA functional class |                |
|                | at discharge   |                |
|                | I + II         | III + IV       |
|                | 59 (59.0%)     | 433 (70.2%)    |
|                | 41 (41.0%)     | 184 (29.8%)    |

### Medication

|                |                |                |
|----------------|----------------|----------------|
|                | ACEI/ARB       | Beta-blocker   |
|                | 45 (45.0%)     | 50 (50.0%)     |
|                | 333 (54.0%)    | 367 (59.5%)    |
|                | 0.069          | 0.044          |
|                | 0.694 (0.468-1.029) | 0.668 (0.451-0.988) |
|                | Aldactone/eplerenone |         |
|                | 35 (35.0%)     | 242 (39.2%)    |
|                | 0.315          | 0.810          |
|                | 0.537-1.222    |                |
|                | Diuretics      |                |
|                | 26 (26.0%)     | 163 (26.4%)    |
|                | 0.918          | 0.977          |
|                | 0.625-1.527    |                |
|                | CCB            |                |
|                | 13 (13.0%)     | 94 (15.2%)     |
|                | 0.515          | 0.824          |
|                | 0.460-1.476    |                |
|                | Digoxin        |                |
|                | 34 (34.0%)     | 137 (22.2%)    |
|                | 0.014          | 1.678          |
|                | 1.109-2.538    |                |
|                | Antiplatelet   |                |
|                | 63 (63.0%)     | 375 (60.8%)    |
|                | 0.657          | 1.096          |
|                | 0.731-1.645    |                |
|                | Anticoagulation|                |
|                | 21 (21.0%)     | 132 (21.4%)    |
|                | 0.866          | 0.959          |
|                | 0.593-1.552    |                |
|                | Anti-arrhythmia|                |
|                | 18 (18.0%)     | 96 (15.6%)     |
|                | 0.484          | 1.200          |
|                | 0.720-1.998    |                |
|                | Number of GDM  |                |
|                | 1.3 ± 0.9      | 1.5 ± 0.9      |
|                | 0.007          | 0.737          |
|                | 0.591-0.920    |                |

### Number of GDM prescriptions

|                |                |
|----------------|----------------|
|                | 0              |
|                | 21 (21.0%)     |
|                | 2               |
|                | 29 (29.0%)     | 239 (38.7%)    |
|                | 1               |
|                | 39 (39.0%)     | 212 (34.4%)    |
|                | 2               |
|                | 139 (139.0%)   |
Number of GDM prescriptions ≥ 2

|        | 3 | 11 (11.0%) | 84 (13.6%) |
|--------|---|------------|------------|
| Mean   |   | 40 (40.0%) | 323 (52.4%)|
| SD     |   |            |            |
| 0.010  | 0.589 (0.395-0.879) |

Data are expressed as means ± SD or % (n).

ACEIs/ARBs= angiotensin-converting enzyme inhibitors/angiotensin-receptor blockers; AF= atrial fibrillation; BMI= body mass index; BUN= blood urine nitrogen; CAD= coronary artery disease; CCB= calcium channel blocker; CKD= chronic kidney disease; COPD= chronic obstructive pulmonary disease; Cr= creatinine; CV= cardiovascular; DBP= diastolic blood pressure; DM= diabetes mellitus; Echo= echocardiography; GDM= guideline-directed medication; HF= heart failure; Hgb= hemoglobin; HR= heart rate; HTN= hypertension; ICM= ischemic cardiomyopathy; K= potassium; LA= left atrium; LVEF= left ventricular ejection fraction; MI= myocardial infarction; Na= sodium; NICM= non-ischemic cardiomyopathy; OSA= obstructive sleep apnea; PAOD= peripheral artery occlusion disease; SBP= systolic blood pressure; SHF= systolic heart failure.

* Data first collected during the index hospitalization.