Newly diagnosed diabetes and outcomes after acute myocardial infarction in young adults
Supplementary material

**e Appendix 1 Patient data collected at baseline**

Patient characteristics included: socio-demographics, AMI treatment, clinical, psychosocial and behavioral, and self-reported socioeconomic factors. Use of glucose-lowering medications was assessed through chart review at baseline admission, discharge, and 1-month follow-up. Random blood glucose levels were collected on admission, and peak glucose levels were recorded during hospital stay. HbA1c was extracted from medical records at baseline admission and assessed in all US participants at 1-month with blood samples analyzed at Quest Diagnostics, San Juan Capistrano, CA.

Socio-demographic variables were age, sex, race, Hispanic ethnicity, marital status, education, employment status, and annual household income. Cardiometabolic characteristics were assessed through review of medical records and included body mass index $\geq 30\text{kg/m}^2$, random blood glucose (initial and peak), blood pressure, low-density lipoprotein, and triglycerides, cardiovascular disease (CVD) risk factors; other comorbidities included family history of CVD, hypertension, hypercholesterolemia, smoking 30 days before admission, sleep apnea, renal dysfunction, heart failure, stroke, depression, alcohol abuse, prior AMI, and prior primary percutaneous coronary intervention.

AMI treatments assessed at baseline were coronary revascularization (percutaneous coronary intervention/coronary artery bypass grafting), diagnostic angiography, aspirin at arrival, reperfusion therapies, and discharge medications. Non-pharmacological interventions prescribed at discharge were obtained from medical record and included diet counseling, activity guidelines, out-patient cardiac rehab, diabetes education, weight management counseling, smoking cessation counseling and participated in in-patient cardiac rehab program. Clinical characteristics of AMI included coronary occlusion $\geq 50\%$ as documented by coronary angiography, AMI symptom
Supplementary material

presentation, ST-elevation MI, initial systolic heart rate, peak troponin, Global Registry of Acute Coronary Events risk score, left ventricular ejection fraction <40%, and whether the patient presented to hospital >6 hours after symptom onset. Other clinical characteristics included peak creatinine levels, type of diabetes, self-report treatment for diabetes, and diabetic complications.

Psychosocial and behavioral characteristics assessed at baseline included social support, stress, and depressive symptoms using the 7-item ENRICHD Social Support Instrument, [1] the 14-item Perceived Stress Scale [2] and the 9-item version of the Patient Health Questionnaire, [3] respectively. Physical activity was assessed with the Behavioral Risk Factor Surveillance Survey Physical Activity Instrument. [4] These questionnaires have well-documented reliability and validity. [2, 3, 4]

Self-reported socioeconomic status collected at baseline included health insurance, self-report of difficulty obtaining medical care when needed, medical costs posing an economic burden over the past year, avoiding health care services because of cost, and frequency of not taking prescribed medication because of cost. The above questions are validated measures of financial barriers to health care in AMI patients and were prognostic of worse outcomes. [5] (socio-demographics, AMI treatment, clinical, psychosocial and behavioral and self-reported socioeconomic factors)

eAppendix 2 Details of LME model fitting to explore the association between NDD and health status 1-year post AMI

We constructed a series of linear mixed effects (LME) regression models, with and without adjustment for baseline covariates (socio-demographics, AMI treatment, clinical, psychosocial and behavioral and self-reported socioeconomic factors) to explore the association between NDD and the repeated measurements of health status during the 12 months after AMI, using patients
Supplementary material

with established diabetes as a reference group. For each health status outcome, a separate LME model was fit. The repeated measurements of health status at baseline, 1 month and 12 months were the response variables for each model. The fixed effects in LME models included a dummy variable of diabetes status (NDD vs. established diabetes), two dummy variables of time since baseline (baseline to 1 month and baseline to 12 months), and terms of interactions between diabetes status and time points. Individual-specific random-effects terms were included for intercept and time (to account for the within-person effect of repeated health status measures and the within-person change over time). A follow-up set of models was fit to compare NDD with those without diabetes.

eAppendix 3 Missing data and additional analyses

To ensure that we evaluated a representative cohort of AMI patients with diabetes by accounting for missing-not-at-random, we performed a sensitivity analysis to examine baseline characteristics of patients with diabetes lost to or unavailable for follow-up at 12-months with those who had follow-up data (Online Table 1). Similar baseline characteristics comparisons were performed between patients with and without HbA1c values because we implicitly assumed that if an HbA1c was missing, then the unmeasured value was below the threshold for diabetes diagnosis (Online Table 2). Subgroup analyses were performed to explore the associations of NDD subgroups (HbA1c <8% and HbA1c ≥8%) with health status and clinical outcomes (Online Tables 3, 4, 5). Additional analyses were conducted to assess differences between diabetes groups in self-reported weight changes and whether adoption of weight control led to weight loss by the end of 12-months follow-up. Missing covariates (<5%, except for HbA1c, type of diabetes, self-report treatment for diabetes, and diabetic complications) were imputed to the most
Supplementary material

common category for categorical variables and the median for continuous variables. The use of LME and mixed-effects logistic regression models were sufficient to account for missing responses that are missing-at-random (assuming that the missing observations depend on observed variables but not unobserved variables). All analyses were performed with SAS 9.4 (SAS Institute Inc, Cary, NC), and statistical significance was defined as p<0.05 for 2-sided tests. Because of the exploratory nature of this observational study, we did not apply multiplicity correction on an overall statistical significance level to obtain a significance level per test.

eAppendix 4 Summary of baseline characteristics differences between diabetic patients with and without 12-month health status outcomes data

Baseline characteristics of patients with and without follow-up did not differ significantly in age, gender, CVD risk factors, AMI clinical characteristics, AMI treatment, psychosocial and behavioral factors or self-reported socioeconomic status. The remaining baseline characteristics differed significantly between the 2 groups.
Supplementary material

FIGURE LEGENDS:

Supplementary Figure 1: Prevalence of newly diagnosed diabetes in young adults admitted to hospital with AMI

Supplementary Figure 2: Violin plot of HbA1c level distribution for newly diagnosed diabetes

