SUPPLEMENTAL MATERIAL
Table S1. List of antiretroviral therapy included in the current analysis by drug classes.

| Drug class                                         | Medications                                                                 |
|---------------------------------------------------|-----------------------------------------------------------------------------|
| Nucleoside reverse transcriptase inhibitors        | Abacavir                                                                    |
|                                                   | Didanosine                                                                  |
|                                                   | Stavudine                                                                    |
|                                                   | Zidovudine                                                                  |
| Non-nucleoside reverse transcriptase inhibitors    | Delavirdine                                                                 |
|                                                   | Efavirenz                                                                   |
|                                                   | Etravirine                                                                  |
|                                                   | Nevirapine                                                                  |
|                                                   | Rilpivirine                                                                 |
| Protease inhibitors                                | Atazanavir                                                                  |
|                                                   | Darunavir                                                                   |
|                                                   | Fosamprenavir                                                               |
|                                                   | Indinavir                                                                   |
|                                                   | Lopinavir                                                                   |
|                                                   | Nelfinavir                                                                  |
|                                                   | Ritonavir (excluding combinations containing paritaprevir)                 |
|                                                   | Saquinavir                                                                  |
|                                                   | Tipranavir                                                                  |
| Fusion inhibitors                                  | Enfuvirtide                                                                 |
| Entry inhibitors                                   | Maraviroc                                                                   |
| Integrase strand transfer inhibitors               | Dolutegravir                                                                |
|                                                   | Elvitegravir                                                                |
|                                                   | Raltegravir                                                                 |
| Pharmacokinetic enhancers                          | Cobicistat                                                                  |

Lamivudine, tenofovir and emtricitabine were not included in the list of antiretroviral drugs as these medications are also used to treat hepatitis C infection or for human immunodeficiency virus pre-exposure prophylaxis.
Table S2. Definitions for beneficiary characteristics analyzed in the current study.

| Characteristic                  | Definition                                                                                                                                 |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Age                             | Calculated on the index date using MarketScan beneficiary summary data.                                                      |
| Sex                             | Based on MarketScan beneficiary summary data.                                                                              |
| Calendar year                   | Based on the index date.                                                                                                     |
| Geographic region of residence  | Based on MarketScan beneficiary summary data.                                                                              |
| History of CHD<sup>1</sup>      | **Algorithm based on ICD-9 codes:** Any of the following using claims within 365 days prior to or on the index date:   |
|                                 | (a) At least 1 inpatient claim with an ICD-9 diagnosis code of 410.xx-414.xx, V45.81 or V45.82.                             |
|                                 | (b) At least 1 outpatient physician evaluation and management claim with an ICD-9 diagnosis code of 410.xx-414.xx, V45.81 or V45.82. |
|                                 | (c) At least 1 inpatient or outpatient claim with an ICD-9 procedure code of 00.66, 36.0, 36.01-36.19, 36.2 or a current procedural terminology (CPT) code of 33510-33519, 33521-33523, 33530, 33533-33536, 92980-92982, 92984, 92995, 92996, 92920, 92921, 92924, 92925, 92928, 92929, 92933, 92934, 92937, 92938, 92941, 92943, 92944. |
|                                 | **Algorithm based on ICD-10 codes:** Any of the following using claims within 365 days prior to or on the index date:   |
|                                 | (a) At least 1 inpatient claim with an ICD-10 diagnosis code of I21.09, I21.19, I21.11, I21.29, I21.4, I21.3, I25.10, I25.810, I25.811, I25.812, I25.3, I25.41, I25.42, Z95.1 or Z9861. |
|                                 | (b) At least 1 outpatient physician evaluation and management claim with an ICD-10 diagnosis code of I21.09, I21.19, I21.11, I21.29, I21.4, I21.3, I25.10, I25.810, I25.811, I25.812, I25.3, I25.41, I25.42, Z95.1 or Z9861. |
|                                 | (c) At least 1 inpatient or outpatient claim with an ICD-10 procedure code of 0210, 0211, 0212, 0213, 0270, 0271, 0272, 0273, 02C0, 02C1, 02C2, 02C3, 3E07 or a CPT code 33510-33519, 33521-33523, 33530, 33533-33536, 92980-92982, 92984, 92995, 92996, 92920, 92921, 92924, 92925, 92928, 92929, 92933, 92934, 92937, 92938, 92941, 92943, 92944. |
| Characteristic                      | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| **Stroke**<sup>2</sup>             | Algorithm based on ICD-9 codes: Any of the following using claims within 365 days prior to or on the index date:<br> (a) At least 1 inpatient ICD-9 diagnosis code (any position) of 430.xx, 431.xx, 433.x1, 434.x1 or 436.x.<br> (b) At least 1 outpatient physician evaluation and management claim with ICD-9 diagnosis code (any position) of 430.xx, 431.xx, 433.x1, 434.x1 or 436.x.<br> Algorithm based on ICD-10 codes: Any of the following using claims within 365 days prior to or on the index date, inclusive:<br> (a) At least 1 inpatient ICD-10 diagnosis (primary or secondary position) of I60.xx, I61.xx, I63.xx, I67.89.<br> (b) At least 1 outpatient physician evaluation and management claim with ICD-10 diagnoses (any position) of I60.xx, I61.xx, I63.xx, I67.89.                                                                                                                                                                                                 |
| **History of peripheral artery disease**<sup>3</sup> | Algorithm based on ICD-9 codes: Any of the following using claims within 365 days prior to or on the index date:<br> (a) At least 1 inpatient ICD-9 diagnosis code (any position) of 440.20-440.24, 440.31, 444.2x, 443.9, or 444.81.<br> (b) At least 2 outpatient physician evaluation and management claims with an ICD-9 diagnosis code (any position) of 440.20-440.24, 440.31, 444.2x, 443.9, or 444.81, with the 2 claims on separate days.<br> (c) At least 1 inpatient or outpatient claim with a CPT code 37205 or 75962.<br> Algorithm based on ICD-10 codes: Any of the following using claims within 365 days prior to or on the index date:<br> (a) At least 1 inpatient ICD-10 diagnosis code (any position) of I70.209, I70.219, I70.229, I70.25, I70.269, I70.499, I73.9.<br> (b) At least 2 outpatient physician evaluation and management claims with an ICD-10 diagnosis code (any position) of I70.209, I70.219, I70.229, I70.25, I70.269, I70.499, I73.9, with the 2 claims on separate days.<br> (c) At least 1 inpatient or outpatient claim with a CPT code 37205 or 75962. |
| Characteristic             | Definition                                                                                                                                                                                                 |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Diabetes                  | Algorithm based on ICD-9 codes: Any of the following using claims within 365 days prior to or on the index date:                                                                                           |
|                           | (a) At least 1 inpatient claim with discharge ICD-9 diagnosis (any position) of 250.xx, 357.2, 362.0x, or 366.41.                                                                                              |
|                           | (b) At least 2 outpatient physician evaluation and management claims with ICD-9 diagnosis (any position) of 250.xx, 357.2, 362.0x, or 366.41, with the 2 claims occurring at least 7 days apart |
|                           | (c) At least 1 prescription drug event record for an oral antidiabetic drug fill or insulin.                                                                                                             |
|                           | Algorithm based on ICD-10 codes: Any of the following using claims within 365 days prior to or on the index date:                                                                                           |
|                           | (a) At least 1 inpatient claim with a discharge ICD-10 diagnosis (any position) of E0836, E0842, E0936, E0942, E1010, E1011, E1029, E10311, E10319, E1036, E1039, E1040, E1042, E1051, E10618, E10620, E10621, E10622, E10628, E10630, E10638, E10641, E10649, E1065, E1069, E108, E109, E1100, E1101, E1129, E11311, E11319, E11329, E11339, E11349, E11359, E1136, E1139, E1140, E1142, E1151, E11618, E11620, E11621, E11622, E11628, E11630, E11638, E11641, E11649, E11649, E1165, E1169, E118, E119, E1310, E1336, E1342. |
|                           | (b) At least 2 carrier physician evaluation and management claims with ICD-10 diagnosis (any position) of E0836, E0842, E0936, E0942, E1010, E1011, E1029, E10311, E10319, E1036, E1039, E1040, E1042, E1051, E10618, E10620, E10621, E10622, E10628, E10630, E10638, E10641, E10649, E1065, E1069, E108, E109, E1100, E1101, E1129, E11311, E11319, E11329, E11339, E11349, E11359, E1136, E1139, E1140, E1142, E1151, E11618, E11620, E11621, E11622, E11628, E11630, E11638, E11641, E11649, E1165, E1169, E118, E119, E1310, E1336, E1342, with the 2 claims occurring at least 7 days apart. |
|                           | (c) At least 1 prescription drug event record for an oral antidiabetic drug fill or insulin.                                                                                                             |
| History of heart failure  | Algorithm based on ICD-9 codes: Any of the following using claims within 365 days prior to or on the index date:                                                                                           |
|                           | (a) ≥1 inpatient claim with ICD-9 diagnosis code (any position) of 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428.X                                                           |
|                           | (b) ≥2 outpatient physician evaluation and management claims on separate calendar days with ICD-9 diagnosis code (any position) of 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428.x.                    |
|                           | Algorithm based on ICD-10 codes: Any of the following using claims within 365 days prior to or on the index date:                                                                                           |
|                           | (a) ≥1 inpatient claim with ICD-10 diagnoses (any position) of I110, I130, I132, I501, I5020, I5021, I5023, I5030, I5031, I5032, I5033, I5040, I5041, I5042, I5043, I509                        |
|                           | (b) ≥2 outpatient physician evaluation and management claims on separate calendar days with ICD-10 diagnoses (any position) of I110, I130, I132, I501, I5020, I5021, I5022, I5023, I5030, I5031, I5032, I5033, I5040, I5041, I5042, I5043, I509. |
| Characteristic                              | Definition                                                                                                                                                                                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| History of chronic kidney disease<sup>a</sup> | Algorithm based on ICD-9 codes: Any of the following using claims within 365 days prior to or on the index date:  
   (a) At least 1 inpatient claim with ICD-9 diagnosis code (any position) of 016.0, 095.4, 189.0, 189.9, 223.0, 236.91, 250.4, 271.4, 274.1, 283.11, 403.x1, 403.x0, 404.x2, 404.x3, 404.x0, 404.x1, 440.1, 442.1, 447.3, 572.4, 580–588, 591, 642.1, 646.2, 753.12–753.17, 753.19, 753.2, 794.4.  
   (b) At least 1 outpatient physician evaluation and management claim with ICD-9 diagnosis code (any position) of 016.0, 095.4, 189.0, 189.9, 223.0, 236.91, 250.4, 271.4, 274.1, 283.11, 403.x1, 403.x0, 404.x2, 404.x3, 404.x0, 404.x1, 440.1, 442.1, 447.3, 572.4, 580–588, 591, 642.1, 646.2, 753.12–753.17, 753.19, 753.2, 794.4.  
| Algorithm based on ICD-10 codes: Any of the following using claims within 365 days prior to or on the index date:  
   (a) ≥1 inpatient claim with a discharge diagnosis code of chronic kidney disease (ICD-10 CM diagnosis code of A1811, A5275, C649, C689, D3000, D4100, D4120, D593, E1021, E1029, E1121, E1129, E748, I120, I129, I130, I1310, I1311, I132, I701, I722, K767, M1030, N003, N008, N009, N013, N022, N032, N033, N035, N038, N039, N040, N043, N044, N048, N049, N052, N055, N058, N059, N08, N1330, N170, N171, N172, N178, N179, N181, N182, N183, N184, N185, N186, N189, N19, N250, N251, N2581, N2589, N259, N269, Q6102, Q6119, Q612, Q613, Q614, Q615, Q618, Q6210, Q6211, Q6212, Q6231, Q6239, R944) in any discharge diagnosis position.  
   (b) ≥1 physician evaluation and management claim with a diagnosis code of chronic kidney disease (ICD-10 diagnosis code of A1811, A5275, C649, C689, D3000, D4100, D4120, D593, E1021, E1029, E1121, E1129, E748, I120, I129, I130, I1310, I1311, I132, I701, I722, K767, M1030, N003, N008, N009, N013, N022, N032, N033, N035, N038, N039, N040, N043, N044, N048, N049, N052, N055, N058, N059, N08, N1330, N170, N171, N172, N178, N179, N181, N182, N183, N184, N185, N186, N189, N19, N250, N251, N2581, N2589, N259, N269, Q6102, Q6119, Q612, Q613, Q614, Q615, Q618, Q6210, Q6211, Q6212, Q6231, Q6239, R944) in any position.  

