**Supplemental Tables**

Table S1. Patient characteristics for the full cohort and stratified by change in statin adherence after AMI.

Table S2. Full model results for the association between all-cause mortality and post-AMI statin adherence, while adjusting for pre-AMI statin adherence.

Table S3. Full model results for the association between all-cause mortality and change in statin adherence after acute myocardial infarction (AMI).

Table S4. Crude estimates and models adjusted iteratively based on the timing of covariate measurement for the association between all-cause mortality and change in statin adherence after acute myocardial infarction (AMI).

Table S5. Sensitivity analyses involving changing variable definitions or adding new variables to the model estimating the association between all-cause mortality and change in statin adherence after acute myocardial infarction (AMI).

Table S6. Sensitivity analyses with restricted study eligibility estimating the association between all-cause mortality and change in statin adherence after acute myocardial infarction (AMI).

Table S7. Association between all-cause mortality and change in statin adherence, adjusted for changes in ACE/ARB and beta-blocker adherence, among the subgroup of prevalent users for all 3 medication classes: models adjusted iteratively based on the timing of covariate measurement and comparison to final model from manuscript.

Table S8. Full model results for the association between all-cause mortality and change in statin adherence after acute myocardial infarction, adjusted for changes in ACE/ARB and beta-blocker adherence, among the subgroup of prevalent users for all 3 medication classes (N=48,580).

**Supplemental Figures**

Figure S1. Unadjusted survival curves and 95% confidence bands for all-cause mortality after acute myocardial infarction, stratified by statin adherence.

Figure S2. Schoenfeld residuals (dots) with smooth fitted spline (line) for statin adherence change.
Table S1. Patient characteristics for the full cohort and stratified by change in statin adherence after AMI.

| Patient characteristics | Full cohort | Post-AMI statin adherence | Pre-AMI statin adherence | Post-AMI statin adherence | Adherent |
|-------------------------|-------------|---------------------------|--------------------------|--------------------------|----------|
|                         | N=101,011   | Severely nonadherent      | Moderately nonadherent   | Adherent                 |          |
|                         | n (%)       | Sev NA Mod NA Adh         | Sev NA Mod NA Adh        | Sev NA Mod NA Adh        |          |
| Sociodemographics       |             | %                         | %                        | %                        | %        |
| Age                     |             |                           |                          |                          |          |
| 66-75                   | 47,128 (46.7) | 48.1 52.7 51.8            | 45.7 49.9 49.3           | 43.7 44.3 45.1           |          |
| 76-85                   | 39,698 (39.3) | 37.7 36.6 37.1            | 40.1 38.1 38.6           | 39.8 40.2 40.0           |          |
| 86+                     | 14,185 (14.0) | 14.1 10.7* 11.1           | 14.3 12.1 12.1           | 16.5 15.5 14.9           |          |
| Female                  | 54,886 (54.3) | 55.8 55.1 56.1            | 54.6 55.6 56.1           | 56.2 54.7 53.1           |          |
| Race/ethnicity          |             |                           |                          |                          |          |
| White                   | 85,318 (84.5) | 81.6 78.3 79.7            | 81.4 80.7 82.1           | 84.5 84.9 87.0*          |          |
| Black                   | 8,495 (8.4)  | 11.8 13.0 11.4            | 11.2 11.8 9.6            | 8.5* 7.9* 6.4*           |          |
| Hispanic                | 3,001 (3.0)  | 3.3 4.2 4.2               | 3.5 3.5 3.8              | 3.1 3.2 2.4              |          |
| Asian                   | 2,227 (2.2)  | 1.7 2.4 2.5               | 1.7 1.8 2.4              | 1.9 2.0 2.3              |          |
| Other                   | 1,970 (2.0)  | 1.6 2.1 2.2               | 2.2 2.3 2.0              | 2.0 2.1 1.8              |          |
| Dual eligibility        | 24,723 (24.5) | 22.5 25.8 28.3*           | 22.0 23.1 26.2           | 24.9 22.7 24.5           |          |
| Household income†       |             |                           |                          |                          |          |
| ≤$30,000                | 47,442 (47.0) | 49.1 50.2 49.2            | 48.8 47.2 47.2           | 48.1 46.7 45.9           |          |
| $30,001-60,000          | 41,801 (41.4) | 40.9 39.0 39.7            | 40.4 41.2 40.9           | 40.6 41.3 42.1           |          |
| $60,001-100,000         | 9,467 (9.4)  | 8.2 9.0 9.0               | 8.9 9.5 9.4              | 9.2 9.5 9.6              |          |
| $100,001-150,000        | 1,760 (1.7)  | 1.4 1.3 1.6               | 1.5 1.6 1.8              | 1.7 2.0 1.8              |          |
| >$150,000               | 541 (0.5)    | 0.5 0.4 0.5               | 0.4 0.5 0.7              | 0.5 0.5 0.6              |          |
| Pre-AMI comorbidities and cardiovascular procedures§ |             |                           |                          |                          |          |
| Adjusted Charlson comorbidity index¶ |             |                           |                          |                          |          |
| 0                       | 21,946 (21.7) | 18.0 22.9* 26.7*          | 18.6 21.2 23.8*          | 18.8 19.6 22.1*          |          |
| 1-2                     | 40,745 (40.3) | 39.4 39.6 42.3           | 38.9 41.0 40.9           | 38.2 39.0 40.6           |          |
| 3-5                     | 29,876 (29.6) | 32.3 29.9 24.2*          | 31.7 29.2 27.9           | 32.4 32.2 29.3           |          |
| 6-8                     | 7,102 (7.0)  | 8.4 6.4 5.8*             | 9.1 7.3 6.1             | 9.0 7.7 6.8             |          |
| 9+                      | 1,342 (1.3)  | 1.9 1.2 1.1              | 1.8 1.2 1.3             | 1.6 1.6 1.2             |          |
### Baseline comorbidities and procedures

| Patient characteristics | Full cohort | Pre-AMI statin adherence | Post-AMI statin adherence | Adherent |
|-------------------------|-------------|--------------------------|---------------------------|----------|
|                         | N=101,011   | Sev NA n=6,892            | Sev NA n=4,026            | Sev NA n=3,622 |
|                         | n (%)       | Mod NA n=4,193            | Mod NA n=6,926            | Mod NA n=8,417 |
|                         |             | Adh n=5,188               | Adh n=10,829              | Adh n=50,918 |

#### Baseline AMI comorbidities and procedures

| Prior AMI | Dementia/Alzheimer's | Depression | CABG | PTCA/stent | Ischemic heart disease | Unstable angina | Lipid abnormalities | Rhabdomyolysis/myopathy |
|-----------|----------------------|------------|------|------------|------------------------|-----------------|---------------------|-------------------------|
| 4,288 (4.2) | 9,396 (9.3)      | 15,207 (15.1) | 1,064 (1.1) | 6,748 (6.7) | 60,303 (59.7) | 5,401 (5.3) | 90,639 (89.7) | 6,570 (6.5) |
| 10.6 | 16.2 | 16.2 | 1.0 | 8.6 | 65.3 | 6.6 | 88.5 | 8.8 |
| 8.7 | 15.0 | 15.0 | 0.9 | 6.4 | 58.4* | 5.1 | 87.9 | 7.8 |
| 3.3* | 14.6 | 14.6 | 0.9 | 5.2* | 47.1* | 4.3 | 87.0 | 6.7 |
| 3.6* | 4.6 | 4.6 | 1.2 | 7.3 | 65.9 | 6.6 | 90.0 | 8.3 |
| 4.1 | 15.8 | 15.8 | 1.2 | 5.9* | 61.4 | 5.8 | 90.4 | 6.6 |
| 3.6* | 14.9 | 14.9 | 1.2 | 5.7 | 56.3* | 4.5 | 90.1 | 6.5 |
| 4.0 | 16.4 | 16.4 | 1.2 | 6.4 | 59.6* | 5.7 | 90.7 | 7.0 |