Supplementary Figure 3: Trends of disease-specific and non-disease-specific health status outcomes recovery after AMI in young adults, stratified by diabetes status
Supplementary Table 1: Comparison of baseline characteristics between diabetic patients with and without 12-month health status outcomes data

| Characteristics         | Missing Health Status Outcomes (N=274, 18.4%) | Not Missing Health Status Outcomes (N=1219, 81.6%) | P-value |
|-------------------------|-----------------------------------------------|-----------------------------------------------------|---------|
| **SOCIO-DEMOGRAPHICS**  |                                               |                                                    |         |
| Age, year (Median, IQR) | 48.0 (9.00)                                   | 49.0 (8.00)                                         | 0.237   |
| Female (%)              | 191 (69.9%)                                   | 888 (72.8%)                                         | 0.347   |
| Race                    |                                               |                                                    | 0.036   |
| White                   | 184 (67.4%)                                   | 909 (74.5%)                                         |         |
| Black                   | 64 (23.4%)                                    | 238 (19.5%)                                         |         |
| Others                  | 25 (9.2%)                                     | 73 (5.9%)                                           |         |
| Hispanic (Yes/No)       | 32 (11.7%)                                    | 96 (7.9%)                                           | 0.039   |
| Marital Status          |                                               |                                                    | 0.303   |
| With Partner (%)        | 133 (48.7%)                                   | 655 (53.7%)                                         |         |
| Without Partner (%)     | 138 (50.6%)                                   | 554 (45.4%)                                         |         |
| Education Status        |                                               |                                                    | 0.003   |
| Less than high school   | 15 (5.6%)                                     | 39 (3.2%)                                           |         |
| Some high school        | 134 (50.0%)                                   | 499 (41.5%)                                         |         |
| More than high school   | 119 (44.4%)                                   | 665 (55.3%)                                         |         |
| Employment Status       |                                               |                                                    | <0.0001 |
| Working full time       | 95 (34.8%)                                    | 561 (45.9%)                                         |         |
| Working part-time       | 21 (7.7%)                                     | 133 (10.9%)                                         |         |
| Not working             | 157 (57.5%)                                   | 526 (43.1%)                                         |         |
## Supplementary material

### Household income

| Income Level | Count (%) | Total (%) |
|--------------|-----------|-----------|
| <$30,000     | 147 (54.2%) | 599 (49.1%) |
| $30,000-$69,999 | 64 (23.6%) | 337 (27.6%) |
| ≥$70,000     | 60 (22.1%) | 284 (23.3%) |

### CVD RISK FACTORS

| Risk Factor                        | Count (%) | Total (%) | p-value |
|------------------------------------|-----------|-----------|---------|
| Family history of CVD              | 185 (68.3%) | 925 (75.8%) | 0.029   |
| History of hypertension            | 214 (78.4%) | 907 (74.3%) | 0.163   |
| History of hypercholesterolemia    | 253 (92.7%) | 1101 (90.3%) | 0.212   |
| Smoking within last 30 days        | 170 (62.3%) | 674 (55.3%) | 0.036   |
| Sleep apnea                        | 26 (9.6%) | 86 (7.1%) | 0.158   |
| Body mass index >30 kg/m²          | 162 (59.8%) | 780 (63.9%) | 0.199   |

### OTHER COMORBIDITIES

| Comorbidity                      | Count (%) | Total (%) | p-value |
|----------------------------------|-----------|-----------|---------|
| History of renal dysfunction     | 56 (20.6%) | 163 (13.4%) | 0.003   |
| History of heart failure         | 41 (15.0%) | 70 (5.7%) | <0.0001 |
| History of prior stroke/TIA      | 25 (9.2%) | 67 (5.5%) | 0.023   |
| History of depression            | 127 (46.5%) | 540 (44.3%) | 0.498   |
| History of alcohol abuse         | 18 (6.6%) | 61 (5.0%) | 0.292   |
| Prior MI                          | 72 (26.4%) | 229 (18.8%) | 0.005   |

### AMI TREATMENT DURING HOSPITALIZATION

| Treatment                      | Count (%) | Total (%) | p-value |
|--------------------------------|-----------|-----------|---------|
| Diagnostic angiography         | 253 (92.7%) | 1159 (95.0%) | 0.125   |
| Aspirin at arrival             | 263 (98.9%) | 1155 (97.1%) | 0.094   |
| Reperfusion                    |           |           | 0.913   |
| Fibrinolytic therapy           | 14 (5.7%) | 58 (5.1%) |         |
## Supplementary material

|                          | Study 1 | Study 2 | P-value |
|--------------------------|---------|---------|---------|
| **Primary angioplasty**  | 124 (50.4%) | 569 (50.0%) |         |
| **Discharge medications**|         |         |         |
| Aspirin at discharge     | 260 (97.0%) | 1156 (97.7%) | 0.485   |
| Statin prescribed        | 255 (95.9%) | 1130 (94.9%) | 0.502   |
| Beta-blocker prescribed  | 246 (95.4%) | 1118 (97.1%) | 0.141   |
| ACEI or ARB prescribed   | 183 (74.7%) | 855 (82.1%) | 0.585   |

### CLINICAL CHARACTERISTICS OF AMI

#### AMI symptom presentation

|                          | Study 1 | Study 2 | P-value |
|--------------------------|---------|---------|---------|
| Typical chest pain       | 194 (71.1%) | 938 (76.9%) | **0.042** |
| Atypical chest pain      | 55 (20.2%) | 234 (19.2%) | 0.715   |

#### AMI severity

|                          | Study 1 | Study 2 | P-value |
|--------------------------|---------|---------|---------|
| ST-segment elevation     | 130 (47.6%) | 604 (49.5%) | 0.573   |
| Initial systolic blood pressure | 143.5 (42.0) | 144.0 (40.0) | 0.805   |
| (mmHg), median (IQR)     |         |         |         |
| Initial diastolic blood pressure | 88.0 (28.5) | 86.0 (27.0) | 0.169   |
| (mmHg), median (IQR)     |         |         |         |
| Initial heart rate, median (IQR) | 87.0 (26.0) | 85.0 (26.0) | 0.086   |
| Peak troponin, median (IQR) | 5.5 (19.1) | 5.97 (23.6) | 0.638   |
| Ejection fraction <40%   | 49 (18.3%) | 130 (11.1%) | **0.001** |
| Time to presentation >6 hours | 128 (47.2%) | 571 (47.0%) | 0.953   |

#### GRACE scores

|                          | Study 1 | Study 2 | P-value |
|--------------------------|---------|---------|---------|
| GRACE 0-99               | 217 (82.8%) | 1073 (89.2%) |         |
| GRACE 100-127            | 37 (14.1%) | 112 (9.3%) |         |
|                              | GRACE 128-263 | 8 (3.1%) | 18 (1.5%) |
|------------------------------|---------------|----------|-----------|
| **OTHER CLINICAL CHARACTERISTICS** |               |          |           |
| Baseline HbA1c (%), median (IQR) | 8.30 (4.1)    | 7.70 (4.0) | 0.012     |
| 1-month HbA1c (%), median (IQR) | 7.4 (1.7)     | 7.0 (1.5)  | 0.017     |
| Peak glucose, median (IQR)    | 241.5 (170.0) | 192.0 (162.0) | <0.0001 |
| Peak creatinine, median (IQR) | 1.0 (0.5)     | 0.9 (0.3)  | 0.022     |
| Types of Diabetes             |               |          |           |
| Type I                        | 25 (9.2%)     | 79 (6.5%) |           |
| Type II                       | 158 (57.9%)   | 584 (47.9%) |          |
| Self-report treatment         |               |          |           |
| None                          | 23 (8.4%)     | 82 (6.7%) | 0.319     |
| Diet                          | 60 (21.9%)    | 185 (15.2%) | 0.006 |
| Insulin                       | 82 (30.0%)    | 285 (23.4%) | 0.021 |
| Oral hypoglycemic drugs       | 86 (31.5%)    | 359 (29.4%) | 0.498 |
| Diabetic Complications        |               |          |           |
| Kidney disease                | 29 (10.6%)    | 51 (4.2%) | <0.0001 |
| Retinopathy                   | 13 (4.8%)     | 56 (4.6%) | 0.903     |
| Neuropathy                    | 24 (8.8%)     | 96 (7.9%) | 0.612     |
| Amputation                    | 17 (6.2%)     | 9 (0.7%)  | <0.0001   |
| Other complications           | 8 (2.9%)      | 23 (1.9%) | 0.274     |
| **PSYCHOSOCIAL AND BEHAVIORAL FACTORS** |       |          |           |
| Social support via ESSI       | 24.8 (6.16)   | 25.5 (5.5) | 0.096    |
| Stress via PSS                | 27.1 (9.3)    | 26.6 (9.9) | 0.488    |
Supplementary material