<sup>a</sup> Not included for patients who had a claim for acute kidney injury (<code>599.5</code> or <code>599.4</code>) within 365 days prior to the index date.
| Characteristic | Definition |
|---------------|------------|
| Liver disease | Algorithm based on ICD-9 codes: Any of the following using claims within 365 days prior to or on the index date:  
  (a) At least 1 inpatient claim with ICD-9 diagnosis code (any position) of 070.22, 070.23, 070.32, 070.33, 070.44, 070.54, 070.6, 070.9, 456.0x–456.2x, 570.xx, 571.xx, 572.2x–572.8, 573.3, 573.4, 573.8, 573.9, V42.7.  
  (b) At least 2 outpatient physician evaluation and management claims with ICD-9 diagnosis code (any position) of 070.22, 070.23, 070.32, 070.33, 070.44, 070.54, 070.6, 070.9, 456.0x–456.2x, 570.xx, 571.xx, 572.2–572.8, 573.3, 573.4, 573.8, 573.9, V42.7.  
  Algorithm based on ICD-10 codes: Any of the following using claims within 365 days prior to or on the index date:  
  (a) At least 1 inpatient claim with ICD-10 diagnosis code (any position) of B18.x, I85.xx, I86.4, I98.2, K70.x, K71.1x, K71.3-K71.5x, K71.7, K72.xx-K74.xx, K76.0, K76.2x-K76.9x, Z94.4.  
  (b) At least 2 outpatient physician evaluation and management claims with ICD-10 diagnosis code (any position) of B18.x, I85.xx, I86.4, I98.2, K70.x, K71.1x, K71.3-K71.5x, K71.7, K72.xx-K74.xx, K76.0, K76.2x-K76.9x, Z94.4.  |
| Depression | Algorithm based on ICD-9 codes: defined by any of the following using claims within 365 days prior to or on the index date.  
  (a) At least 1 inpatient claim with ICD-9 diagnosis code (any position) of 296.2x, 296.3x, 296.5x, 300.4x, 309.xx, 311.xx.  
  (b) At least 1 outpatient physician evaluation and management claim with ICD-9 diagnosis code (any position) of 296.2x, 296.3x, 296.5x, 300.4x, 309.xx, 311.xx.  
  (c) At least 2 pharmacy claims for amitriptyline, amoxapine, bupropion, citalopram, clomipramine, desipramine, desvenlafaxine, doxepin, duloxetine, escitalopram, fluoxetine, fluvoxamine, imipramine, isocarboxazid, levomilnacipran, maprotiline, milnacipran, mirtazapine, nefazodone, nortriptyline, paroxetine, perphenazine, phenelzine, protriptyline, selegiline, sertraline, tranylcypromine, trazodone, trimipramine or venlafaxine.  
  Algorithm based on ICD-10 codes: defined by any of the following using claims within 365 days prior to or on the index date.  
  (a) At least 1 inpatient claim with ICD-10 diagnosis code (any position) of F20.4, F31.3x-F31.5x, F32.x, F33.xx, F34.1, F41.2, F43.2x.  
  (b) At least 1 outpatient physician evaluation and management claim with ICD-10 diagnosis code (any position) of F20.4, F31.3x-F31.5x, F32.x, F33.xx, F34.1, F41.2, F43.2x.  
  (c) At least 2 pharmacy claims for amitriptyline, amoxapine, bupropion, citalopram, clomipramine, desipramine, desvenlafaxine, doxepin, duloxetine, escitalopram, fluoxetine, fluvoxamine, imipramine, isocarboxazid, levomilnacipran, maprotiline, milnacipran, mirtazapine, nefazodone, nortriptyline, paroxetine, perphenazine, phenelzine, protriptyline, selegiline, sertraline, tranylcypromine, trazodone, trimipramine or venlafaxine.  |
| Cardiologist care | Defined by ≥1 outpatient physician evaluation and management claim with provider type code 250 within 365 days prior to or on the index date. |
| Characteristic                  | Definition                                                                                                                                                                                                 |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Any hospitalization            | Defined by ≥1 inpatient claim within 365 days prior to or on the index date.                                                                                                                            |
| **Tobacco use**                | **Algorithm based on ICD-9 codes:** Any of the following using claims within 365 days prior to or on the index date:  
(a) At least 1 inpatient claim with an ICD-9 diagnosis code of 305.1, 649.0x, 989.84, or V15.82  
(b) At least 1 outpatient physician evaluation and management claim with an ICD-9 diagnosis code of 305.1, 649.0x, 989.84, or V15.82  
(c) At least 1 inpatient or E/M outpatient claim with a CPT code of 99406, 99407, G0436, G0437, G9016, S9453, S4995, G9276, G9458, 1034F, 4004F, 4001F  
(d) At least 1 pharmacy claim for nicotine or varenicline  
**Algorithm based on ICD-10 codes:** Any of the following using claims within 365 days prior to or on the index date:  
(a) At least 1 inpatient claim with an ICD-10 diagnosis code of F17.200, O99.330-O99.335, T65.221A, T65.222A, T65.223A, T65.224A, T65.291A, T65.292A, T65.293A, T65.294A, Z72.0, Z87.891  
(b) At least 1 outpatient physician evaluation and management claim with an ICD-10 diagnosis code of F17.200, O99.330-O99.335, T65.221A, T65.222A, T65.223A, T65.224A, T65.291A, T65.292A, T65.293A, T65.294A, Z72.0, Z87.891  
(c) At least 1 inpatient or E/M outpatient claim with a CPT code of 99406, 99407, G0436, G0437, G9016, S9453, S4995, G9276, G9458, 1034F, 4004F, 4001F  
(d) At least 1 pharmacy claim for nicotine or varenicline |
| **Antihypertensive medication use** | Defined by ≥1 prescription fill for any thiazides, angiotensin-converting-enzyme inhibitors, angiotensin II receptor blockers, calcium channel blockers, diuretics, beta blockers, direct renin inhibitors, alpha-1 blockers, central alpha-1 agonists or direct vasodilators within 365 days prior to or on the index date. |
| **Statin use and intensity**    | No statin use was defined by having no prescription fill for any statin dose and type within 365 days prior to or on the index date. Use of low/moderate-intensity statin was defined by ≥1 prescription fill for a statin but no high-intensity statin fills within 365 days prior to or on the index date. Use of high-intensity statin was defined by ≥1 prescription fill for any high-intensity statin in the 365 days prior to the MI hospital discharge date, inclusive. High-intensity statin includes atorvastatin 40-80 mg, rosuvastatin 20-40 mg and simvastatin 80 mg. |
| **Non-statin lipid-lowering medication use** | Defined by ≥1 prescription fill for ezetimibe, fibrates, niacin, or bile acid sequestrants, within 365 days prior to or on the index date. |
| **Polypharmacy**               | Defined by having prescription fills for ≥10 different medications (based on the generic names) within 365 days prior to or on the index date. Fills for the same generic name were counted only once. For example, 10 prescription fills for atorvastatin were count as filling 1 medication. |