#### Pre-AMI medications

| New user of statin | Concurrent medications | ACE inhibitor/ARB | Beta-blocker | P2Y12 inhibitor | Calcium channel blocker | Aldosterone antagonist |
|-------------------|------------------------|-------------------|-------------|-----------------|------------------------|------------------------|
| 10,220 (10.1)     | 65,524 (64.9)          | 63,437 (62.8)     | 31,546 (31.2) | 35,730 (35.4) | 5,002 (5.0)            |
| 9.8 | 55.8 | 57.2 | 31.3 | 4.9 | 31.3 |
| 7.1 | 57.9 | 54.8 | 31.5 | 4.3 | 77.7 |
| 7.5 | 57.3 | 50.8* | 32.4 | 3.9 | 72.2* |
| 20.8* | 63.1* | 62.2* | 34.1 | 5.8 | 80.8 |
| 11.4 | 64.8* | 62.9* | 34.1 | 4.8 | 79.2 |
| 9.6 | 64.6* | 60.1 | 36.1* | 4.6 | 76.6* |
| 24.4* | 64.5* | 62.9* | 33.4 | 5.2 | 80.5 |
| 14.9* | 66.7* | 64.1* | 33.1 | 5.3 | 81.0 |
| 8.0 | 67.4* | 65.8* | 31.8 | 5.1 | 79.7 |

#### Characteristics of index AMI hospitalization

| Clinical diagnoses and procedures | Full cohort | Pre-AMI statin adherence | Post-AMI statin adherence | Adherent |
|----------------------------------|-------------|--------------------------|---------------------------|----------|
|                                  | N=101,011   | Sev NA n=6,892            | Sev NA n=4,026            | Sev NA n=3,622 |
|                                  | n (%)       | Mod NA n=4,193            | Mod NA n=6,926            | Mod NA n=8,417 |
|                                  |             | Adh n=5,188               | Adh n=10,829              | Adh n=50,918 |

| Subendocardial infarction | CAVG | PTCA/stent | Antiplatelet use | Cardiac catheterization | Angiocardiology | Cardiogenic shock | Cardiac dysrhythmia |
|---------------------------|------|------------|-----------------|------------------------|----------------|------------------|-------------------|
| 79,978 (79.2)            | 6,778 (6.7) | 39,479 (39.1) | 4,627 (4.6) | 61,062 (60.5) | 61,122 (60.5) | 2,150 (2.1) | 31,326 (31.0) |
| 81.3 | 4.5 | 35.1 | 4.6 | 57.2 | 57.3 | 1.4 | 31.3 |
| 77.7 | 7.8* | 42.2* | 5.0 | 65.2* | 64.6* | 1.9 | 29.5 |
| 72.2* | 9.5* | 50.2* | 5.5 | 70.5* | 68.4* | 2.8 | 29.0 |
| 80.8 | 5.2 | 32.2 | 4.0 | 54.8 | 55.1 | 2.1 | 30.4 |
| 79.2 | 6.4 | 39.0 | 4.7 | 61.2 | 61.3 | 2.0 | 29.6 |
| 76.6* | 7.6* | 43.9* | 5.0 | 64.9* | 64.7* | 2.6 | 29.4 |
| 80.5 | 6.2 | 30.7 | 3.5 | 52.4 | 52.0* | 2.0 | 31.8 |
| 81.0 | 6.1 | 34.2 | 3.9 | 56.5 | 56.2 | 2.2 | 32.0 |
| 79.7 | 6.7 | 39.2 | 4.6 | 60.1 | 60.5 | 2.1 | 31.7 |
| Patient characteristics | Full cohort | Sev NA | Mod NA | Adh | Pre-AMI statin adherence | Post-AMI statin adherence | Adherent |
|-------------------------|------------|--------|--------|-----|------------------------|-------------------------|----------|
|                         | N=101,011  | n=6,892| n=4,193| n=5,188 |                         |                         |          |
| Hypotension             | 4,999 (4.9)| 4.7    | 4.5    | 5.0 |                         |                         |          |
| Acute renal failure     | 14,774 (14.6)| 14.3 | 13.7 | 13.3 |                         |                         |          |
| Heart failure           | 38,222 (37.8)| 38.8 | 35.3 | 33.7*|                         |                         |          |
| Duration of hospitalization (days) |           |        |       |     |                         |                         |          |
| 1-3                     | 46,047 (45.6)| 45.6 | 46.4 | 45.8 |                         |                         |          |
| 4-6                     | 30,966 (30.7)| 31.9 | 30.3 | 29.8 |                         |                         |          |
| 7-11                    | 16,714 (16.5)| 15.7 | 16.1 | 16.6 |                         |                         |          |
| 12+                     | 7,284 (7.2)| 6.8   | 7.2   | 7.8  |                         |                         |          |
| Admission to intensive care |          |        |       |     |                         |                         |          |
| None                    | 25,146 (24.9)| 26.1 | 23.6 | 20.6*|                         |                         |          |
| Coronary care unit only | 23,706 (23.5)| 23.4 | 24.7 | 25.9 |                         |                         |          |
| Intensive care unit only | 41,551 (41.1)| 41.0 | 40.7 | 41.0 |                         |                         |          |
| Both                    | 10,608 (10.5)| 9.4  | 11.0  | 12.5 |                         |                         |          |
| Cardiologist consultation | 87,858 (87.0)| 85.7 | 87.2 | 89.3*|                         |                         |          |
| 30-day post-AMI follow-up |          |        |       |     |                         |                         |          |
| None                    | 14,873 (14.7)| 18.4 | 16.0 | 14.1*|                         |                         |          |
| Primary care provider only | 29,301 (29.0)| 31.3 | 28.9 | 26.0*|                         |                         |          |
| Cardiologist only       | 19,161 (19.0)| 17.4 | 19.9 | 19.7 |                         |                         |          |
| Both                    | 37,676 (37.3)| 32.9 | 35.2 | 40.2*|                         |                         |          |
| Post-AMI medications    |          |        |       |     |                         |                         |          |
| Change in simvastatin- equivalent ADD## (mean ± std) |        | 4.4±  | 20.1± | 7.5± | 13.2± | -16.5± | 4.4± | 10.8± | -17.7± | 3.2± | 8.6± |          |
| Concurrent medications*** |          | 33.2 | 42.4 | 37.4* | 40.5* | 40.1 | 28.6* | 33.0* | 38.8 | 28.2* | 27.7* |          |
| ACE inhibitor/ARB       | 72,011 (71.3)| 61.4 | 71.9* | 75.7* | 63.2 | 70.7* | 73.9* | 61.8 | 69.1* | 73.3* |          |
| Beta-blocker            | 87,887 (87.0)| 77.1 | 86.5* | 90.1* | 78.7 | 85.9* | 89.5* | 80.1 | 85.6* | 89.1* |          |
| P2Y12 inhibitor         | 66,607 (65.9)| 58.2 | 68.4* | 74.0* | 57.3 | 66.1* | 69.8* | 55.7 | 63.0 | 67.0* |          |
| Calcium channel blocker | 32,162 (31.8)| 30.5 | 31.6 | 29.6 | 29.8 | 31.5 | 31.6 | 28.6 | 32.5 | 32.6 |          |
| Aldosterone antagonist  | 8,689 (8.6)| 8.5   | 8.0   | 8.6  | 9.0  | 8.5   | 8.3  | 9.4  | 9.4  | 8.5  |          |
| Patient characteristics | Full cohort | Sev NA | Mod NA | Adh | Sev NA | Mod NA | Adh | Sev NA | Mod NA | Adh |
|-------------------------|-------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|
|                         | N=101,011   | n=6,892 | n=4,193 | n=5,188 | n=4,026 | n=6,926 | n=10,829 | n=3,622 | n=8,417 | n=50,918 |
|                          |             |       |       |     |       |       |     |       |       |     |
| Post-AMI clinical events |             |       |       |     |       |       |     |       |       |     |
| Recurrent AMI†††         | 6,386 (6.3) | 7.1   | 6.9   | 5.8 | 6.5   | 6.7   | 5.9 | 6.5   | 7.8   | 6.0 |
| Stroke‡‡‡                 | 972 (1.0)   | 1.2   | 1.1   | 1.0 | 1.3   | 1.0   | 0.7 | 1.3   | 1.5   | 0.8 |
| Statin intensity§§§       |             |       |       |     |       |       |     |       |       |     |
| Pre-AMI                  |             |       |       |     |       |       |     |       |       |     |
| Low intensity            | 10,851 (10.7)| 12.3 | 8.7*  | 12.7| 10.0  | 7.7*  | 10.8| 11.6  | 10.0  | 11.0 |
| Moderate intensity       | 68,527 (67.8)| 66.3 | 65.1  | 69.1| 66.3  | 64.8  | 68.6| 68.3  | 67.2  | 68.6 |
| High intensity           | 21,633 (21.4)| 21.4 | 26.2* | 18.2| 23.7  | 27.5* | 20.6| 20.0  | 22.8  | 20.4 |
| Post-AMI                 |             |       |       |     |       |       |     |       |       |     |
| Low intensity            | 8,256 (8.2) | 10.8  | 6.2*  | 7.2*| 9.7   | 6.3*  | 7.4*| 10.4  | 8.6   | 8.1 |
| Moderate intensity       | 64,773 (64.1)| 65.5 | 60.7* | 63.9| 65.0  | 61.9  | 62.5| 67.3  | 64.5  | 64.5 |
| High intensity           | 27,982 (27.7)| 23.7 | 33.1* | 28.9*| 25.3  | 31.8* | 30.0*| 22.3  | 26.9  | 27.3 |