Depressive symptom via PHQ-9  9.2 (6.9)  8.7 (6.6)  0.326

| SELF-REPORTED SOCIOECONOMIC STATUS |
|-------------------------------------|
| Health insurance                     | 0.004                                    |
| Insured                             |                                           |
| 196 (71.8%)                         | 972 (79.7 %)                             |
| How difficult is it for you to get medical care when needed? | 0.139                                    |
| Extremely difficult                 |                                           |
| 32 (11.8%)                          | 134 (10.9%)                              |
| Some difficult                      |                                           |
| 56 (20.7%)                          | 195 (15.9%)                              |
| Little/not difficult                |                                           |
| 183 (67.5%)                         | 891 (73.0%)                              |
| Have your medical costs been an economic burden to you over the past year? | 0.371                                    |
| Severe burden                       |                                           |
| 55 (20.3%)                          | 204 (16.7%)                              |
| Some burden                         |                                           |
| 58 (21.4%)                          | 269 (22.1%)                              |
| Little/no burden                    |                                           |
| 158 (58.3%)                         | 747 (61.2%)                              |
| Avoided health-care services due to cost (Yes/No) | 0.776                                    |
| Severe burden                       |                                           |
| 19 (7.0%)                           | 63 (5.2%)                                |
| Some burden                         |                                           |
| 61 (22.5%)                          | 248 (20.3%)                              |
| Rarely to never                     |                                           |
| 191 (69.7%)                         | 909 (74.5%)                              |

Abbreviations: ACEIs = angiotensin converting enzyme inhibitors; ARBs = angiotensin receptor blockers; BMI = body mass index; CVD = cardiovascular disease; ESSI = ENRICHD social support instrument; GRACE = Global registry of acute coronary events; IQR = interquartile range; MI = myocardial infarction; PCI = percutaneous coronary intervention; PHQ-9 = patient health questionnaire-9; PSS = perceived stress scale; SD = standard deviation; TIA = transient ischemic attack

P-values numbers in bold denote statistical significance at the p < 0.05 level.
### Supplementary Table 2: Comparison of baseline characteristics between AMI patients with and without missing values of HbA1c (baseline and/or 1-month)

| Characteristics          | HbA1c Missing AMI Patients (N=745, 21.28%) | No Missing HbA1c AMI Patients (N=2756, 78.72%) | P-value |
|--------------------------|-------------------------------------------|-----------------------------------------------|---------|
| **SOCIO-DEMOGRAPHICS**   |                                           |                                               |         |
| Age, year (Median, IQR)  | 45.9 (9.00)                               | 47.3 (8.00)                                  | **0.0049** |
| Female (%)               | 251 (33.7%)                               | 901 (32.7%)                                  | 0.6066  |
| Race                     |                                           |                                               | 0.1866  |
| White                    | 601 (80.7%)                               | 2141 (77.7%)                                 |         |
| Black                    | 107 (14.4%)                               | 443 (16.1%)                                  |         |
| Others                   | 37 (4.9%)                                 | 172 (6.2%)                                   |         |
| Hispanic (Yes/No)        | 53 (7.1%)                                 | 216 (7.8%)                                   | 0.5107  |
| Marital Status           |                                           |                                               | 0.1123  |
| With partner (%)         | 446 (59.9%)                               | 1583 (57.4%)                                 |         |
| Without partner (%)      | 287 (38.5%)                               | 1147 (41.6%)                                 |         |
| Unknown                  | 12 (1.6%)                                 | 26 (0.9%)                                    |         |
| Education Status         |                                           |                                               | **<0.0001** |
| Less than high school    | 90 (12.6%)                                | 95 (3.5%)                                    |         |
| Some high school         | 336 (47.1%)                               | 1081 (39.7%)                                 |         |
| More than high school    | 287 (40.3%)                               | 1545 (56.8%)                                 |         |
| Employment Status        |                                           |                                               | 0.4052  |
| Working full time        | 364 (48.9%)                               | 1423 (51.6%)                                 |         |
| Working part-time        | 82 (11.0%)                                | 288 (10.5%)                                  |         |
### Supplementary Material

| Household Income          | Not Working          | Household Income | 0.0014 |
|---------------------------|----------------------|------------------|--------|
| < $30,000                 | 345 (46.4%)          | 1163 (42.2%)     |        |
| $30,000-$69,999           | 232 (31.2%)          | 788 (28.6%)      |        |
| ≥ $70,000                 | 167 (22.5%)          | 803 (29.2%)      |        |

### CVD Risk Factors

|                         | Not Working | Household Income | <0.0001 |
|-------------------------|-------------|------------------|---------|
| Family history of CVD   | 487 (65.5%) | 2018 (73.3%)     |         |
| History of hypertension | 420 (56.4%) | 1797 (65.2%)     | <0.0001 |
| History of hypercholesterolemia | 620 (83.2%) | 2382 (86.4%) | 0.0263  |
| Smoking within last 30 days | 518 (69.6%) | 1567 (56.9%) | <0.0001 |
| Sleep apnea             | 18 (2.4%)   | 143 (5.2%)       | 0.0013  |
| Body mass index > 30 kg/m² | 282 (38.1%) | 1427 (51.8%)    | <0.0001 |

### Other Comorbidities

|                         | Not Working | Household Income | 0.1409 |
|-------------------------|-------------|------------------|--------|
| History of renal dysfunction | 66 (8.9%)  | 296 (10.8%)      |        |
| History of heart failure | 24 (3.2%)   | 117 (4.3%)       | 0.2067 |
| History of prior stroke/TIA | 24 (3.2%)  | 123 (4.5%)      | 0.1334 |
| History of depression   | 272 (36.5%) | 1126 (40.8%)    | 0.0311 |
| History of alcohol abuse | 63 (8.5%)  | 168 (6.1%)       | 0.0221 |
| Prior MI                 | 98 (13.2%)  | 445 (16.2%)      | 0.0453 |
| Prior PCI                | 78 (10.5%)  | 430 (15.6%)      | 0.0004 |