CHD: coronary heart disease; CPT: current procedural terminology; ICD-9: international classification of diseases, ninth revision; ICD-10: international classification of diseases, tenth revision.
Table S3. Definition for outcomes events analyzed in the current study.

| Outcome                                             | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
CPT procedure codes for peripheral surgical revascularization: 35302, 35303, 35304, 35305, 35351, 35361, 35363, 35371, 35372, 35381, 35480, 35481, 35482, 35483, 35485, 35521, 35537, 35538, 35539, 35540, 35541, 35546, 35548, 35549, 35551, 35556, 35558, 35563, 35565, 35566, 35570, 35571, 35583, 35585, 35587, 35621, 35623, 35641, 35646, 35647, 35651, 35654, 35656, 35661, 35663, 35665, 35666, 35671, 35875, 35876.

ICD9 procedure codes for thrombolysis: 99.10.

ICD10 procedure codes for thrombolysis: 3E03317, 3E04317, 3E05317, 3E06317, 3E08317.

CPT procedure codes for thrombolysis: 37184, 37211, 37213.

ICD9 diagnosis codes for acute myocardial infarction: 410.x0, 410.x1.

ICD10 diagnosis codes for acute myocardial infarction: I21.x, I21.xx.

ICD9 diagnosis codes for ischemic stroke: 433.x1, 434.x1.

ICD10 diagnosis codes for ischemic stroke: I63, I63.x, I63.xx, I63.xxx.

ICD9 diagnosis code for pulmonary embolism: 415.1x.

ICD10 diagnosis codes for pulmonary embolism: T80.0XXA, T81.72XA, T82.817A, T82.818A, I26.90, I26.99.

ICD9 procedure codes for lower extremity amputation above the ankle: 84.13, 84.14, 84.15, 84.16, 84.17.

ICD10 procedure codes for lower extremity amputation above the ankle: 0Y6D0Z1, 0Y6D0Z2, 0Y6D0Z3, 0Y6F0Z2, 0Y6F0Z3, 0Y6F0ZZ, 0Y6H0Z1, 0Y6H0Z2, 0Y6H0Z3, 0Y620ZZ, 0Y630ZZ, 0Y640ZZ.

CPT procedure codes for lower extremity amputation above the ankle: 27590, 27591, 27592, 27598, 27880, 27881, 27882, 27888.

ICD9 diagnosis code for traumatic amputation of a leg: 897.x.

ICD10 diagnosis codes for traumatic amputation of a leg: S78.xxxA, S88.xxxA, where xxx can be any 3-digit number.

ICD9 diagnosis codes for peripheral artery disease: 440.2, 440.20, 440.21, 440.22, 440.23, 440.24, 440.29, 440.3, 440.30, 440.31, 440.32, 440.4, 443.9.

ICD10 diagnosis codes for peripheral artery disease: I70.2, I70.20, I70.201, I70.202, I70.203, I70.208, I70.209, I70.21, I70.211, I70.212, I70.213, I70.218, I70.219, I70.22, I70.221, I70.222, I70.223, I70.228, I70.229, I70.23, I70.231, I70.232, I70.233, I70.234, I70.235, I70.238, I70.239, I70.24, I70.241, I70.242, I70.243, I70.244, I70.245, I70.248.
I70.249, I70.25, I70.26, I70.261, I70.262, I70.263, I70.268, I70.269, I70.29, I70.291, I70.292, I70.293, I70.298, I70.299, I70.3, I70.30, I70.301, I70.302, I70.303, I70.308, I70.309, I70.31, I70.311, I70.312, I70.313, I70.318, I70.319, I70.32, I70.321, I70.322, I70.323, I70.328, I70.329, I70.33, I70.331, I70.332, I70.333, I70.334, I70.335, I70.338, I70.339, I70.34, I70.341, I70.342, I70.343, I70.344, I70.345, I70.348, I70.349, I70.35, I70.36, I70.361, I70.362, I70.363, I70.368, I70.369, I70.39, I70.391, I70.392, I70.393, I70.398, I70.399, I70.4, I70.40, I70.401, I70.402, I70.403, I70.408, I70.409, I70.41, I70.411, I70.412, I70.413, I70.418, I70.419, I70.42, I70.421, I70.422, I70.423, I70.428, I70.429, I70.43, I70.431, I70.432, I70.433, I70.434, I70.435, I70.438, I70.439, I70.44, I70.441, I70.442, I70.443, I70.444, I70.445, I70.448, I70.449, I70.45, I70.46, I70.461, I70.462, I70.463, I70.468, I70.469, I70.49, I70.491, I70.492, I70.493, I70.498, I70.499, I70.5, I70.50, I70.501, I70.502, I70.503, I70.508, I70.509, I70.51, I70.511, I70.512, I70.513, I70.518, I70.519, I70.52, I70.521, I70.522, I70.523, I70.528, I70.529, I70.53, I70.531, I70.532, I70.533, I70.534, I70.535, I70.538, I70.539, I70.54, I70.541, I70.542, I70.543, I70.544, I70.545, I70.548, I70.549, I70.55, I70.56, I70.561, I70.562, I70.563, I70.568, I70.569, I70.59, I70.591, I70.592, I70.593, I70.598, I70.599, I70.6, I70.60, I70.601, I70.602, I70.603, I70.608, I70.609, I70.61, I70.611, I70.612, I70.613, I70.618, I70.619, I70.62, I70.621, I70.622, I70.623, I70.628, I70.629, I70.63, I70.631, I70.632, I70.633, I70.634, I70.635, I70.638, I70.639, I70.64, I70.641, I70.642, I70.643, I70.644, I70.645, I70.648, I70.649, I70.65, I70.66, I70.661, I70.662, I70.663, I70.668, I70.669, I70.69, I70.691, I70.692, I70.693, I70.698, I70.699, I70.7, I70.70, I70.701, I70.702, I70.703, I70.708, I70.709, I70.71, I70.711, I70.712, I70.713, I70.718, I70.719, I70.72, I70.721, I70.722, I70.723, I70.728, I70.729, I70.73, I70.731, I70.732, I70.733, I70.734, I70.735, I70.738, I70.739, I70.74, I70.741, I70.742, I70.743, I70.744, I70.745, I70.748, I70.749, I70.75, I70.76, I70.761, I70.762, I70.763, I70.768, I70.769, I70.79, I70.791, I70.792, I70.793, I70.798, I70.799, I70.92, I73.9.