Percentages are column percents. Statin adherence was measured separately in the 6 months pre-AMI and the 6 months post-AMI. Adherence was categorized as follows: severely nonadherent (PDC <40%), moderately nonadherent (PDC 40-79.9%), and adherent (PDC ≥80%). For absolute standardized difference calculations, all statin adherence change groups are compared to the group who was severely nonadherent both pre- and post-AMI.

* Absolute standardized difference ≥10% compared to the reference group (severely nonadherent both pre- and post-AMI).
† Enrolled in Medicare and Medicaid.
‡ Median household income of US Census block groups for individuals aged 65 and older.
§ Measured in the 12 months prior to the index AMI hospital admission date.
∥ CCI score does not include counts for AMI and dementia.
# CCI definition.
** Medicare Chronic Conditions Data Warehouse definition.
†† First prescription claim for a statin was identified during the 6 months prior to the index AMI hospital admission date.
‡‡ At least one prescription fill within medication class during the 6 months prior to the index AMI hospital admission date.
§§ Index AMI had diagnosis code for subendocardial infarction, compared to transmural infarction.
∥∥ Primary care physician, physician assistant, or nurse practitioner.
## Continuous weighted average of the simvastatin-equivalent average daily dose in the post-AMI period minus the weighted average in the pre-AMI period.
Dose equivalency calculations were made as follows: fluvastatin, pravastatin, and lovastatin doses in mg were divided by 4, 2, and 2, respectively; atorvastatin, rosuvastatin, and pitavastatin doses were multiplied by 2, 4, and 10, respectively.

### Intensity of the last statin prescription fill before the index AMI.

#### Intensity of the first statin prescription fill after the index AMI.

**Abbreviations:** ACE, angiotensin-converting enzyme; ADD, average daily dose; Adh, Adherent; AMI, acute myocardial infarction; ARB, angiotensin II receptor blocker; CABG, coronary artery bypass surgery; CCI, Charlson comorbidity index; ICD-9, International Classification of Diseases, Ninth Revision; Mod NA, moderately nonadherent; PDC, proportion of days covered; PTCA, percutaneous transluminal coronary angioplasty; Sev NA, severely nonadherent; std, standard deviation.
Table S2. Full model results for the association between all-cause mortality and post-AMI statin adherence, while adjusting for pre-AMI statin adherence.

| Patient characteristics | HR (95% CI) |
|-------------------------|-------------|
| **Post-AMI statin adherence*** |             |
| Severely nonadherent     | 1.          |
| Moderately nonadherent   | 0.89 (0.84, 0.95) |
| Adherent                 | 0.79 (0.74, 0.83) |
| **Pre-AMI statin adherence*** |         |
| Severely nonadherent     | 1.          |
| Moderately nonadherent   | 1.05 (0.99, 1.11) |
| Adherent                 | 1.11 (1.05, 1.17) |
| **Sociodemographics**    |             |
| Age                      |             |
| 66-75                    | 1.          |
| 76-85                    | 1.34 (1.28, 1.39) |
| 86+                      | 1.94 (1.85, 2.04) |
| Female                   | 0.83 (0.80, 0.86) |
| Race/ethnicity           |             |
| White                    | 1.          |
| Black                    | 0.90 (0.85, 0.96) |
| Hispanic                 | 0.86 (0.78, 0.95) |
| Asian                    | 0.83 (0.73, 0.93) |
| Other                    | 0.85 (0.75, 0.97) |
| Dual eligibility‡        | 1.12 (1.08, 1.17) |
| Household income‡        |             |
| ≤$30,000                 | 1.          |
| $30,001-60,000           | 1.01 (0.98, 1.05) |
| $60,001-100,000          | 0.97 (0.91, 1.04) |
| $100,001-150,000         | 1.02 (0.89, 1.16) |
| >$150,000                | 0.95 (0.75, 1.20) |
| **Pre-AMI comorbidities and cardiovascular procedures§§** | |
| Adjusted Charlson comorbidity index∥ | | |
| 0                        | 1.          |
| 1-2                      | 1.48 (1.39, 1.58) |
| 3-5                      | 2.18 (2.05, 2.33) |
| 6-8                      | 2.79 (2.58, 3.02) |
| 9+                       | 5.04 (4.54, 5.60) |
| Prior AMI§                | 1.14 (1.07, 1.22) |
| Dementia/Alzheimer's disease** | 1.32 (1.25, 1.38) |
| Depression               | 1.07 (1.03, 1.12) |
| CABG                     | 0.51 (0.41, 0.64) |
| PTCA/stent               | 0.81 (0.74, 0.87) |
| Ischemic heart disease   | 1.05 (1.01, 1.10) |
| Unstable angina          | 1.05 (0.98, 1.13) |
| Lipid abnormalities§§§   | 0.78 (0.74, 0.83) |
| Patient characteristics                     | HR (95% CI)   |
|--------------------------------------------|--------------|
| Rhabdomyolysis/myopathy                    | 0.94 (0.88, 1.00) |
| Pre-AMI medications                        |              |
| New user of statin††                       | 0.90 (0.85, 0.95) |
| Concurrent medications§§                   |              |
| ACE inhibitor/ARB                          | 0.96 (0.92, 0.99) |
| Beta-blocker                               | 1.07 (1.03, 1.12) |
| P2Y_{12} inhibitor                         | 1.08 (1.03, 1.12) |
| Calcium channel blocker                    | 1.07 (1.03, 1.12) |
| Aldosterone receptor antagonist             | 1.04 (0.97, 1.12) |
| Characteristics of index AMI hospitalization|              |
| Clinical diagnoses and procedures          |              |
| Subendocardial infarction§§                | 1.10 (1.04, 1.15) |
| CABG                                       | 0.33 (0.29, 0.38) |
| PTCA/stent                                 | 0.78 (0.74, 0.83) |
| Antiplatelet use                           | 0.89 (0.80, 0.99) |
| Cardiac catheterization                    | 0.85 (0.79, 0.91) |
| Angiocardiography                          | 0.81 (0.75, 0.87) |
| Cardiogenic shock                          | 1.01 (0.89, 1.16) |
| Cardiac dysrhythm                          | 1.09 (1.05, 1.13) |
| Hypotension                                | 0.98 (0.90, 1.06) |
| Acute renal failure                        | 1.13 (1.08, 1.18) |
| Heart failure                              | 1.50 (1.44, 1.55) |
| Duration of hospitalization (days)         |              |
| 1-3                                        | 1.           |
| 4-6                                        | 1.14 (1.10, 1.19) |
| 7-11                                       | 1.23 (1.17, 1.29) |
| 12+                                        | 1.36 (1.27, 1.46) |
| Admission to intensive care                |              |
| None                                       | 1.           |
| Coronary care unit only                    | 0.97 (0.92, 1.02) |
| Intensive care unit only                   | 0.99 (0.95, 1.03) |
| Both                                       | 0.93 (0.87, 1.00) |
| Cardiologist consultation                  | 1.00 (0.95, 1.05) |
| 30-day post-AMI follow-up                  |              |
| None                                       | 1.           |
| Primary care provider†† only               | 0.87 (0.83, 0.92) |
| Cardiologist only                          | 0.75 (0.70, 0.80) |
| Both                                       | 0.81 (0.77, 0.86) |
| Post-AMI medications                       |              |
| Change in simvastatin-equivalent average daily dose§§ | 1.00 (1.00, 1.00) |
| Concurrent medications***                 |              |
| ACE inhibitor/ARB                          | 0.87 (0.83, 0.90) |
| Beta-blocker                               | 0.92 (0.88, 0.97) |
| P2Y_{12} inhibitor                         | 0.93 (0.89, 0.97) |
| Calcium channel blocker                    | 0.89 (0.85, 0.93) |
| Aldosterone receptor antagonist             | 1.26 (1.19, 1.33) |
**Patient characteristics**