### AMI Treatment During Hospitalization

| Coronary revascularization | Not Working | Household Income | 0.0958 |
|---------------------------|-------------|------------------|--------|
| (PCI/CABG)                | 591 (79.3%) | 2260 (82.0%)     |        |
### Supplementary material

| Intervention                        | Value 1 | Value 2 | p-value |
|-------------------------------------|---------|---------|---------|
| Diagnostic angiography              | 703 (94.4%) | 2609 (94.7%) | 0.7448 |
| Aspirin at arrival                  | 715 (97.15%) | 2642 (97.7%) | 0.3797 |
| **Reperfusion**                      |         |         | **0.0165** |
| Fibrinolytic therapy                | 59 (8.4%) | 140 (5.5%) |
| Primary angioplasty                 | 355 (50.6%) | 1334 (52.3%) |
| Not received                        | 287 (40.9%) | 1077 (42.2%) |

### Discharge medications

| Medication                      | Value 1 | Value 2 | p-value |
|---------------------------------|---------|---------|---------|
| Aspirin at discharge            | 716 (97.9%) | 2658 (98.1%) | 0.8672 |
| Statin prescribed               | 686 (94.1%) | 2526 (94.1%) | 0.9905 |
| Beta-blocker prescribed         | 643 (92.5%) | 2500 (96.7%) | <0.0001 |
| ACEI or ARB prescribed          | 468 (68.0%) | 1763 (70.8%) | 0.1539 |

### CLINICAL CHARACTERISTICS OF AMI

| Characteristic          | Value 1 | Value 2 | p-value |
|-------------------------|---------|---------|---------|
| Coronary occlusion ≥50% |         |         | 0.6619  |
| (documented by coronary  |         |         |         |
| angiography)            |         |         |         |
| Yes                     | 621 (83.4%) | 2306 (83.7%) |
| No                      | 76 (10.2%) | 274 (9.9%) |
| Unknown                 | 48 (6.4%) | 176 (6.4%) |

| AMI symptom presentation   | Value 1 | Value 2 | p-value |
|---------------------------|---------|---------|---------|
| Typical chest pain        | 632 (84.8%) | 2141 (77.7%) | <0.0001 |
| Atypical chest pain       | 98 (13.2%) | 526 (19.1%) | **0.0002** |

| AMI severity              | Value 1 | Value 2 | p-value |
|---------------------------|---------|---------|---------|
| ST-segment elevation      | 421 (56.5%) | 1390 (50.4%) | **0.0032** |
### Supplementary material

| Measure                                      | Median (IQR) 1 | Median (IQR) 2 | p-value  
|----------------------------------------------|----------------|----------------|---------
| Initial systolic blood pressure, median (IQR) | 139.0 (41.0)  | 142.0 (37.0)  | 0.0037  
| Initial diastolic blood pressure, median (IQR) | 85.0 (26.0)   | 87.0 (25.0)   | 0.3664  
| Initial heart rate, median (IQR)             | 80.0 (23.0)   | 81.0 (25.0)   | 0.1356  
| Peak troponin, median (IQR)                  | 9.8 (38.1)    | 6.6 (24.8)    | 0.0002  
| Ejection fraction <40%                       | 75 (10.4%)    | 293 (10.9%)   | 0.6569  
| Time to presentation >6 hours                | 277 (37.3%)   | 1189 (43.3%)  | 0.0035  
| GRACE scores                                 |                |               | 0.0316  
| GRACE 0-99                                   | 680 (93.8%)   | 2456 (90.7%)  |         
| GRACE 100-127                                | 39 (5.4%)     | 222 (8.2%)    |         
| GRACE 128-263                                | 6 (0.8%)      | 29 (1.1%)     |         

**OTHER CLINICAL CHARACTERISTICS**

| Measure                                      | Median (IQR) 1 | Median (IQR) 2 | p-value  
|----------------------------------------------|----------------|----------------|---------
| Baseline HbA1c (%) median (IQR)              | NA             | 7.70 (4.0)     |         
| 1-month HbA1c (%) median (IQR)               | NA             | 7.0 (1.5)      |         
| Initial glucose, median (IQR)                | 119.0 (44.0)   | 132.0 (73.0)   | <0.0001 
| Peak glucose, median (IQR)                   | 130.0 (49.0)   | 145.0 (92.0)   | <0.0001 
| Peak creatinine, median (IQR)                | 0.9 (0.3)      | 0.9 (0.3)      | 0.8610  
| Types of Diabetes                            |                |               | <0.0001 
| Type I                                       | 19 (2.6%)      | 85 (3.1%)      |         
| Type II                                      | 70 (9.4%)      | 672 (24.4%)    |         
| Unknown                                      | 656 (88.1%)    | 1999 (72.5%)   |         
| Self-report treatment                        |                |               |         

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| Condition                          | Control Group   | Case Group     | p-value  |
|-----------------------------------|-----------------|----------------|----------|
| None                              | 12 (1.6%)       | 93 (3.4%)      | 0.012    |
| Diet                              | 25 (3.3%)       | 220 (7.9%)     | 0.0001   |
| Insulin                           | 37 (4.9%)       | 330 (11.9%)    | 0.0001   |
| Oral hypoglycemic drugs           | 48 (6.4%)       | 397 (14.4%)    | <0.0001  |
| Unknown                           | 623 (83.6%)     | 1716 (62.3%)   |          |

### Diabetic Complications

| Complication           | Control Group | Case Group | p-value  |
|------------------------|---------------|------------|----------|
| Kidney disease         | 10 (1.3%)     | 70 (2.5%)  | 0.0523   |
| Retinopathy            | 5 (0.7%)      | 64 (2.3%)  | 0.004    |
| Neuropathy             | 11 (1.5%)     | 109 (3.9%) | 0.001    |
| Amputation             | 5 (0.7%)      | 21 (0.8%)  | 0.798    |
| Other complications    | 2 (0.2%)      | 29 (1.1%)  | 0.0428   |
| Unknown                | 712 (95.6%)   | 2463 (89.4%)|          |

### PSYCHOSOCIAL AND BEHAVIORAL FACTORS

| Factor                           | Control Mean | Case Mean | p-value  |
|----------------------------------|--------------|-----------|----------|
| Social support via ESSI          | 24.8 (6.16)  | 25.5 (5.5) | 0.096    |
| Stress via PSS                   | 27.1 (9.3)   | 26.6 (9.9) | 0.488    |
| Depressive symptom via PHQ-9     | 9.2 (6.9)    | 8.7 (6.6)  | 0.326    |
| Physical activity                |              | <0.0001    |          |
| Physically active                | 244 (33.2%)  | 1002 (36.7%)|         |
| Insufficient activity            | 169 (23.0%)  | 774 (28.4%)|          |
| Inactivity                       | 321 (43.7%)  | 954 (34.9%)|          |

### SELF-REPORTED SOCIOECONOMIC STATUS

| Condition              | Control Group | Case Group | p-value  |
|------------------------|---------------|------------|----------|
| Health insurance       |               |            | 0.0001   |
| Insured                | 633 (84.9%)   | 2166 (78.6%)|          |
### Supplementary material