CPT: current procedural terminology; ICD-9: international classification of diseases, ninth revision; ICD-10: international classification of diseases, tenth revision.
Table S4. Hazard ratios for atherosclerotic cardiovascular disease, myocardial infarction, stroke and lower extremity artery disease hospitalizations among beneficiaries with versus without HIV across subgroups defined by beneficiary characteristics in the MarketScan database.

|                          | ASCVD HR (95% CI) | Myocardial infarction HR (95% CI) | Stroke HR (95% CI) | LEAD HR (95% CI) | p-value* |
|--------------------------|--------------------|-----------------------------------|--------------------|-----------------|----------|
| Age, years               |                    |                                   |                    |                 |          |
| 19-44                    | 1.78 (1.40, 2.26)  | 1.60 (1.18, 2.16)                 | 2.10 (1.37, 3.21)  | 1.96 (0.74, 5.18) |
| 45-54                    | 1.24 (1.08, 1.42)  | 1.25 (1.06, 1.47)                 | 1.10 (0.83, 1.46)  | 1.46 (0.93, 2.30) |
| 55-64                    | 1.23 (1.07, 1.40)  | 1.17 (0.99, 1.38)                 | 1.34 (1.05, 1.72)  | 1.39 (0.90, 2.16) |
| ≥65                      | 1.17 (0.93, 1.48)  | 1.24 (0.94, 1.66)                 | 1.12 (0.73, 1.73)  | 1.04 (0.48, 2.23) |
| Calendar year            |                    |                                   |                    |                 |          |
| 2011                     | 1.28 (1.15, 1.43)  | 1.23 (1.08, 1.41)                 | 1.34 (1.09, 1.65)  | 1.52 (1.06, 2.18) |
| 2012                     | 1.33 (1.08, 1.63)  | 1.33 (1.04, 1.70)                 | 1.14 (0.76, 1.69)  | 1.49 (0.70, 3.19) |
| 2013                     | 1.15 (0.87, 1.52)  | 1.04 (0.74, 1.48)                 | 1.38 (0.82, 2.32)  | 1.42 (0.57, 3.53) |
| 2014                     | 1.32 (0.96, 1.81)  | 1.35 (0.91, 2.03)                 | 1.58 (0.92, 2.72)  | 0.60 (0.17, 2.07) |
| 2015                     | 1.72 (1.25, 2.36)  | 2.12 (1.43, 3.14)                 | 1.18 (0.64, 2.17)  | 1.82 (0.71, 4.70) |
| 2016                     | 1.02 (0.57, 1.85)  | 0.93 (0.44, 1.97)                 | 1.17 (0.39, 3.51)  | 1.17 (0.39, 3.51) |
| Men                      | 1.30 (1.19, 1.42)  | 1.27 (1.14, 1.42)                 | 1.32 (1.11, 1.56)  | 1.45 (1.08, 1.93) |
| Women                    | 1.27 (0.99, 1.62)  | 1.20 (0.87, 1.64)                 | 1.47 (0.97, 2.25)  | 1.13 (0.46, 2.75) |
| Region of residence      |                    |                                   |                    |                 |          |
| Northeast                | 1.24 (1.03, 1.49)  | 1.21 (0.97, 1.52)                 | 1.23 (1.07, 1.74)  | 0.98 (0.50, 1.92) |
| North central            | 1.25 (1.03, 1.51)  | 1.21 (0.96, 1.53)                 | 1.39 (0.97, 1.98)  | 1.56 (0.77, 3.16) |
| South                    | 1.33 (1.18, 1.51)  | 1.30 (1.11, 1.52)                 | 1.29 (1.01, 1.63)  | 1.65 (1.13, 2.41) |
| West                     | 1.29 (1.04, 1.59)  | 1.36 (1.06, 1.74)                 | 1.50 (0.99, 2.26)  | 0.73 (0.31, 1.74) |
| History of CHD           | 1.35 (1.13, 1.63)  | 1.38 (1.12, 1.71)                 | 1.26 (0.82, 1.93)  | 1.22 (0.66, 2.25) |
| Without history of CHD   | 1.26 (1.15, 1.39)  | 1.21 (1.08, 1.36)                 | 1.33 (1.12, 1.57)  | 1.46 (1.07, 1.98) |
| Diabetes                 | 1.17 (1.00, 1.38)  | 1.21 (0.99, 1.48)                 | 1.22 (0.90, 1.65)  | 0.74 (0.41, 1.32) |
| Without diabetes         | 1.32 (1.20, 1.45)  | 1.27 (1.13, 1.43)                 | 1.31 (1.09, 1.58)  | 1.73 (1.26, 2.38) |
| Stroke                   | 0.99 (0.63, 1.56)  | 1.07 (0.49, 2.31)                 | 0.89 (0.49, 1.61)  | 2.19 (0.47, 10.15) |
| Without stroke           | 1.30 (1.20, 1.42)  | 1.28 (1.16, 1.42)                 | 1.34 (1.14, 1.58)  | 1.40 (1.06, 1.86) |
| Peripheral artery disease| 1.19 (0.74, 1.93)  | 0.63 (0.29, 1.39)                 | 3.97 (0.86, 18.27) | 1.55 (0.79, 3.04) |
| Without peripheral artery disease | 1.29 (1.19, 1.41) | 1.29 (1.19, 1.42) | 1.29 (1.10, 1.52) | 1.33 (0.98, 1.80) |
| Heart failure            | 1.62 (1.08, 2.43)  | 1.53 (0.94, 2.49)                 | 1.73 (0.70, 4.29)  | 0.88 (0.28, 2.81) |
| Without heart failure    | 1.27 (1.17, 1.38)  | 1.25 (1.13, 1.39)                 | 1.30 (1.10, 1.52)  | 1.40 (1.05, 1.87) |
| Chronic kidney disease   | 1.19 (0.94, 1.50)  | 1.01 (0.77, 1.33)                 | 1.64 (1.04, 2.58)  | 1.09 (0.50, 2.37) |
| Without chronic kidney disease | 1.29 (1.18, 1.41) | 1.29 (1.16, 1.44) | 1.27 (1.08, 1.51) | 1.49 (1.11, 1.99) |
| Liver disease            | 0.97 (0.56, 1.69)  | 1.25 (0.61, 2.54)                 | 0.76 (0.22, 2.62)  | 0.18 (0.03, 0.98) |
| Without liver disease    | 1.30 (1.20, 1.42)  | 1.28 (1.15, 1.41)                 | 1.32 (1.13, 1.54)  | 1.50 (1.13, 1.98) |
| Cardiologist care        | 1.49 (1.09, 2.03)  | 1.44 (1.00, 2.08)                 | 1.74 (0.90, 3.37)  | 1.28 (0.46, 3.56) |
| Without cardiologist care| 1.28 (1.17, 1.39)  | 1.26 (1.13, 1.40)                 | 1.28 (1.09, 1.50)  | 1.38 (1.04, 1.84) |