| Post-AMI clinical events                                      | HR (95% CI) |
|--------------------------------------------------------------|-------------|
| Hospitalization for recurrent AMI†††                        | 1.96 (1.86, 2.06) |
| Hospitalization for stroke‡‡‡                                | 1.82 (1.61, 2.06) |

These are the results for the fully adjusted Cox proportional hazards model to estimate the association between all-cause mortality and **post-AMI** statin adherence, while adjusting for **pre-AMI** statin adherence.

* Statin adherence was measured separately in the 6 months pre-AMI and the 6 months post-AMI. Adherence was categorized as follows: severely nonadherent (PDC <40%), moderately nonadherent (PDC 40-79.9%), and adherent (PDC ≥80%).
† Enrolled in Medicare and Medicaid.
‡ Median household income of US Census block groups for individuals aged 65 and older.
§ Measured in the 12 months prior to the index AMI hospital admission date.
∥ CCI score does not include counts for AMI and dementia.
# CCI definition.
** Medicare Chronic Conditions Data Warehouse definition.
†† First prescription claim for a statin was identified during the 6 months prior to the index AMI hospital admission date.
‡‡ At least one prescription fill within medication class during the 6 months prior to the index AMI hospital admission date.
§§ Index AMI had diagnosis code for subendocardial infarction, compared to transmural infarction.
∥∥ Primary care physician, physician assistant, or nurse practitioner.
## Continuous weighted average of the simvastatin-equivalent average daily dose in the post-AMI period minus the weighted average in the pre-AMI period. Dose equivalency calculations were made as follows: fluvastatin, pravastatin, and lovastatin doses in mg were divided by 4, 2, and 2, respectively; atorvastatin, rosvastatin, and pitavastatin doses were multiplied by 2, 4, and 10, respectively.
*** At least one prescription fill within medication class during the index AMI hospitalization period or within 6 months after index AMI discharge date.
††† Inpatient ICD-9 diagnosis code of 410.x1 in the primary or secondary discharge field within 6 months after index AMI discharge date.
‡‡‡ Inpatient ICD-9 diagnosis code of 430, 431, 433.x1, 434.x1, or 436 in the primary discharge field within 6 months after index AMI discharge date.
§§§ Inpatient or outpatient ICD-9 diagnosis code of 272.xx in any position.

Abbreviations: ACE, angiotensin-converting enzyme; AMI, acute myocardial infarction; ARB, angiotensin II receptor blocker; CABG, coronary artery bypass surgery; CCI, Charlson comorbidity index; CI, confidence interval; HR, hazard ratio; ICD-9, International Classification of Diseases, Ninth Revision; PDC, proportion of days covered; PTCA, percutaneous transluminal coronary angioplasty.
Table S3. Full model results for the association between all-cause mortality and change in statin adherence after acute myocardial infarction (AMI).

| Patient characteristics | HR (95% CI) |
|-------------------------|------------|
| **Statin adherence change*** |  |
| **Pre-AMI adherence** |  |
| Severely nonadherent | 1. |  |
| Moderately nonadherent | 0.89 (0.80, 0.99) |  |
| Adherent | 0.83 (0.75, 0.92) |  |
| **Post-AMI adherence** |  |
| Severely nonadherent | 1.11 (1.01, 1.22) |  |
| Moderately nonadherent | 0.90 (0.82, 0.98) |  |
| Adherent | 0.84 (0.77, 0.91) |  |
| **Sociodemographics** |  |
| Age |  |
| 66-75 | 1. |  |
| 76-85 | 1.34 (1.28, 1.39) |  |
| 86+ | 1.94 (1.84, 2.03) |  |
| Female | 0.83 (0.80, 0.86) |  |
| Race/ethnicity |  |
| White | 1. |  |
| Black | 0.90 (0.85, 0.96) |  |
| Hispanic | 0.86 (0.78, 0.95) |  |
| Asian | 0.83 (0.73, 0.93) |  |
| Other | 0.85 (0.75, 0.97) |  |
| Dual eligibility† | 1.12 (1.08, 1.17) |  |
| Household income‡ |  |
| ≤$30,000 | 1. |  |
| $30,001-60,000 | 1.01 (0.98, 1.05) |  |
| $60,001-100,000 | 0.97 (0.91, 1.04) |  |
| $100,001-150,000 | 1.02 (0.89, 1.16) |  |
| >$150,000 | 0.95 (0.75, 1.20) |  |
| Pre-AMI comorbidities and cardiovascular procedures§ |  |
| Adjusted Charlson comorbidity index¶ |  |
| 0 | 1. |  |
| 1-2 | 1.48 (1.39, 1.58) |  |
| 3-5 | 2.18 (2.05, 2.33) |  |
| 6-8 | 2.79 (2.58, 3.02) |  |
| 9+ | 5.04 (4.53, 5.59) |  |
| Baseline comorbidities and procedures |  |
| Prior AMI‖ | 1.14 (1.07, 1.22) |  |
| Dementia/Alzheimer's disease** | 1.32 (1.25, 1.38) |  |
| Depression | 1.07 (1.03, 1.12) |  |
| CABG | 0.51 (0.41, 0.64) |  |
| PTCA/stent | 0.81 (0.74, 0.87) |  |
| Ischemic heart disease | 1.05 (1.01, 1.10) |  |
| Patient characteristics                          | HR (95% CI)          |
|-------------------------------------------------|----------------------|
| Unstable angina                                 | 1.05 (0.97, 1.13)    |
| Lipid abnormalities§§§                         | 0.78 (0.74, 0.83)    |
| Rhabdomyolysis/myopathy                         | 0.94 (0.88, 1.00)    |
| Pre-AMI medications                             |                      |
| New user of statin††                            | 0.90 (0.84, 0.95)    |
| Concurrent medications‡‡                       |                      |
| ACE inhibitor/ARB                               | 0.96 (0.92, 0.99)    |
| Beta-blocker                                    | 1.07 (1.03, 1.12)    |
| P2Y₁₂ inhibitor                                 | 1.08 (1.03, 1.12)    |
| Calcium channel blocker                         | 1.07 (1.03, 1.12)    |
| Aldosterone receptor antagonist                 | 1.04 (0.97, 1.12)    |
| Characteristics of index AMI hospitalization    |                      |
| Clinical diagnoses and procedures               |                      |
| Subendocardial infarction§§                     | 1.10 (1.04, 1.15)    |
| CABG                                            | 0.33 (0.29, 0.38)    |
| PTCA/stent                                      | 0.79 (0.74, 0.83)    |
| Antiplatelet use                                | 0.89 (0.80, 0.99)    |
| Cardiac catheterization                         | 0.85 (0.78, 0.91)    |
| Angiocardiography                               | 0.81 (0.75, 0.87)    |
| Cardiogenic shock                               | 1.01 (0.88, 1.16)    |
| Cardiac dysrhythmia                             | 1.09 (1.05, 1.13)    |
| Hypotension                                     | 0.98 (0.90, 1.06)    |
| Acute renal failure                             | 1.13 (1.08, 1.18)    |
| Heart failure                                   | 1.50 (1.44, 1.55)    |
| Duration of hospitalization (days)              |                      |
| 1-3                                             | 1.                  |
| 4-6                                             | 1.14 (1.10, 1.19)    |
| 7-11                                            | 1.23 (1.17, 1.29)    |
| 12+                                            | 1.36 (1.27, 1.46)    |
| Admission to intensive care                     |                      |
| None                                            | 1.                  |
| Coronary care unit only                         | 0.97 (0.92, 1.02)    |
| Intensive care unit only                        | 0.99 (0.95, 1.03)    |
| Both                                            | 0.93 (0.87, 1.00)    |
| Cardiologist consultation                       | 1.00 (0.95, 1.05)    |
| 30-day post-AMI follow-up                       |                      |
| None                                            | 1.                  |
| Primary care provider†# only                    | 0.87 (0.83, 0.92)    |
| Cardiologist only                               | 0.75 (0.70, 0.80)    |
| Both                                            | 0.81 (0.77, 0.86)    |
| Post-AMI medications                            |                      |
| Change in simvastatin-equivalent average daily dose## | 1.00 (1.00, 1.00) |
| Concurrent medications***                      |                      |
| ACE inhibitor/ARB                               | 0.87 (0.83, 0.91)    |
| Beta-blocker                                    | 0.92 (0.88, 0.97)    |
| P2Y₁₂ inhibitor                                 | 0.93 (0.89, 0.97)    |
| Calcium channel blocker                         | 0.89 (0.85, 0.93)    |
| Patient characteristics                      | HR (95% CI) |
|---------------------------------------------|-------------|
| Aldosterone receptor antagonist             | 1.26 (1.19, 1.33) |
| Post-AMI clinical events                    |             |
| Hospitalization for recurrent AMI†††        | 1.95 (1.86, 2.06) |
| Hospitalization for stroke‡‡‡               | 1.82 (1.61, 2.06) |