**How difficult is it for you to get medical care when needed?**

| Difficulty          | Count (Percentage) | Total (Percentage) |
|---------------------|--------------------|--------------------|
| Extremely difficult | 57 (7.7%)          | 281 (10.2%)        |
| Some difficult      | 124 (16.7%)        | 437 (15.9%)        |
| Little/not difficult| 563 (75.7%)        | 2036 (73.9%)       |

**Have your medical costs been an economic burden to you over the past year?**

| Burden               | Count (Percentage) | Total (Percentage) |
|----------------------|--------------------|--------------------|
| Severe burden        | 74 (9.9%)          | 392 (14.2%)        |
| Some burden          | 113 (15.2%)        | 566 (20.6%)        |
| Little/no burden     | 557 (74.9%)        | 1796 (65.2%)       |

**Avoided health-care services due to cost (Yes/No)**

| Avoided Health-Care Services | Count (Percentage) | Total (Percentage) |
|------------------------------|--------------------|--------------------|
| 152 (20.4%)                  | 904 (32.8%)        |

**How often have you not taken a medication that your doctor prescribed because of the cost?**

| Frequency             | Count (Percentage) | Total (Percentage) |
|-----------------------|--------------------|--------------------|
| Always                | 24 (3.2%)          | 125 (4.5%)         |
| Sometimes             | 96 (12.9%)         | 464 (16.9%)        |
| Rarely to never       | 624 (83.9%)        | 2165 (78.6%)       |

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Abbreviations: ACEIs = angiotensin converting enzyme inhibitors; ARBs = angiotensin receptor blockers; BMI = body mass index; CABG = coronary artery bypass grafting; CVD = cardiovascular disease; ESSI = ENRICHD social support instrument; GRACE = Global registry of acute coronary events; IQR = interquartile range; MI = myocardial infarction; PCI = percutaneous coronary intervention; PHQ-9 = patient health questionnaire-9; PSS = perceived stress scale; SD = standard deviation; TIA = transient ischemic attack.

P-value numbers in bold denote statistical significance at p<0.05 level.
Supplementary Table 3: Health Status Outcomes Stratified by NDD Subgroups

| Health Status Outcomes       | NDD (HbA1c ≥8)  | NDD (6.5 ≤ HbA1c <8) (N=435) | Without Diabetes (N=2008) Mean (SD) | Established Diabetes (N=985) Mean (SD) | P-Value* (a) vs. (c) | P-Value† (a) vs. (d) | P-Value‡ (b) vs. (c) | P-Value§ (b) vs. (d) |
|-----------------------------|-----------------|-------------------------------|-------------------------------------|---------------------------------------|----------------------|----------------------|----------------------|----------------------|
| Baseline                    |                 |                               |                                     |                                       |                      |                      |                      |                      |
| SAQ-Angina Frequency        | 87.87 (15.73)   | 85.30 (18.22)                 | 85.84 (18.94)                       | 79.33 (23.73)                        | 0.465                | 0.008                | 0.059                | <0.0001              |
| SAQ-Physical Limitations    | 83.18 (26.85)   | 82.41 (24.63)                 | 84.56 (22.93)                       | 73.77 (28.72)                        | 0.688                | 0.029                | 0.084                | <0.0001              |
| SAQ-Quality of Life         | 61.35 (22.21)   | 60.52 (25.73)                 | 57.48 (22.84)                       | 52.94 (25.25)                        | 0.251                | 0.025                | 0.024                | <0.0001              |
| SF-12 Mental Functioning    | 46.72 (12.11)   | 45.41 (12.18)                 | 46.36 (12.37)                       | 43.21 (12.81)                        | 0.849                | 0.069                | 0.155                | 0.003                |
| SF-12 Physical Functioning  | 46.03 (11.63)   | 44.24 (11.87)                 | 45.84 (11.65)                       | 39.71 (12.06)                        | 0.914                | 0.001                | 0.012                | <0.0001              |
| EQ-5D-VAS                   | 62.55 (21.75)   | 67.55 (21.07)                 | 66.34 (20.62)                       | 58.49 (22.27)                        | 0.228                | 0.237                | 0.282                | <0.0001              |

1-Month Follow-Up
### Supplementary material

| Test                          | Pre-Index       | Index            | Post-Index       | Pre-index Score | Index Score | Post-index Score | p-value Pre-index vs Index | p-value Index vs Post-index | p-value Post-index vs Pre-index |
|-------------------------------|-----------------|------------------|------------------|-----------------|--------------|------------------|----------------------------|----------------------------|-------------------------------|
| SAQ-Angina Frequency         | 94.32 (12.83)   | 88.95 (18.20)    | 89.51 (17.27)    | 87.39 (18.53)   | 0.019        | 0.014            | 0.058                      | 0.151                      |                               |
| SAQ-Physical Limitations     | 88.13 (20.04)   | 91.48 (18.04)    | 89.90 (19.09)    | 88.91 (20.94)   | 0.544        | 0.081            | 0.124                      | 0.024                      |                               |
| SAQ-Quality of Life          | 71.97 (21.87)   | 71.51 (24.50)    | 67.94 (24.57)    | 66.39 (26.40)   | 0.284        | 0.162            | 0.008                      | 0.001                      |                               |
| SF-12 Mental Functioning     | 51.91 (10.07)   | 51.68 (9.41)     | 49.61 (10.85)    | 48.61 (11.21)   | 0.174        | 0.062            | 0.001                      | <0.0001                    |                               |
| SF-12 Physical Functioning   | 41.39 (11.94)   | 42.43 (11.60)    | 43.51 (11.28)    | 38.10 (11.75)   | 0.229        | 0.078            | 0.089                      | <0.0001                    |                               |
| EQ-5D-VA S                   | 64.39 (20.63)   | 72.99 (19.42)    | 71.75 (20.09)    | 67.37 (22.40)   | 0.016        | 0.386            | 0.254                      | <0.0001                    |                               |

### 12-Month Follow-Up

| Test                          | Pre-Index       | Index            | Post-Index       | Pre-index Score | Index Score | Post-index Score | p-value Pre-index vs Index | p-value Index vs Post-index | p-value Post-index vs Pre-index |
|-------------------------------|-----------------|------------------|------------------|-----------------|--------------|------------------|----------------------------|----------------------------|-------------------------------|
| SAQ-Angina Frequency         | 93.82 (11.29)   | 92.28 (14.74)    | 92.06 (16.03)    | 89.21 (19.12)   | 0.378        | 0.030            | 0.793                      | 0.003                      |                               |
| SAQ-Physical Limitations     | 89.22 (18.79)   | 93.74 (15.72)    | 91.87 (17.98)    | 89.79 (20.94)   | 0.395        | 0.863            | 0.041                      | 0.001                      |                               |
| SAQ-Quality of Life          | 71.57 (23.22)   | 76.39 (21.87)    | 72.23 (22.51)    | 70.32 (24.88)   | 0.866        | 0.775            | 0.001                      | <0.0001                    |                               |
### Supplementary material

|                      | NDD HbA1c ≥8 | NDD HbA1c <8 | Established Diabetes | p-value |
|----------------------|--------------|--------------|----------------------|---------|
| SF-12 Mental         | 52.80 (10.74)| 51.28 (9.62)| 50.61 (10.80)        | 0.243   |
| Functioning          |              |              |                      |         |
| SF-12 Physical       | 44.43 (12.91)| 45.28 (12.08)| 46.14 (11.55)        | 0.395   |
| Functioning          |              |              |                      |         |
| EQ-5D-VAS            | 68.62 (20.54)| 76.60 (18.07)| 73.61 (20.22)        | 0.169   |
|                      |              |              |                      | **0.001** |