* p-value < 0.05 is considered statistically significant.
| Risk Factor                                | HR     | 95% CI          | p-value | HR     | 95% CI          | p-value | HR     | 95% CI          | p-value |
|-------------------------------------------|--------|-----------------|---------|--------|-----------------|---------|--------|-----------------|---------|
| Prior hospitalization                     | 1.47   | (1.24, 1.75)    | 0.04    | 1.40   | (1.13, 1.73)    | 0.24    | 1.77   | (1.27, 2.46)    | 0.02    |
| Without prior hospitalization             | 1.20   | (1.09, 1.32)    | 0.18    | 1.20   | (1.07, 1.35)    | 0.63    | 1.16   | (0.97, 1.40)    | 0.42    |
| Depression                                | 1.18   | (1.00, 1.40)    | 0.18    | 1.18   | (1.00, 1.51)    | 0.35    | 1.25   | (1.13, 1.62)    | 0.02    |
| Without depression                        | 1.34   | (1.22, 1.47)    | 0.57    | 1.32   | (0.94, 1.85)    | 0.83    | 1.20   | (0.75, 2.10)    | 0.92    |
| Tobacco use                               | 1.28   | (1.17, 1.39)    | 0.06    | 1.18   | (1.02, 1.37)    | 0.25    | 1.14   | (0.91, 1.44)    | 0.21    |
| Without polypharmacy                      | 1.36   | (1.22, 1.52)    | 0.63    | 1.16   | (0.99, 1.37)    | 0.34    | 1.27   | (0.99, 1.62)    | 0.99    |
| Antihypertensive medication use           | 1.27   | (1.14, 1.42)    | 0.84    | 1.32   | (1.10, 1.59)    | 0.66    | 1.25   | (0.92, 1.68)    | 0.88    |
| No antihypertensive medication use        | 1.23   | (1.08, 1.40)    | 0.91    | 1.20   | (1.05, 1.37)    | 0.35    | 1.33   | (1.09, 1.61)    | 0.59    |
| No statin use                             | 1.29   | (1.11, 1.51)    | 1.18    | 1.32   | (1.10, 1.59)    | 0.66    | 1.25   | (0.92, 1.68)    | 0.88    |
| Low/moderate-intensity statin use         | 1.14   | (0.93, 1.40)    | 0.23    | 1.11   | (0.87, 1.41)    | 0.24    | 1.22   | (0.80, 1.86)    | 0.76    |
| Non-statin lipid lowering medication use  | 1.31   | (1.20, 1.43)    | 0.30    | 1.30   | (1.16, 1.45)    | 0.24    | 1.30   | (1.10, 1.54)    | 0.76    |

ASCVD: atherosclerotic cardiovascular disease; CHD: coronary heart disease; CI: confidence interval; HIV: human immunodeficiency virus; HR: hazard ratio; LEAD: lower extremity artery disease.

HRs include adjustment for age, sex, calendar year, geographic region of residence, history of CHD, diabetes, stroke, peripheral artery disease, heart failure, chronic kidney disease, liver disease, cardiologist care, any hospitalization, depression, tobacco use, polypharmacy, antihypertensive medication use, statin use and statin intensity, and non-statin lipid-lowering medication use.

* Comparing HR for outcome events associated with HIV infection across subgroups defined by beneficiary characteristics.
† Data not shown given the small number of events. Specifically, there were 6 LEAD hospitalizations during follow-up among beneficiaries in 2016.
Table S5. Characteristics of beneficiaries with HIV and age, sex and calendar year-matched beneficiaries without HIV stratified by statin use in the MarketScan database.

| Characteristic                          | Taking statins | Not taking statins |
|----------------------------------------|----------------|--------------------|
|                                         | Beneficiaries  | Beneficiaries       |
|                                         | without HIV    | with HIV            |
|                                         | (n=53,842)     | (n=15,619)          |
|                                         | Beneficiaries  | Beneficiaries       |
|                                         | without HIV    | with HIV            |
|                                         | (n=275,862)    | (n=66,807)          |
| Age, years, n (%)                       |                |                    |
| 19-44                                   | 5,223 (9.7%)   | 2,190 (14.0%)       |
|                                         | 135,377 (49.1%)| 32,960 (49.3%)      |
| 45-54                                   | 22,741 (42.2%) | 6,742 (43.2%)       |
|                                         | 95,731 (34.7%) | 22,876 (34.2%)      |
| 55-64                                   | 20,732 (38.5%) | 5,454 (34.9%)       |
|                                         | 39,596 (14.4%) | 9,628 (14.4%)       |
| ≥65                                     | 5,146 (9.6%)   | 1,233 (7.9%)        |
|                                         | 5,158 (1.9%)   | 1,343 (2.0%)        |
| Calendar year, n (%)                    |                |                    |
| 2011                                    | 24,412 (45.3%) | 7,558 (48.4%)       |
|                                         | 112,104 (40.6%)| 26,571 (39.8%)      |
| 2012                                    | 8,423 (15.6%)  | 2,366 (15.1%)       |
|                                         | 44,821 (16.2%) | 10,945 (16.4%)      |
| 2013                                    | 5,467 (10.2%)  | 1,442 (9.2%)        |
|                                         | 31,049 (11.4%) | 7,766 (11.6%)       |
| 2014                                    | 5,521 (10.3%)  | 1,442 (9.2%)        |
|                                         | 31,311 (11.4%) | 7,766 (11.6%)       |
| 2015                                    | 4,706 (8.7%)   | 1,303 (8.3%)        |
|                                         | 27,386 (9.9%)  | 6,720 (10.1%)       |
| 2016                                    | 5,313 (9.9%)   | 1,441 (9.2%)        |
|                                         | 29,191 (10.6%) | 7,185 (10.8%)       |
| Male sex, n (%)                         | 47,810 (88.8%) | 13,650 (87.4%)      |
|                                         | 228,738 (82.9%)| 55,487 (83.1%)      |
| Geographic region of residence, n (%)   |                |                    |
| Northeast                               | 10,114 (18.8%) | 3,027 (19.4%)       |
|                                         | 51,405 (18.6%) | 12,303 (18.4%)      |
| North central                           | 12,756 (23.7%) | 1,990 (12.7%)       |
|                                         | 62,688 (22.7%) | 9,196 (13.8%)       |
| South                                   | 21,658 (40.2%) | 6,700 (42.9%)       |
|                                         | 10,4873 (38.0%)| 31,555 (47.2%)      |
| West                                    | 8,746 (16.2%)  | 3,671 (23.5%)       |
|                                         | 54,003 (19.6%) | 7,185 (10.8%)       |
| Unknown                                 | 568 (1.1%)     | 231 (1.5%)          |
|                                         | 867 (1.3%)     | 231 (1.5%)          |
| History of CHD, n (%)                   | 7,370 (13.7%)  | 1,905 (12.2%)       |
|                                         | 2,334 (0.8%)   | 910 (1.4%)          |
| Diabetes, n (%)                         | 14,571 (27.1%) | 3,253 (20.8%)       |
|                                         | 10,148 (3.7%)  | 3,411 (5.1%)        |
| History of stroke, %                    | 547 (1.0%)     | 265 (1.7%)          |
|                                         | 360 (0.1%)     | 331 (0.5%)          |
| History of peripheral artery disease, n (%) | 353 (0.7%)    | 153 (1.0%)          |
|                                         | 226 (0.1%)     | 156 (0.2%)          |
| History of heart failure, n (%)          | 585 (1.1%)     | 273 (1.7%)          |
|                                         | 419 (0.2%)     | 427 (0.6%)          |
| Chronic kidney disease, n (%)           | 2,245 (4.2%)   | 1,218 (7.8%)        |
|                                         | 2,384 (0.9%)   | 2,631 (3.9%)        |
| Liver disease, n (%)                    | 267 (0.5%)     | 340 (2.2%)          |
|                                         | 1,028 (0.4%)   | 1,985 (3.0%)        |
| Cardiologist care, n (%)                | 2,728 (5.1%)   | 1,229 (7.9%)        |
|                                         | 3,899 (1.4%)   | 1,578 (2.4%)        |
| Any hospitalization, n (%)              | 4,054 (7.5%)   | 1,884 (12.1%)       |
|                                         | 8,244 (12.3%)  | 8,244 (12.3%)       |
| Depression, n (%)                       | 10,635 (19.8%) | 4,949 (31.7%)       |
|                                         | 28,744 (10.4%) | 14,720 (22.0%)      |
| Tobacco use, n (%)                      | 2,577 (4.8%)   | 1,038 (6.6%)        |
|                                         | 6,841 (2.5%)   | 4,602 (6.9%)        |
| Polypharmacy, n (%)                     | 15,515 (28.8%) | 8,611 (55.1%)       |
|                                         | 17,368 (18.2%) | 18,991 (28.4%)      |
| Antihypertensive medication use, n (%)  | 35,045 (65.1%) | 8,762 (56.1%)       |
|                                         | 42,688 (15.5%) | 14,978 (22.4%)      |
| Statin use, n (%)                       |                |                    |
| No statin use                           | -              | 275,862 (100%)      |
| Low/moderate-intensity statin use       | 44,421 (82.5%) | 12,049 (77.1%)      |
|                                         | -              | 66,807 (100%)       |
| High-intensity statin use               | 9,421 (17.5%)  | 3,570 (22.9%)       |
| Non-statin lipid-lowering medication use, n (%) | 9,266 (17.2%) | 5,478 (2.0%)        |
|                                         | 2,959 (4.4%)   | 14,847 (22.2%)      |
| ART use, n (%)                          |                |                    |
| NRTIs                                   | 15,243 (97.6%) | -                   |
|                                         | 63,852 (95.6%) | -                   |
| NNRTI                                   | 6,672 (42.7%)  | -                   |
|                                         | 34,700 (51.9%) | -                   |
| Protease inhibitors                     | 6,768 (43.3%)  | -                   |
|                                         | 29,697 (44.5%) | -                   |
| Other                                   | 4,228 (27.1%)  | -                   |
|                                         | 16,485 (24.7%) | -                   |
|                                         | 3,043 (19.5%)  | -                   |
|                                         | 14,847 (22.2%) | -                   |