These are the results for the fully adjusted Cox proportional hazards model also presented in Figure 5 within the manuscript. The purpose of this model was to estimate the association between all-cause mortality and change in statin adherence.

* Statin adherence was measured separately in the 6 months pre-AMI and the 6 months post-AMI. Adherence was categorized as follows: severely nonadherent (PDC <40%), moderately nonadherent (PDC 40-79.9%), and adherent (PDC ≥80%). Change in statin adherence was defined as a categorical change in statin adherence.

† Enrolled in Medicare and Medicaid.
‡ Median household income of US Census block groups for individuals aged 65 and older.
§ Measured in the 12 months prior to the index AMI hospital admission date.
∥ CCI score does not include counts for AMI and dementia.
# CCI definition.
** Medicare Chronic Conditions Data Warehouse definition.
†† First prescription claim for a statin was identified during the 6 months prior to the index AMI hospital admission date.
‡‡ At least one prescription fill within medication class during the 6 months prior to the index AMI hospital admission date.
§§ Index AMI had diagnosis code for subendocardial infarction, compared to transmural infarction.
∥∥ Primary care physician, physician assistant, or nurse practitioner.
### Continuous weighted average of the simvastatin-equivalent average daily dose in the post-AMI period minus the weighted average in the pre-AMI period. Dose equivalency calculations were made as follows: fluvastatin, pravastatin, and lovastatin doses in mg were divided by 4, 2, and 2, respectively; atorvastatin, rosuvastatin, and pitavastatin doses were multiplied by 2, 4, and 10, respectively.
*** At least one prescription fill within medication class during the index AMI hospitalization period or within 6 months after index AMI discharge date.
††† Inpatient ICD-9 diagnosis code of 410.x1 in the primary or secondary discharge field within 6 months after index AMI discharge date.
‡‡‡ Inpatient ICD-9 diagnosis code of 430, 431, 433.x1, 434.x1 or 436 in the primary discharge field within 6 months after index AMI discharge date.
§§§ Inpatient or outpatient ICD-9 diagnosis code of 272.xx in any position.

**Abbreviations:** ACE, angiotensin-converting enzyme; AMI, acute myocardial infarction; ARB, angiotensin II receptor blocker; CABG, coronary artery bypass surgery; CCI, Charlson comorbidity index; CI, confidence interval; HR, hazard ratio; ICD-9, International Classification of Diseases, Ninth Revision; PDC, proportion of days covered; PTCA, percutaneous transluminal coronary angioplasty.
Table S4. Crude estimates and models adjusted iteratively based on the timing of covariate measurement for the association between all-cause mortality and change in statin adherence after acute myocardial infarction (AMI).

| Statin adherence change after AMI | Pre-AMI adherence | Post-AMI adherence | Crude estimates | Sociodem + Pre | Sociodem + Pre + Hosp | Fully adjusted model† |
|----------------------------------|------------------|-------------------|-----------------|----------------|------------------------|------------------------|
|                                 |                  |                   | HR (95% CI)     |                |                        |                        |
| Severe nonadherent               |                  |                   |                 |                |                        |                        |
| Severe nonadherent               |                  |                   | 1.00            | 1.00           | 1.00                   | 1.00                   |
| Moderately nonadherent           |                  |                   | 0.69 (0.62, 0.77)* | 0.72 (0.64, 0.80)* | 0.77 (0.69, 0.85)* | 0.82 (0.74, 0.91) | 0.89 (0.80, 0.99)  |
| Adherent                         |                  |                   | 0.58 (0.52, 0.64)* | 0.59 (0.53, 0.66)* | 0.67 (0.61, 0.75)* | 0.75 (0.68, 0.84) | 0.83 (0.75, 0.92)  |
| Moderately nonadherent           |                  |                   | 1.10 (1.00, 1.21) | 1.10 (1.00, 1.21) | 1.11 (1.01, 1.22) | 1.09 (0.99, 1.20) | 1.11 (1.01, 1.22) |
| Adherent                         |      |                   | 0.75 (0.69, 0.82)* | 0.77 (0.71, 0.85)* | 0.81 (0.74, 0.89)* | 0.84 (0.77, 0.92) | 0.90 (0.82, 0.98)  |
| Severe nonadherent               |                  |                   | 0.65 (0.60, 0.70)* | 0.66 (0.61, 0.71)* | 0.72 (0.66, 0.78)* | 0.76 (0.70, 0.83)* | 0.84 (0.77, 0.91)  |
| Moderately nonadherent           |                  |                   | 1.18 (1.07, 1.30) | 1.14 (1.03, 1.25) | 1.14 (1.04, 1.25) | 1.07 (0.97, 1.18) | 1.09 (0.99, 1.20)  |
| Adherent                         |                  |                   | 1.00 (0.92, 1.08) | 0.98 (0.90, 1.06) | 1.00 (0.92, 1.08) | 0.99 (0.92, 1.07) | 1.04 (0.96, 1.13)  |
| Moderate nonadherent             |                  |                   | 0.75 (0.71, 0.80)* | 0.73 (0.69, 0.78)* | 0.78 (0.73, 0.83)* | 0.80 (0.75, 0.85)* | 0.88 (0.82, 0.94)  |

Cox proportional hazards models. The first model on the left (“Crude estimates”) is unadjusted for other covariates. Each model is then adjusted for an additional set of covariates based on when the variables were measured (sociodemographics, pre-AMI comorbidities/medications, characteristics of the index AMI hospitalization, and post-AMI follow-up/medications/stroke/recurrent AMI).

* Point estimate does not fall within the 95% confidence interval for the fully adjusted model.
† Fully adjusted model also presented in Figure 5 within the manuscript.