*P-values were testing for health status outcomes differences between NDD patients with HbA1c ≥8 and those without diabetes.
†P-values were testing for health status outcomes differences between NDD patients with HbA1c ≥8 and those with established diabetes.
‡P-values were testing for health status outcomes differences between NDD patients with HbA1c <8 and those without diabetes.
§P-values were testing for health status outcomes differences between NDD patients with HbA1c <8 and those with established diabetes.

**Abbreviations:** EQ-5D-VAS = Euro-Quality of Life Visual Analog Scale; NDD = newly diagnosed diabetes; SAQ = Seattle Angina Questionnaire; SF-12 = 12-Item Short Form Health Survey

P-values numbers in bold denote statistical significance at the p<0.05 level.
### Supplementary Table 4: Mortality and in-hospital medical complications after AMI stratified by NDD subgroups

| Clinical Outcomes | NDD (HbA1c ≥8) (N=47) (a) | NDD (6.5 ≤ HbA1c <8) (N=435) (b) | Without Diabetes (N=2008) (c) | Established Diabetes (N=985) (d) | P-Value* (a) vs. (c) | P-Value † (a) vs. (d) | P-Value ‡ (b) vs. (c) | P-Value § (b) vs. (d) |
|-------------------|-----------------------------|---------------------------------|-------------------------------|---------------------------------|----------------------|----------------------|----------------------|----------------------|
| **Mortality**     |                             |                                 |                               |                                 |                      |                      |                      |                      |
| In-hospital       | 0                           | 0                               | 1 (0.1%)                      | 3 (0.3%)                        | 0.999                | 0.999                | 0.999                | 0.557                |
| mortality         |                             |                                 |                               |                                 |                      |                      |                      |                      |
| 30-day mortality  | 0                           | 0                               | 12 (0.6%)                     | 9 (0.9%)                        | 0.999                | 0.999                | 0.126                | 0.102                |
| 1-year mortality  | 0                           | 5 (1.2%)                        | 32 (1.6%)                     | 35 (3.6%)                       | 0.822                | 0.519                | **0.029**            | **0.003**            |
| **In-Hospital Medical Complications** | | | | | | | | |
| Re-infarction     | 2 (4.3%)                    | 4 (0.9%)                        | 28 (1.4%)                     | 9 (0.9%)                        | 0.131                | **0.033**            | 0.868                | 0.815                |
| Heart failure     | 3 (6.4%)                    | 30 (6.9%)                       | 109 (5.4%)                    | 97 (9.9%)                       | 0.829                | 0.759                | 0.269                | 0.154                |
| Cardiac arrhythmias | 2 (4.3%)                  | 26 (5.9%)                       | 151 (7.5%)                    | 65 (6.6%)                       | 0.664                | 0.845                | 0.526                | 0.680                |
| Stroke/Transient ischemic attack | 0                      | 1 (0.2%)                         | 6 (0.3%)                      | 4 (0.4%)                        | 0.999                | 0.569                | 0.889                | 0.999                |
| Hemorrhagic       | 6 (12.8%)                   | 26 (5.9%)                       | 153 (7.6%)                    | 80 (8.1%)                       | 0.281                | 0.078                | 0.455                | 0.281                |

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| complications |        |        |        |        |
|---------------|--------|--------|--------|--------|

* = P-values were testing for clinical outcomes differences between NDD patients with HbA1c ≥8 and those without diabetes. Fisher exact for cells <5.
† = P-values were testing for clinical outcomes differences between NDD patients with HbA1c ≥8 and those with established diabetes.
‡ = P-values were testing for clinical outcomes differences between NDD patients with HbA1c <8 and those without diabetes. Fisher exact for cells <5.
§ = P-values were testing for clinical outcomes differences between NDD patients with HbA1c <8 and those with established diabetes. Fisher exact for cells <5.

Abbreviations: NDD = newly diagnosed diabetes
P-values numbers in bold denote statistical significance at the p<0.05 level.
### Supplementary Table 5: Parameter estimates and P-values from the mixed effects models describing the relationship between newly diagnosed diabetes subgroups and health status outcomes

| Health Status Outcomes | Reference Group | Estimate (Unadjusted models) | 95% Confidence Intervals | P-Value | Estimate (Adjusted models*) | 95% Confidence Intervals | P-Value |
|------------------------|-----------------|-----------------------------|--------------------------|---------|-----------------------------|--------------------------|---------|
| **SAQ-Angina Frequency** |                 |                             |                          |         |                             |                          |         |
| Newly diagnosed diabetes HbA1c ≥8 | Without diabetes | 2.81                        | -1.00 to 6.63            | 0.149   | 1.75                        | -2.12 to 5.62            | 0.376   |
|                       | Established diabetes | 6.67                        | 2.22 to 11.11           | **0.003** | 1.25                        | -3.01 to 5.52            | 0.564   |
| Newly diagnosed diabetes HbA1c <8 | Without diabetes | -0.20                     | -1.52 to 1.11           | 0.7616  | 0.29                        | -0.96 to 1.53           | 0.653   |
|                       | Established diabetes | 3.49                        | 1.89 to 5.10            | **<0.0001** | 1.30                        | -0.47 to 3.08          | 0.149   |
| **SAQ-Physical Limitations** |                 |                             |                          |         |                             |                          |         |
| Newly diagnosed diabetes HbA1c ≥8 | Without diabetes | -1.45                       | -6.01 to 3.12           | 0.535   | -1.31                       | -5.74 to 3.13            | 0.5635  |
|                       | Established diabetes | 1.75                        | -3.39 to 6.89           | 0.504   | 4.86                        | -3.07 to 12.79           | 0.2291  |