ART: antiretroviral therapy; CHD: coronary heart disease; HIV: human immunodeficiency virus; NNRTI: non-nucleoside reverse transcriptase inhibitors; NRTI: nucleoside reverse transcriptase inhibitors. Other ART includes fusion inhibitors, entry inhibitors, integrase strand transfer inhibitors, and pharmacokinetic enhancers.
Table S6. Hazard ratios for an atherosclerotic cardiovascular disease hospitalization among beneficiaries with versus without HIV across subgroups defined by beneficiary characteristics stratified by statin use.

|                                | Taking a statin | p-value* | Not taking a statin | p-value* |
|--------------------------------|-----------------|----------|---------------------|----------|
|                                | HR (95% CI)     |          | HR (95% CI)         |          |
| Age, years                     |                 |          |                     |          |
| 19-44                          | 1.36 (0.79, 2.33)|          | 1.80 (1.38, 2.36)   |          |
| 45-54                          | 1.43 (1.13, 1.80)| 0.76     | 1.14 (0.97, 1.35)   | 0.03     |
| 55-64                          | 1.20 (0.99, 1.47)|          | 1.23 (1.03, 1.48)   |          |
| ≥65                            | 1.26 (0.91, 1.74)|          | 1.06 (0.75, 1.50)   |          |
| Calendar year                  |                 |          |                     |          |
| 2011                           | 1.29 (1.09, 1.53)|          | 1.23 (1.07, 1.42)   |          |
| 2012                           | 1.24 (0.89, 1.72)|          | 1.30 (1.00, 1.69)   |          |
| 2013                           | 1.38 (0.87, 2.19)| >0.99    | 0.92 (0.64, 1.33)   | 0.08     |
| 2014                           | 1.17 (0.70, 1.97)|          | 1.36 (0.90, 2.04)   |          |
| 2015                           | 1.24 (0.65, 2.35)|          | 1.93 (1.33, 2.80)   |          |
| 2016                           | 1.29 (0.49, 3.36)|          | 0.74 (0.33, 1.63)   |          |
| Men                            | 1.28 (1.12, 1.48)| 0.82     | 1.27 (1.13, 1.42)   | 0.99     |
| Women                          | 1.22 (0.82, 1.82)|          | 1.26 (0.92, 1.73)   |          |
| Region of residence            |                 |          |                     |          |
| Northeast                      | 1.33 (1.00, 1.77)|          | 1.12 (0.88, 1.42)   |          |
| North central                  | 1.28 (0.94, 1.74)| 0.57     | 1.21 (0.94, 1.55)   | 0.61     |
| South                          | 1.19 (0.97, 1.47)|          | 1.40 (1.19, 1.64)   |          |
| West                           | 1.43 (1.03, 1.97)|          | 1.17 (0.88, 1.55)   |          |
| History of CHD                 | 1.29 (1.04, 1.61)| 0.96     | 1.55 (1.09, 2.21)   | 0.24     |
| Without history of CHD         | 1.28 (1.08, 1.50)|          | 1.22 (1.09, 1.37)   |          |
| Diabetes                       | 1.11 (0.89, 1.38)|          | 1.24 (0.96, 1.60)   | 0.99     |
| Without diabetes               | 1.38 (1.17, 1.63)| 0.14     | 1.24 (1.10, 1.39)   |          |
| Stroke                         | 0.67 (0.35, 1.30)| 0.06     | 1.41 (0.71, 2.79)   | 0.66     |
| Without stroke                 | 1.32 (1.15, 1.50)|          | 1.25 (1.12, 1.39)   |          |
| Peripheral artery disease      | 0.75 (0.36, 1.55)| 0.13     | 2.15 (1.03, 4.49)   | 0.11     |
| Without peripheral artery disease | 1.31 (1.14, 1.49)|          | 1.23 (1.11, 1.38)   |          |
| Heart failure                  | 2.43 (1.40, 4.20)| 0.02     | 1.18 (0.64, 2.17)   | 0.87     |
| Without heart failure          | 1.24 (1.08, 1.42)|          | 1.25 (1.12, 1.39)   |          |
| Chronic kidney disease         | 1.28 (0.93, 1.77)| 0.97     | 1.07 (0.77, 1.49)   | 0.32     |
| Without chronic kidney disease | 1.28 (1.11, 1.48)|          | 1.26 (1.12, 1.41)   |          |
| Liver disease                  | 4.07 (1.24, 13.32)| 0.07    | 0.52 (0.26, 1.02)   | 0.01     |
| Without liver disease          | 1.25 (1.10, 1.43)|          | 1.28 (1.15, 1.43)   |          |
| Cardiologist care              | 1.53 (1.04, 2.24)| 0.31     | 1.52 (0.90, 2.59)   | 0.49     |
| Without cardiologist care      | 1.24 (1.08, 1.43)|          | 1.25 (1.12, 1.40)   |          |
| Prior hospitalization          | 1.58 (1.23, 2.04)| 0.05     | 1.37 (1.09, 1.73)   | 0.25     |
| Without prior hospitalization  | 1.18 (1.01, 1.38)|          | 1.18 (1.04, 1.33)   |          |
| Depression                     | 1.30 (1.02, 1.65)| 0.89     | 1.04 (0.82, 1.32)   | 0.07     |
| Without depression             | 1.27 (1.09, 1.49)|          | 1.32 (1.17, 1.49)   |          |
| Tobacco use                    | 1.33 (0.88, 2.01)| 0.85     | 1.40 (0.99, 1.98)   | 0.45     |
| No tobacco use                 | 1.26 (1.10, 1.45)|          | 1.23 (1.10, 1.38)   |          |
| Polypharmacy                   | 1.17 (1.00, 1.38)| 0.05     | 1.14 (0.95, 1.37)   | 0.33     |
| Without polypharmacy           | 1.55 (1.24, 1.93)|          | 1.27 (1.11, 1.45)   |          |
| Antihypertensive medication use | 1.27 (1.10, 1.47)| 0.97     | 1.25 (1.07, 1.47)   | 0.65     |
| No antihypertensive medication use | 1.28 (0.95, 1.72)|          | 1.20 (1.03, 1.38)   |          |
| Non-statin lipid lowering medication use | 1.04 (0.81, 1.34)| 0.08 | 1.40 (0.97, 2.01) | 0.59 |
| No non-statin lipid lowering medication use | 1.37 (1.18, 1.60)|          | 1.24 (1.11, 1.38)   |          |

CHD: coronary heart disease; CI: confidence interval; HIV: human immunodeficiency virus; HR: hazard ratio.
Hazard ratios include adjustment for age, sex, calendar year, geographic region of residence, history of CHD, diabetes, stroke, peripheral artery disease, heart failure, chronic kidney disease, liver disease, cardiologist care, any hospitalization, depression, tobacco use, polypharmacy, antihypertensive medication use, and non-statin lipid-lowering medication use.