Abbreviations: AMI, acute myocardial infarction; CI, confidence interval; Hosp, measures from the index AMI hospitalization; HR, hazard ratio; Pre, pre-AMI measures; Sociodem, sociodemographic measures.
Table S5. Sensitivity analyses involving changing variable definitions or adding new variables to the model estimating the association between all-cause mortality and change in statin adherence after acute myocardial infarction (AMI).

| Pre-AMI adherence | Post-AMI adherence | Fully adjusted model* | Conservative adherence change measure† | Add statin intensity variable‡ | Add liver disease variable§ |
|-------------------|-------------------|-----------------------|---------------------------------------|-------------------------------|---------------------------|
| Severely nonadherent | Severe nonadherent | 1. | 1. | 1. | 1. | 0.89 (0.80, 0.99) |
| | Moderately nonadherent | 0.89 (0.80, 0.99) | 0.88 (0.79, 0.98) | 0.85 (0.77, 0.95) | 0.79 (0.71, 0.88) | 0.83 (0.75, 0.92) |
| | Adherent | 0.83 (0.75, 0.92) | 0.83 (0.74, 0.92) | 0.79 (0.71, 0.88) | 0.83 (0.75, 0.92) |
| Moderately nonadherent | Severe nonadherent | 1.11 (1.01, 1.22) | 1.10 (1.00, 1.21) | 1.10 (1.00, 1.21) | 1.11 (1.01, 1.22) |
| | Moderately nonadherent | 0.90 (0.82, 0.98) | 0.89 (0.82, 0.98) | 0.86 (0.79, 0.94) | 0.90 (0.82, 0.98) |
| | Adherent | 0.84 (0.77, 0.91) | 0.84 (0.77, 0.91) | 0.80 (0.74, 0.87) | 0.84 (0.77, 0.91) |
| Adherent | Severe nonadherent | 1.09 (0.99, 1.20) | 1.09 (0.99, 1.20) | 1.09 (0.99, 1.20) | 1.09 (0.99, 1.20) |
| | Moderately nonadherent | 1.04 (0.96, 1.13) | 1.06 (0.97, 1.15) | 1.00 (0.92, 1.08) | 1.04 (0.96, 1.13) |
| | Adherent | 0.88 (0.82, 0.94) | 0.88 (0.82, 0.94) | 0.84 (0.79, 0.89) | 0.88 (0.82, 0.94) |

All four models are estimating the association between all-cause mortality and change in statin adherence using Cox proportional hazards models. No point estimates from sensitivity analyses fell outside of the 95% confidence intervals from the fully adjusted model.

* Fully adjusted model also presented in Figure 5 within the manuscript.

† This model changed the definition of the statin adherence change measure to make it more conservative, attempting to eliminate the influence of small changes in adherence near the category cutoffs. This measure required a categorical change in statin adherence to also be at least a 10% absolute difference from pre- to post-AMI PDC (e.g. a change from pre-AMI PDC of 78% to post-AMI PDC of 84% would not be considered an increase in adherence from “moderately nonadherent” to “adherent”; instead, it would be defined as no change in adherence from “moderately nonadherent” to “moderately nonadherent”. Changing the definition of this measure resulted in 571 patients being reclassified from a decrease in adherence to no change and 624 patients being reclassified from an increase in adherence to no change.

‡ Statin intensity was measured using the LAST statin prescription claim filled BEFORE the index AMI hospitalization and using the FIRST claim filled AFTER the index hospitalization discharge. Statin intensity was measured using the 2013 American College of Cardiology/ American Heart Association Guideline on Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults. Both of these variables were added to the model and the variable for simvastatin-equivalent change in average daily dose was removed from the model.

§ CCI measures of liver disease were added as separate variables to the model. The CCI score variable was further adjusted by not including mild and moderate/severe liver disease (as previously described, CCI measures of previous AMI and dementia were not included in the CCI score variable).

Abbreviations: AMI, acute myocardial infarction; CCI, Charlson comorbidity index; CI, confidence interval; HR, hazard ratio; PDC, proportion of days covered.
Table S6. Sensitivity analyses with restricted study eligibility estimating the association between all-cause mortality and change in statin adherence after acute myocardial infarction (AMI).

| Statin adherence change after AMI | Prevalent statin users*†,‡ | Persistent statin users§ | Prevalent & persistent users∥,‡ | Multiple pre-AMI statin fills# | Prevalent users with multiple pre-AMI fills**¦,‡ | No AMI or stroke 6-month post-AMI†† |
|----------------------------------|-----------------------------|---------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|
| Pre-AMI adherence | Post-AMI adherence | N=101,011 | N=90,791 | N=95,228 | N=85,008 | N=92,674 | N=86,452 | N=93,770 |
| Sev NA | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. |
| Mod NA | 0.89 (0.80, 0.99) | 0.88 (0.79, 0.99) | 0.86 (0.75, 0.99) | 0.85 (0.74, 0.98) | 0.85 (0.74, 0.97) | 0.84 (0.73, 0.95) | 0.88 (0.78, 0.99) |
| Adherent | 0.83 (0.75, 0.92) | 0.81 (0.72, 0.90) | 0.86 (0.76, 0.98) | 0.84 (0.73, 0.96) | 0.88 (0.78, 0.99) | 0.86 (0.76, 0.97) | 0.83 (0.74, 0.93) |
| Sev NA | 1.11 (1.01, 1.22) | 1.09 (0.99, 1.21) | 1.13 (1.02, 1.26) | 1.12 (0.99, 1.26) | 1.12 (1.00, 1.24) | 1.10 (0.98, 1.23) | 1.09 (0.98, 1.21) |
| Mod NA | 0.90 (0.82, 0.98) | 0.88 (0.80, 0.97) | 0.92 (0.83, 1.02) | 0.91 (0.81, 1.01) | 0.89 (0.81, 0.99) | 0.88 (0.79, 0.98) | 0.89 (0.81, 0.99) |
| Adherent | 0.84 (0.77, 0.91) | 0.82 (0.75, 0.89) | 0.86 (0.78, 0.95) | 0.84 (0.76, 0.94) | 0.84 (0.77, 0.93) | 0.82 (0.74, 0.91) | 0.85 (0.77, 0.93) |
| Sev NA | 1.09 (0.99, 1.20) | 1.13 (1.02, 1.25) | 1.12 (1.00, 1.25) | 1.15 (1.02, 1.30) | 1.12 (1.01, 1.25) | 1.13 (1.01, 1.27) | 1.07 (0.97, 1.19) |
| Mod NA | 1.04 (0.96, 1.13) | 1.06 (0.98, 1.16) | 1.07 (0.97, 1.18) | 1.09 (0.98, 1.21) | 1.07 (0.97, 1.17) | 1.07 (0.97, 1.18) | 1.04 (0.95, 1.14) |
| Adherent | 0.88 (0.82, 0.94) | 0.88 (0.82, 0.94) | 0.90 (0.83, 0.98) | 0.89 (0.82, 0.99) | 0.89 (0.82, 0.96) | 0.88 (0.81, 0.95) | 0.87 (0.81, 0.94) |

All seven models are estimating the association between all-cause mortality and change in statin adherence using Cox proportional hazards models. No point estimates from sensitivity analyses fell outside of the 95% confidence intervals from the fully adjusted model.

* Fully adjusted model also presented in Figure 5 within the manuscript.
† Excluded “new users” of statins who had first statin prescription fill within 6 months pre-AMI.
‡ Model not adjusted for the “new user” variable (every patient had the same value for this variable).
§ Excluded patients who had a PDC of 0% during the 6-month pre-AMI period (i.e. had no statin available during pre-AMI adherence measurement period).
∥ Excluded “new users” of statin and patients with a pre-AMI PDC of 0%
# Excluded patients with only one statin prescription fill in the 12-month pre-AMI period.
** Excluded “new users” and patients with only one statin prescription fill in the 12-month pre-AMI period.
†† Excluded patients who experienced a recurrent AMI or stroke hospitalization within 6 months after index AMI hospitalization discharge. These hospitalizations were therefore not included in model for this sensitivity analysis.