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|                                | Newly diagnosed diabetes HbA1c <8 | Without diabetes | Established diabetes | Newly diagnosed diabetes HbA1c ≥8 | Without diabetes | Established diabetes | Newly diagnosed diabetes HbA1c <8 | Established diabetes |
|--------------------------------|----------------------------------|------------------|----------------------|----------------------------------|------------------|----------------------|----------------------------------|----------------------|
|                                |                                  |                  |                      |                                  |                  |                      |                                  |                      |
|                                | 0.99                             | -0.55 to 2.53    | 0.209                | -1.24                            | -3.49 to 1.01    | 0.2800               |                                  |                      |
|                                | 4.52                             | 2.71 to 6.33     | <0.0001              | 5.47                             | 2.40 to 8.54     | 0.0005               |                                  |                      |
| SAQ-Quality of Life            |                                  |                  |                      |                                  |                  |                      |                                  |                      |
|                                |                                  |                  |                      |                                  |                  |                      |                                  |                      |
|                                | 3.16                             | -2.26 to 8.59    | 0.253                | 2.19                             | -2.98 to 7.37    | 0.4065               |                                  |                      |
|                                | 6.21                             | 0.25 to 12.2     | 0.041                | 1.20                             | -4.27 to 6.68    | 0.667                |                                  |                      |
|                                | 3.47                             | 1.56 to 5.39     | 0.0004               | 3.46                             | 1.77 to 5.17     | <0.0001              |                                  |                      |
|                                | 6.64                             | 4.41 to 8.86     | <0.0001              | 2.78                             | 0.45 to 5.11     | 0.019                |                                  |                      |
| SF-12 Mental Functioning       |                                  |                  |                      |                                  |                  |                      |                                  |                      |
|                                |                                  |                  |                      |                                  |                  |                      |                                  |                      |
|                                | 1.92                             | -0.82 to 4.66    | 0.169                | 0.84                             | -1.36 to 3.04    | 0.455                |                                  |                      |
### Supplementary material

|                  | Established diabetes |                  |                  |                  |                  |
|------------------|----------------------|------------------|------------------|------------------|------------------|
| **Newly diagnosed diabetes HbA1c ≥ 8** | 3.79 | 0.92 to 6.66 | **0.009** | 0.75 | -1.38 to 2.88 | 0.488 |
| **Newly diagnosed diabetes HbA1c < 8** | 0.89 | -0.05 to 1.85 | 0.063 | -0.76 | -1.80 to 0.28 | 0.150 |
| **Newly diagnosed diabetes HbA1c ≥ 8** | 2.77 | 1.72 to 3.81 | **<0.0001** | 0.31 | -0.59 to 1.21 | 0.508 |

#### SF-12 Physical Functioning

|                  | Established diabetes |                  |                  |                  |                  |
|------------------|----------------------|------------------|------------------|------------------|------------------|
| **Newly diagnosed diabetes HbA1c ≥ 8** | -1.20 | -4.04 to 1.64 | 0.407 | -0.67 | -3.25 to 1.92 | 0.612 |
| **Newly diagnosed diabetes HbA1c < 8** | 4.56 | 1.45 to 7.67 | **0.004** | -0.03 | -2.67 to 2.62 | 0.984 |
| **Newly diagnosed diabetes HbA1c ≥ 8** | -1.21 | -2.22 to -0.19 | **0.019** | -0.25 | -1.11 to 0.61 | 0.569 |
| **Newly diagnosed diabetes HbA1c < 8** | 4.53 | 3.35 to 5.71 | **<0.0001** | 0.59 | -0.57 to 1.75 | 0.319 |

#### EQ-5D Visual Analogue Scale

25
### Supplementary material

|                      | Without diabetes | Established diabetes | Without diabetes | Established diabetes |
|----------------------|------------------|----------------------|------------------|----------------------|
| Newly diagnosed      |                  |                      |                  |                      |
| diabetes HbA1c ≥8    | -5.25            | -0.0 to 0.48         | 0.031            | -4.87                | -9.44 to -0.29       | 0.037 |
|                      | 0.78             | -4.64 to 6.21        | 0.777            | -4.10                | -9.17 to 0.96        | 0.112 |
| Newly diagnosed      |                  |                      |                  |                      |
| diabetes HbA1c <8    | 1.71             | 0.05 to 3.37         | 0.044            | 1.99                 | 0.49 to 3.48         | 0.009 |
|                      | 7.69             | 5.73 to 9.66         | <0.0001          | 3.21                 | 1.09 to 5.33         | 0.003 |

**Abbreviations:** EQ-5D-VAS = Euro-Quality of Life Visual Analogue Scale; SAQ = Seattle Angina Questionnaire; SF-12 = 12-Item Short Form Health Survey

P-values marked in bold denote statistical significance at the p<0.05 level.
### Supplementary Table 6: P-values for interactions between newly diagnosed diabetes subgroups and time in the fully adjusted linear mixed effects models

| Post-AMI health outcomes (baseline, 1-month & 12-months) | P-value |
|--------------------------------------------------------|---------|
| Newly Diagnosed Diabetes HbA1c ≥8% vs. No Diabetes     |         |
| SAQ-Angina Frequency Scores                            |         |
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction   | 0.4365  |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction   | 0.8564  |
| SAQ-Physical Limitations                               |         |
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction   | 0.8196  |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction   | 0.8367  |
| SAQ-Quality of Life                                    |         |
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction   | 0.8487  |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction   | 0.2614  |
| SF-12 Mental Functioning                               |         |
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction   | 0.3982  |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction   | 0.4809  |
| SF-12 Physical Functioning                             |         |
Supplementary material

|                                | Time Interaction   |
|--------------------------------|--------------------|
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction | 0.2143             |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction     | 0.4112             |
| **EQ-5D Visual Analogue Scale**                        |                    |
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction     | 0.2847             |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction     | 0.7516             |
| **Newly Diagnosed Diabetes HbA1c ≥8% vs. Established Diabetes** |                    |
| **SAQ-Angina Frequency Scores**                        |                    |
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction     | 0.5699             |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction     | 0.3091             |
| **SAQ-Physical Limitations**                            |                    |
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction     | **0.0219**         |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction     | 0.0648             |
| **SAQ-Quality of Life**                                 |                    |
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction     | 0.3472             |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction     | 0.1107             |
| **SF-12 Mental Functioning**                            |                    |
### Supplementary material

|                                      |                  |       |
|--------------------------------------|------------------|-------|
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction | 0.8504           |       |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction   | 0.8983           |       |

### SF-12 Physical Functioning

|                                      |                  |       |
|--------------------------------------|------------------|-------|
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction | 0.0771           |       |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction   | 0.2923           |       |

### EQ-5D Visual Analogue Scale

|                                      |                  |       |
|--------------------------------------|------------------|-------|
| Newly diagnosed diabetes HbA1c ≥8%*time2 interaction | 0.0465           |       |
| Newly diagnosed diabetes HbA1c ≥8%*time3 interaction   | 0.3579           |       |

### Newly Diagnosed Diabetes HbA1c <8% vs. No diabetes

#### SAQ-Angina Frequency Scores

|                                      |                  |       |
|--------------------------------------|------------------|-------|
| Newly Diagnosed Diabetes HbA1c <8%*time2 interaction | 0.9969           |       |
| Newly Diagnosed Diabetes HbA1c <8%*time3 interaction   | 0.6595           |       |

#### SAQ-Physical Limitations

|                                      |                  |       |
|--------------------------------------|------------------|-------|
| Newly Diagnosed Diabetes HbA1c <8%*time2 interaction | 0.0126           |       |
| Newly Diagnosed Diabetes HbA1c <8%*time3 interaction   | 0.0092           |       |