* Comparing HR for atherosclerotic cardiovascular disease hospitalizations associated with HIV infection across subgroups defined by beneficiary characteristics.
| Characteristic                                      | Taking a Statin | Not Taking a Statin |
|----------------------------------------------------|-----------------|---------------------|
| **Age, years**                                     |                 |                     |
| 19-44                                              | 1.14 (0.60, 2.18)| 1.66 (1.18, 2.35)   |
| 45-54                                              | 1.50 (1.15, 1.96)| 1.10 (0.90, 1.35)   |
| 55-64                                              | 1.17 (0.92, 1.50)| 1.14 (0.90, 1.44)   |
| ≥65                                                | 1.34 (0.90, 1.98)| 1.08 (0.71, 1.66)   |
| **Calendar year**                                  |                 |                     |
| 2011                                               | 1.28 (1.05, 1.56)| 1.16 (0.97, 1.39)   |
| 2012                                               | 1.21 (0.81, 1.80)| 1.32 (0.96, 1.81)   |
| 2013                                               | 1.48 (0.86, 2.53)| 0.71 (0.44, 1.14)   |
| 2014                                               | 1.14 (0.58, 2.24)| 1.41 (0.84, 2.36)   |
| 2015                                               | 1.84 (0.86, 3.93)| 2.14 (1.34, 3.42)   |
| 2016                                               | 1.93 (0.62, 5.99)| 0.47 (0.15, 1.47)   |
| **Men**                                            |                 |                     |
| Women                                              | 1.32 (1.12, 1.56)| 1.19 (1.04, 1.37)   |
| **Geographic region of residence**                 |                 |                     |
| Northeast                                          | 1.38 (0.98, 1.94)| 1.01 (0.74, 1.37)   |
| North central                                      | 1.46 (1.02, 2.07)| 1.04 (0.75, 1.42)   |
| South                                              | 1.15 (0.89, 1.48)| 1.37 (1.13, 1.67)   |
| West                                               | 1.52 (1.05, 2.20)| 1.21 (0.86, 1.70)   |
| History of CHD                                     | 1.32 (1.03, 1.69)| 1.60 (1.06, 2.41)   |
| Without history of CHD                             | 1.28 (1.05, 1.57)| 1.15 (1.00, 1.35)   |
| Diabetes                                           | 1.16 (0.89, 1.50)| 1.25 (0.91, 1.72)   |
| Without diabetes                                    | 1.39 (1.14, 1.69)| 1.16 (0.91, 1.45)   |
| Stroke                                             | 0.68 (0.22, 2.15)| 1.36 (0.39, 4.78)   |
| Without stroke                                      | 1.32 (1.13, 1.55)| 1.20 (0.85, 1.57)   |
| Peripheral artery disease                          | 0.40 (0.11, 1.49)| 0.93 (0.29, 2.98)   |
| Without peripheral artery disease                  | 1.33 (1.14, 1.56)| 1.20 (0.55, 2.30)   |
| Heart failure                                       | 2.35 (1.19, 4.65)| 1.12 (0.55, 2.30)   |
| Without heart failure                              | 1.27 (1.08, 1.49)| 1.18 (0.70, 1.35)   |
| Chronic kidney disease                             | 1.17 (0.79, 1.72)| 0.85 (0.57, 1.27)   |
| Without chronic kidney disease                     | 1.32 (1.11, 1.57)| 1.21 (0.55, 2.30)   |
| Liver disease                                       | 5.63 (0.97, 32.61)| 0.67 (0.29, 1.57)   |
| Without liver disease                              | 1.28 (1.09, 1.50)| 1.21 (0.85, 1.57)   |
| Cardiologist care                                   | 1.60 (1.02, 2.50)| 1.26 (0.67, 2.39)   |
| Without cardiologist care                           | 1.26 (1.06, 1.49)| 1.20 (1.05, 1.38)   |
| Prior hospitalization                               | 1.68 (1.23, 2.99)| 1.17 (0.88, 1.56)   |
| Without prior hospitalization                       | 1.20 (1.00, 1.44)| 1.16 (1.00, 1.35)   |
| Depression                                          | 1.44 (1.08, 1.93)| 1.01 (0.76, 1.36)   |
| Without depression                                  | 1.26 (1.04, 1.52)| 1.26 (1.09, 1.46)   |
| Tobacco use                                         | 1.54 (0.91, 2.62)| 1.11 (0.71, 1.73)   |
| No tobacco use                                      | 1.28 (1.08, 1.51)| 1.19 (1.04, 1.37)   |
| Polypharmacy                                        | 1.20 (0.99, 1.46)| 1.12 (0.89, 1.41)   |
| Without polypharmacy                                | 1.56 (1.20, 2.02)| 1.18 (1.00, 1.40)   |
| Antihypertensive medication use                     | 1.33 (1.12, 1.58)| 1.20 (0.98, 1.46)   |
| No antihypertensive medication use                  | 1.16 (0.80, 1.67)| 1.13 (0.95, 1.36)   |
| Non-statins lipid lowering medication use           | 1.04 (0.77, 1.40)| 1.27 (0.81, 1.98)   |
| No non-statins lipid lowering medication use        | 1.42 (1.18, 1.70)| 1.18 (1.02, 1.35)   |

CHD: coronary heart disease; CI: confidence interval; HIV: human immunodeficiency virus; HR: hazard ratio.
Hazard ratios include adjustment for age, sex, calendar year, geographic region of residence, history of CHD, diabetes, stroke, peripheral artery disease, heart failure, chronic kidney disease, liver disease, cardiologist care, any hospitalization, depression, tobacco use, polypharmacy, antihypertensive medication use, and non-statin lipid-lowering medication use.

* Comparing HR for myocardial infarction hospitalizations associated with HIV infection across subgroups defined by beneficiary characteristics.
## Table S8. Hazard ratios for a stroke hospitalization among beneficiaries with versus without HIV across subgroups defined by beneficiary characteristics stratified by statin use.