Abbreviations: AMI, acute myocardial infarction; CI, confidence interval; HR, hazard ratio; Mod NA, moderately nonadherent; PDC, proportion of days covered; Sev NA, severely nonadherent.
Table S7. Association between all-cause mortality and change in statin adherence, adjusted for changes in ACE/ARB and beta-blocker adherence, among the subgroup of prevalent users for all 3 medication classes: models adjusted iteratively based on the timing of covariate measurement and comparison to final model from manuscript.

| Statin adherence change after AMI | Pre-AMI adherence | Post-AMI adherence | HR (95% CI) |
|----------------------------------|-------------------|-------------------|-------------|
|                                  | Original fully adjusted model† (N=101,011) | Only ACE/ARB & beta-blocker adherence change + Sociodem | + Sociodem + Pre + Hosp Fully adjusted model |
| Severely nonadherent             | 1.                 | 1.                 | 1.           | 1.                      |
| Moderately nonadherent           | 0.89 (0.80, 0.99)  | 0.76 (0.65, 0.89)* | 0.77 (0.66, 0.89)* | 0.80 (0.69, 0.93) | 0.85 (0.73, 0.99) | 0.91 (0.78, 1.06) |
| Adherent                         | 0.83 (0.75, 0.92)  | 0.80 (0.69, 0.93)  | 0.79 (0.68, 0.92)  | 0.85 (0.73, 0.98)  | 0.90 (0.78, 1.05) | 0.98 (0.84, 1.13)* |
| Moderately nonadherent           | 1.11 (1.01, 1.22)  | 1.15 (1.01, 1.31)  | 1.14 (1.00, 1.30)  | 1.17 (1.03, 1.34)  | 1.14 (1.00, 1.31) | 1.16 (1.02, 1.33) |
| Moderately nonadherent           | 0.90 (0.82, 0.98)  | 0.79 (0.70, 0.90)* | 0.80 (0.70, 0.90)* | 0.82 (0.72, 0.93) | 0.84 (0.74, 0.95) | 0.88 (0.77, 1.00) |
| Adherent                         | 0.84 (0.77, 0.91)  | 0.78 (0.69, 0.88)  | 0.77 (0.69, 0.86)  | 0.80 (0.71, 0.90)  | 0.83 (0.74, 0.93) | 0.89 (0.79, 1.01) |
| Severely nonadherent             | 1.09 (0.99, 1.20)  | 1.22 (1.07, 1.39)* | 1.17 (1.03, 1.34)  | 1.16 (1.02, 1.33)  | 1.11 (0.97, 1.27) | 1.12 (0.98, 1.28) |
| Moderately nonadherent           | 1.04 (0.96, 1.13)  | 1.06 (0.95, 1.19)  | 1.03 (0.92, 1.16)  | 1.04 (0.93, 1.17)  | 1.04 (0.93, 1.16) | 1.07 (0.96, 1.21) |
| Adherent                         | 0.88 (0.82, 0.94)  | 0.86 (0.78, 0.94)  | 0.83 (0.75, 0.91)  | 0.85 (0.77, 0.93)  | 0.86 (0.78, 0.94) | 0.92 (0.84, 1.02) |

Cox proportional hazards models for the subgroup of patients (N=48,580) who were already taking the following medications before the index AMI: (1) a statin, (2) an ACE inhibitor or ARB, and (3) a beta-blocker. The first model on the left (“Original fully adjusted model”) is the primary model found in Figure 5 within the manuscript (N=101,011). The second model (“Only ACE/ARB & beta-blocker adherence change”) is only adjusted for these adherence change measures (N=48,580). Each model is then adjusted for an additional set of covariates based on when the variables were measured (sociodemographics, pre-AMI comorbidities/medications, characteristics of the index AMI hospitalization, and post-AMI follow-up/medications/stroke/recurrent AMI in the “Fully adjusted model” on the right).

* Point estimate does not fall within the 95% confidence interval for the original fully adjusted model.
† Original fully adjusted model also presented in Figure 5 within the manuscript.

**Abbreviations:** ACE inhibitor, angiotensin-converting enzyme inhibitor; AMI, acute myocardial infarction; ARB, angiotensin II receptor blocker; CI, confidence interval; Hosp, measures from the index AMI hospitalization; HR, hazard ratio; Pre, pre-AMI measures; Sociodem, sociodemographic measures.
Table S8. Full model results for the association between all-cause mortality and change in statin adherence after acute myocardial infarction, adjusted for changes in ACE/ARB and beta-blocker adherence, among the subgroup of prevalent users for all 3 medication classes (N=48,580).

| Patient characteristics | Statin adherence change* | HR (95% CI) |
|-------------------------|--------------------------|-------------|
| Pre-AMI adherence       | Post-AMI adherence       |             |
| Severe nonadherent      | 1.                       |             |
| Moderately nonadherent  | 0.91 (0.78, 1.06)        |             |
| Adherent                | 0.98 (0.84, 1.13)        |             |
| Severe nonadherent      | 1.16 (1.02, 1.33)        |             |
| Moderately nonadherent  | 0.88 (0.77, 1.00)        |             |
| Adherent                | 0.89 (0.79, 1.01)        |             |
| Severe nonadherent      | 1.12 (0.98, 1.28)        |             |
| Moderately nonadherent  | 1.07 (0.96, 1.21)        |             |
| Adherent                | 0.92 (0.84, 1.02)        |             |

| Patient characteristics | ACE inhibitor/ARB adherence change* | HR (95% CI) |
|-------------------------|------------------------------------|-------------|
| Pre-AMI adherence       | Post-AMI adherence                 |             |
| Severe nonadherent      | 1.                                 |             |
| Moderately nonadherent  | 0.82 (0.70, 0.96)                 |             |
| Adherent                | 0.84 (0.72, 0.98)                 |             |
| Severe nonadherent      | 0.92 (0.82, 1.04)                 |             |
| Moderately nonadherent  | 0.92 (0.81, 1.04)                 |             |
| Adherent                | 0.77 (0.68, 0.86)                 |             |
| Severe nonadherent      | 1.02 (0.92, 1.14)                 |             |
| Moderately nonadherent  | 0.92 (0.83, 1.02)                 |             |
| Adherent                | 0.80 (0.73, 0.87)                 |             |

| Patient characteristics | Beta-blocker adherence change* | HR (95% CI) |
|-------------------------|---------------------------------|-------------|
| Pre-AMI adherence       | Post-AMI adherence               |             |
| Severe nonadherent      | 1.                              |             |
| Moderately nonadherent  | 0.87 (0.72, 1.04)               |             |
| Adherent                | 0.85 (0.72, 1.01)               |             |
| Severe nonadherent      | 1.02 (0.86, 1.21)               |             |
| Moderately nonadherent  | 0.95 (0.82, 1.10)               |             |
| Adherent                | 0.95 (0.83, 1.10)               |             |
| Severe nonadherent      | 1.03 (0.88, 1.22)               |             |
| Moderately nonadherent  | 1.11 (0.97, 1.28)               |             |
| Adherent                | 0.97 (0.86, 1.10)               |             |

Sociodemographics

| Age          | HR (95% CI) |
|--------------|-------------|
| 66-75        | 1.          |
| 76-85        | 1.31 (1.24, 1.39) |
| 86+          | 1.87 (1.75, 2.00) |
| Female       | 0.83 (0.79, 0.88) |
| Race/ethnicity |           |
### Patient characteristics

| Characteristic          | HR (95% CI)     |
|------------------------|-----------------|
| White                  | 1.00            |
| Black                  | 0.91 (0.84, 0.99) |
| Hispanic               | 0.84 (0.73, 0.95) |
| Asian                  | 0.80 (0.68, 0.95) |
| Other                  | 0.89 (0.75, 1.06) |

### Dual eligibility

| Eligibility            | HR (95% CI)     |
|------------------------|-----------------|
| Dual eligibility †     | 1.10 (1.04, 1.16) |

### Household income

| Income Level           | HR (95% CI)     |
|------------------------|-----------------|
| ≤$30,000               | 1.00            |
| $30,001-$60,000        | 1.02 (0.97, 1.07) |
| $60,001-$100,000       | 0.97 (0.89, 1.06) |
| $100,001-$150,000      | 1.03 (0.85, 1.25) |
| >$150,000              | 1.01 (0.73, 1.40) |