#### SAQ-Quality of Life
### Supplementary material

| Measure                                           | Newly Diagnosed Diabetes HbA1c <8% *time2 interaction | 0.6480 |
|---------------------------------------------------|-------------------------------------------------------|--------|
|                                                   | Newly Diagnosed Diabetes HbA1c <8% *time3 interaction | 0.5222 |
| SF-12 Mental Functioning                          |                                                        |        |
|                                                   | Newly Diagnosed Diabetes HbA1c <8% *time2 interaction | <0.0001|
|                                                   | Newly Diagnosed Diabetes HbA1c <8% *time3 interaction | 0.0350 |
| SF-12 Physical Functioning                        |                                                        |        |
|                                                   | Newly Diagnosed Diabetes HbA1c <8% *time2 interaction | 0.4923 |
|                                                   | Newly Diagnosed Diabetes HbA1c <8% *time3 interaction | 0.5369 |
| EQ-5D Visual Analogue Scale                       |                                                        |        |
|                                                   | Newly Diagnosed Diabetes HbA1c <8% *time2 interaction | 0.9700 |
|                                                   | Newly Diagnosed Diabetes HbA1c <8% *time3 interaction | 0.2111 |
| **Newly Diagnosed Diabetes HbA1c <8% vs. Established Diabetes** |                                                        |        |
| SAQ-Angina Frequency Scores                       |                                                        |        |
|                                                   | Newly Diagnosed Diabetes HbA1c <8% *time2 interaction | 0.0009 |
|                                                   | Newly Diagnosed Diabetes HbA1c <8% *time3 interaction | 0.0251 |
| SAQ-Physical Limitations                          |                                                        |        |
Supplementary material

|                          |                 |       |
|--------------------------|----------------|-------|
| Newly Diagnosed Diabetes HbA1c <8% *time2 interaction | **0.0004**     |       |
| Newly Diagnosed Diabetes HbA1c <8% *time3 interaction | **0.0065**     |       |
| SAQ-Quality of Life      |                 |       |
| Newly Diagnosed Diabetes HbA1c <8% *time2 interaction | 0.1085         |       |
| Newly Diagnosed Diabetes HbA1c <8% *time3 interaction | 0.3087         |       |
| SF-12 Mental Functioning |                 |       |
| Newly Diagnosed Diabetes HbA1c <8% *time2 interaction | 0.2410         |       |
| Newly Diagnosed Diabetes HbA1c <8% *time3 interaction | 0.6515         |       |
| SF-12 Physical Functioning |               |       |
| Newly Diagnosed Diabetes HbA1c <8% *time2 interaction | 0.4914         |       |
| Newly Diagnosed Diabetes HbA1c <8% *time3 interaction | 0.9131         |       |
| EQ-5D Visual Analogue Scale |               |       |
| Newly Diagnosed Diabetes HbA1c <8% *time2 interaction | **0.0114**     |       |
| Newly Diagnosed Diabetes HbA1c <8% *time3 interaction | 0.5387         |       |

**Abbreviations:** EQ-5D = Euro-Quality of Visual Analogue Scale; SAQ = Seattle Angina Questionnaire; SF-12 = 12-Item Short Form Survey; Time2=indicator of the 1-month follow-up time point; Time3=indicator of the 12-months follow-up time point. P-values marked in bold denote statistical significance at the p<0.05 level.
Supplementary material

Supplementary Table 7: Self-reported weight changes during 12-month follow-up, stratified by diabetes status

| Self-reported weight changes during 12-month follow-up | Without Diabetes (N=2008, 57.36%) (a) | Newly Diagnosed Diabetes (N=508, 14.51%) (b) | Established Diabetes (N=985, 28.13%) (c) | P-value (b) vs. (a) | P-value (b) vs. (c) |
|------------------------------------------------------|----------------------------------------|---------------------------------------------|----------------------------------------|-------------------|-------------------|
| Gain weight                                           | 620 (30.9%)                            | 150 (29.5%)                                | 265 (26.9%)                            | 0.556             | 0.2836            |
| Lost weight                                           | 508 (25.3%)                            | 157 (30.9%)                                | 282 (28.6%)                            | **0.0105**        | 0.3604            |
| No change                                             | 416 (20.7%)                            | 117 (23.0%)                                | 166 (16.9%)                            | 0.2541            | **0.0039**        |
| Unknown                                               | 31 (1.5%)                              | 8 (1.6%)                                   | 20 (2.0%)                              | 0.959             | 0.5386            |

Among AMI patients who had received weight management counseling at discharge

| Self-reported weight changes during 12-month follow-up | Without Diabetes (n=753, 37.5% out of 2008) (a) | Newly Diagnosed Diabetes (n=195, 38.4% out of 508) (b) | Established Diabetes (n=427, 43.4% out of 985) (c) | P-value (b) vs. (a) | P-value (b) vs. (c) |
|------------------------------------------------------|-----------------------------------------------|------------------------------------------------------|-----------------------------------------------|-------------------|-------------------|
| Gain weight                                           | 219 (29.1%)                                 | 58 (29.7%)                                           | 118 (27.6%)                               | 0.8567            | 0.588             |
| Lost weight                                           | 196 (26.0%)                                 | 63 (32.3%)                                           | 129 (30.2%)                               | 0.0795            | 0.599             |
| No change                                             | 158 (20.9%)                                 | 44 (22.6%)                                           | 63 (14.8%)                                | 0.6308            | **0.016**         |
| Unknown                                               | 9 (1.2%)                                    | 4 (2.1%)                                             | 4 (0.9%)                                  | 0.3596            | 0.2525            |

*P-values in bold denote statistical significance at the p<0.05 level*
Supplementary material

Supplementary Figure 1:

Young Adults Admitted to Hospitals with AMI & included in VIRGO (N=3501)

AMI Patients without Diabetes (n=2008)

AMI Patients with Diabetes (n=1483)

Established Diabetes (n=985, 28.1% of the total number of AMI patients (N=3501))

Newly Diagnosed Diabetes (NDD) (n=508, 14.5% of the total number of AMI patients (N=3501))

Identified by baseline OR 1-month HbA1C ≥ 6.5% (n=482, 94.9% of 508 NDD patients)

Identified by discharge diagnosis OR use of glucose-lowering medication at discharge OR 1-month (n=26, 5.1% of 508 NDD patients)
Supplementary material

Supplementary Figure 2:

HbA1c Levels Distributions for Newly Diagnosed Diabetes (NDD)
NDD diagnosed by HbA1c ≥ 6.5% (n=482)

Note: median is shown with a dashed line, first and third quantiles are shown dotted lines. The first quantile is below the dashed line and the third quantile is above the dashed line.
Supplementary material

Supplementary Figure 3:

Trends of Disease-Specific Health Status (SAQ)

Trends of Non-Disease-Specific Health Status (SF-12 & EQ-5D-VAS)

Ding Q. et al. Heart 2021; 107:657–666. doi: 10.1136/heartjnl-2020-317101
Supplementary material

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