### Pre-AMI comorbidities and cardiovascular procedures

#### Adjusted Charlson comorbidity index

| Index | HR (95% CI)     |
|-------|-----------------|
| 0     | 1.00            |
| 1-2   | 1.37 (1.24, 1.51) |
| 3-5   | 1.99 (1.81, 2.20) |
| 6-8   | 2.64 (2.36, 2.95) |
| 9+    | 4.22 (3.64, 4.89) |

### Baseline comorbidities and procedures

| Condition                        | HR (95% CI)     |
|----------------------------------|-----------------|
| Prior AMI                        | 1.15 (1.06, 1.24) |
| Dementia/Alzheimer's disease     | 1.24 (1.16, 1.33) |
| Depression                       | 1.05 (0.99, 1.12) |
| CABG                             | 0.51 (0.39, 0.66) |
| PTCA/stent                       | 0.82 (0.75, 0.90) |
| Ischemic heart disease           | 1.02 (0.96, 1.08) |
| Unstable angina                  | 1.10 (1.01, 1.20) |
| Lipid abnormalities§§§           | 0.80 (0.74, 0.87) |
| Rhabdomyolysis/myopathy          | 0.91 (0.83, 0.99) |

### Pre-AMI medications

| Medication                      | HR (95% CI)     |
|---------------------------------|-----------------|
| New user of statin††            | 0.95 (0.87, 1.03) |
| New user of ACE inhibitor/ARB†† | 1.01 (0.92, 1.10) |
| New user of beta-blocker††      | 0.98 (0.90, 1.07) |

### Concurrent medications‡‡

| Medication                      | HR (95% CI)     |
|---------------------------------|-----------------|
| P2Y12 inhibitor                 | 1.04 (0.99, 1.10) |
| Calcium channel blocker         | 1.05 (0.99, 1.12) |
| Aldosterone receptor antagonist | 1.07 (0.98, 1.17) |

### Characteristics of index AMI hospitalization

| Condition                        | HR (95% CI)     |
|----------------------------------|-----------------|
| Subendocardial infarction§§       | 1.08 (1.00, 1.16) |
| CABG                             | 0.35 (0.29, 0.42) |
| PTCA/stent                       | 0.80 (0.74, 0.86) |
| Antiplatelet use                 | 0.83 (0.71, 0.97) |
| Cardiac catheterization          | 0.82 (0.74, 0.91) |
| Angiocardiology                  | 0.84 (0.76, 0.93) |
| Cardiogenic shock                | 0.89 (0.73, 1.09) |
| Patient characteristics                   | HR (95% CI)            |
|------------------------------------------|------------------------|
| Cardiac dysrhythmia                      | 1.10 (1.04, 1.15)      |
| Hypotension                              | 0.96 (0.86, 1.08)      |
| Acute renal failure                      | 1.13 (1.07, 1.20)      |
| Heart failure                            | 1.48 (1.41, 1.56)      |
| Duration of hospitalization              |                        |
| 1-3                                      | 1.00 (1.00, 1.00)      |
| 4-6                                      | 1.11 (1.05, 1.17)      |
| 7-11                                     | 1.24 (1.16, 1.33)      |
| 12+                                      | 1.33 (1.21, 1.47)      |
| Admission to intensive care              |                        |
| None                                     | 1.00 (1.00, 1.00)      |
| Coronary care unit only                  | 0.96 (0.90, 1.03)      |
| Intensive care unit only                 | 0.97 (0.92, 1.03)      |
| Both                                     | 0.95 (0.87, 1.04)      |
| Cardiologist consultation                | 1.02 (0.95, 1.09)      |
| 30-day post-AMI follow-up                |                        |
| None                                     | 1.00 (1.00, 1.00)      |
| Primary care provider only               | 0.91 (0.84, 0.98)      |
| Cardiologist only                        | 0.81 (0.75, 0.89)      |
| Both                                     | 0.87 (0.81, 0.93)      |
| Post-AMI medications                     |                        |
| Change in simvastatin-equivalent average daily dose** | 1.00 (1.00, 1.00) |
| Concurrent medications***                |                        |
| P2Y12 inhibitor                          | 0.96 (0.90, 1.02)      |
| Calcium channel blocker                  | 0.86 (0.81, 0.91)      |
| Aldosterone receptor antagonist          | 1.23 (1.14, 1.32)      |
| Post-AMI clinical events                 |                        |
| Hospitalization for recurrent AMI†††     | 1.94 (1.81, 2.07)      |
| Hospitalization for stroke‡‡‡            | 1.71 (1.44, 2.03)      |

These are the results for the fully adjusted Cox proportional hazards model for the subgroup of patients (N=48,580) who were already taking the following medications before the index AMI: (1) a statin, (2) an ACE inhibitor or ARB, and (3) a beta-blocker (results for this model were also presented in the far right column ["Fully adjusted model"] of Supplemental Table S7). The purpose of this model was to estimate the association between all-cause mortality and change in statin adherence, while also adjusting for the change in ACE inhibitor/ARB adherence and the change in beta-blocker adherence.

* The HRs for the association between adherence change and mortality in this model should be interpreted with caution given the high level of correlation between adherence change for all 3 medications: statins, ACE/ARBs, and beta-blockers. Adherence was measured separately in the 6 months pre-AMI and the 6 months post-AMI. Adherence was categorized as follows: severely nonadherent (PDC <40%), moderately nonadherent (PDC 40-79.9%), and adherent (PDC ≥80%). Change in adherence was defined as a categorical change in adherence.

† Enrolled in Medicare and Medicaid.
‡ Median household income of US Census block groups for individuals aged 65 and older.
§ Measured in the 12 months prior to the index AMI hospital admission date.
∥ CCI score does not include counts for AMI and dementia.
# CCI definition.
Patient characteristics                                                                 HR (95% CI)

** Medicare Chronic Conditions Data Warehouse definition.
†† First prescription claim for medication was identified during the 6 months prior to the index AMI hospital admission date.
‡‡ At least one prescription fill within medication class during the 6 months prior to the index AMI hospital admission date.
§§ Index AMI had diagnosis code for subendocardial infarction, compared to transmural infarction.
∥∥ Primary care physician, physician assistant, or nurse practitioner.
## Continuous weighted average of the simvastatin-equivalent average daily dose in the post-AMI period minus the weighted average in the pre-AMI period. Dose equivalency calculations were made as follows: fluvastatin, pravastatin, and lovastatin doses in mg were divided by 4, 2, and 2, respectively; atorvastatin, rosvastatin, and pitavastatin doses were multiplied by 2, 4, and 10, respectively.
*** At least one prescription fill within medication class during the index AMI hospitalization period or within 6 months after index AMI discharge date.
††† Inpatient ICD-9 diagnosis code of 410.x1 in the primary or secondary discharge field within 6 months after index AMI discharge date.
‡‡‡ Inpatient ICD-9 diagnosis code of 430, 431, 433.x1, 434.x1, or 436 in the primary discharge field within 6 months after index AMI discharge date.
§§§ Inpatient or outpatient ICD-9 diagnosis code of 272.xx in any position.

Abbreviations: ACE, angiotensin-converting enzyme; AMI, acute myocardial infarction; ARB, angiotensin II receptor blocker; CABG, coronary artery bypass surgery; CCI, Charlson comorbidity index; CI, confidence interval; HR, hazard ratio; ICD-9, International Classification of Diseases, Ninth Revision; PDC, proportion of days covered; PTCA, percutaneous transluminal coronary angioplasty.
**Figure S1.** Unadjusted survival curves and 95% confidence bands for all-cause mortality after acute myocardial infarction, stratified by statin adherence.

Follow-up begins 6 months after index AMI discharge (i.e. Day 0 is 180 days after index AMI discharge). A: Stratified by post-AMI statin adherence. B: Stratified by change in statin adherence from pre- to post-AMI.

* 12-month estimate calculated from 6 months post-AMI discharge through 18 months post-AMI discharge.

**Abbreviations:** AMI, acute myocardial infarction.
Figure S2. Schoenfeld residuals (dots) with smooth fitted spline (line) for statin adherence change.