|                                | Taking a statin | Not taking a statin |
|--------------------------------|-----------------|---------------------|
|                                | HR (95% CI)     | p-value*            | HR (95% CI)     | p-value*            |
| **Age, years**                 |                 |                     |                 |                     |
| 19-44                          | 1.67 (0.58, 4.82)| 0.93               | 2.14 (1.34, 3.41)| 0.09               |
| 45-54                          | 1.28 (0.75, 2.20)|                     | 1.04 (0.74, 1.45)|                     |
| 55-64                          | 1.28 (0.87, 1.89)|                     | 1.39 (1.00, 1.92)|                     |
| ≥65                            | 1.10 (0.59, 2.04)|                     | 1.12 (0.61, 2.06)|                     |
| **Calendar year**              |                 |                     |                 |                     |
| 2011                           | 1.20 (0.84, 1.73)|                     | 1.38 (1.07, 1.78)|                     |
| 2012                           | 1.29 (0.69, 2.38)|                     | 1.00 (0.58, 1.73)|                     |
| 2013                           | 1.70 (0.65, 4.42)|                     | 1.28 (0.68, 2.42)| 0.84               |
| 2014                           | 1.28 (0.51, 3.22)|                     | 1.72 (0.86, 3.45)|                     |
| 2015                           | 0.59 (0.15, 2.37)|                     | 1.50 (0.75, 2.99)|                     |
| 2016                           | †               |                     | 0.92 (0.23, 3.73)|                     |
| **Men**                        | 1.19 (0.89, 1.59)| 0.27               | 1.37 (1.11, 1.69)| 0.83               |
| **Women**                      | 1.87 (0.92, 3.82)|                     | 1.26 (0.74, 2.15)|                     |
| **Geographic region of residence** |                 |                     |                 |                     |
| Northeast                      | 1.20 (0.66, 2.17)|                     | 1.21 (0.78, 1.87)|                     |
| North central                  | 0.82 (0.40, 1.69)|                     | 1.72 (1.13, 2.61)|                     |
| South                          | 1.46 (0.98, 2.18)| 0.75               | 1.16 (0.86, 1.58)| 0.53               |
| West                           | 1.25 (0.60, 2.60)|                     | 1.61 (0.98, 2.66)|                     |
| History of CHD                 | 1.17 (0.71, 1.95)| 0.81               | 1.53 (0.66, 3.52)| 0.83               |
| Without history of CHD         | 1.29 (0.94, 1.77)|                     | 1.32 (1.08, 1.61)|                     |
| Diabetes                       | 1.08 (0.72, 1.63)| 0.48               | 1.39 (0.88, 2.18)| 0.78               |
| Without diabetes               | 1.32 (0.92, 1.90)|                     | 1.30 (1.04, 1.61)|                     |
| Stroke                         | 0.62 (0.24, 1.60)| 0.13               | 1.26 (0.52, 3.04)| >0.99              |
| Without stroke                 | 1.34 (1.01, 1.77)|                     | 1.32 (1.08, 1.61)|                     |
| **Peripheral artery disease**  | †               |                     | †               | †                  |
| Without peripheral artery disease | 1.23 (0.93, 1.61)|                     | 1.31 (1.07, 1.59)|                     |
| Heart failure                  | 1.55 (0.47, 5.17)| 0.58               | 2.72 (0.51, 14.45)| 0.36               |
| Without heart failure          | 1.21 (0.91, 1.59)|                     | 1.32 (1.08, 1.60)|                     |
| Chronic kidney disease         | 1.42 (0.74, 2.72)| 0.70               | 1.84 (0.95, 3.59)| 0.35               |
| Without chronic kidney disease | 1.22 (0.91, 1.64)|                     | 1.29 (1.05, 1.58)|                     |
| Liver disease                  | †               |                     | †               | †                  |
| Without liver disease          | 1.20 (0.91, 1.57)|                     | 1.36 (1.12, 1.65)|                     |
| Cardiologist care              | 1.52 (0.68, 3.42)| 0.60               | 3.05 (0.88, 10.55)| 0.20               |
| Without cardiologist care      | 1.21 (0.91, 1.61)|                     | 1.30 (1.06, 1.58)|                     |
| Prior hospitalization          | 1.40 (0.87, 2.27)|                     | 2.09 (1.30, 3.33)|                     |
| Without prior hospitalization  | 1.16 (0.84, 1.61)| 0.49               | 1.14 (0.91, 1.43)| 0.02               |
| Depression                     | 0.94 (0.58, 1.52)| 0.17               | 1.39 (0.89, 2.16)| 0.86               |
| Without depression             | 1.39 (1.01, 1.92)|                     | 1.31 (1.05, 1.63)|                     |
| Tobacco use                    | 0.97 (0.41, 2.29)| 0.56               | 1.64 (0.83, 3.25)| 0.46               |
| No tobacco use                 | 1.25 (0.94, 1.67)|                     | 1.29 (1.05, 1.58)|                     |
| Polypharmacy                   | 1.16 (0.84, 1.60)| 0.47               | 1.10 (0.79, 1.54)| 0.26               |
| Without polypharmacy           | 1.47 (0.92, 2.33)|                     | 1.40 (1.10, 1.78)|                     |
| Antihypertensive medication use | 1.14 (0.84, 1.54)| 0.28               | 1.38 (1.04, 1.84)| 0.49               |
| No antihypertensive medication use | 1.65 (0.92, 2.95)|                     | 1.20 (0.92, 1.58)|                     |
| Non-statin lipid lowering medication use | 0.99 (0.58, 1.70)|                     | 1.80 (0.88, 3.68)|                     |
| No non-statin lipid lowering medication use | 1.32 (0.97, 1.79)| 0.41               | 1.29 (1.06, 1.59)|                     |

CHD: coronary heart disease; CI: confidence interval; HIV: human immunodeficiency virus; HR: hazard ratio.
Hazard ratios include adjustment for age, sex, calendar year, geographic region of residence, history of CHD, diabetes, stroke, peripheral artery disease, heart failure, chronic kidney disease, liver disease, cardiologist care, any hospitalization, depression, tobacco use, polypharmacy, antihypertensive medication use, and non-statin lipid-lowering medication use.

* Comparing HR for stroke hospitalizations associated with HIV infection across subgroups defined by beneficiary characteristics.
† Data not shown given the small number of events. Specifically, among beneficiaries taking a statin, there were 6 stroke events in those in 2016, 9 stroke events in those with a history of peripheral artery disease, and 4 stroke events in those with a history of liver disease. Among beneficiaries not taking a statin, there were 3 stroke events in those with a history of peripheral artery disease and 9 stroke events in those with a history of liver disease.
Table S9. Hazard ratios for a lower extremity artery disease hospitalization among beneficiaries with versus without HIV across subgroups defined by beneficiary characteristics stratified by statin use.

| Characteristic                  | Taking a statin |                      | Not taking a statin |                      |
|--------------------------------|-----------------|----------------------|---------------------|---------------------|
|                                | HR (95% CI)     | p-value*             | HR (95% CI)         | p-value*            |
| Age, years                     |                 |                      |                     |                     |
| 19-44                          | 1.16 (0.11, 11.82) | 0.31                 | 2.11 (0.72, 6.19)   | 0.56                |
| 45-54                          | 0.64 (0.24, 1.71)  |                      | 1.95 (1.16, 3.30)   | 0.56                |
| 55-64                          | 1.66 (0.94, 2.94)  |                      | 1.11 (0.56, 2.20)   | 0.56                |
| ≥65                            | 0.91 (0.31, 2.64)  |                      | 1.23 (0.39, 3.90)   | 0.56                |
| Calendar year                  |                 |                      |                     |                     |
| 2011                           | 1.55 (0.90, 2.68)  | 0.56                 | 1.47 (0.91, 2.39)   | 0.56                |
| 2012                           | 0.82 (0.20, 3.42)  |                      | 2.70 (1.08, 6.77)   | 0.56                |
| 2013                           | 1.10 (0.28, 4.29)  |                      | 1.43 (0.37, 5.58)   | 0.56                |
| 2014                           | 0.71 (0.12, 4.37)  |                      | 0.27 (0.03, 2.82)   | 0.56                |
| 2015                           | 1.95 (1.16, 3.30)  |                      | 1.78 (0.57, 5.56)   | 0.56                |
| 2016                           | 1.55 (0.90, 2.68)  |                      | 1.47 (0.91, 2.39)   | 0.56                |
| Men                            | 1.28 (0.83, 1.97)  | 0.35                 | 1.60 (1.09, 2.37)   | 0.32                |
| Women                          | 0.43 (0.05, 3.90)  |                      | 1.41 (0.51, 3.93)   | 0.32                |
| Region of residence            |                 |                      |                     |                     |
| Northeast                      | 0.41 (0.13, 1.33)  |                      | 1.70 (0.71, 4.06)   | 0.32                |
| North central                  | 1.42 (0.50, 4.01)  |                      | 1.91 (0.69, 5.29)   | 0.32                |
| South                          | 1.19 (0.62, 2.26)  |                      | 2.04 (1.26, 3.28)   | 0.32                |
| West                           | 2.25 (0.64, 7.95)  |                      | 0.20 (0.04, 0.99)   | 0.32                |
| History of CHD                 | 1.49 (0.72, 3.06)  |                      | 0.87 (0.27, 2.77)   | 0.32                |
| Without history of CHD         | 1.08 (0.63, 1.83)  |                      | 1.65 (1.12, 2.43)   | 0.32                |
| Diabetes                       | 0.73 (0.33, 1.63)  |                      | 0.77 (0.33, 1.81)   | 0.32                |
| Without diabetes               | 1.56 (0.93, 2.62)  | 0.12                 | 1.76 (1.17, 2.65)   | 0.32                |
| Stroke                         | 1.22 (0.78, 1.91)  |                      | 1.53 (1.06, 2.21)   | 0.32                |
| Without stroke                 | 1.08 (0.39, 2.95)  |                      | 2.96 (0.96, 9.10)   | 0.32                |
| Peripheral artery disease      | 1.21 (0.75, 1.95)  | 0.92                 | 1.38 (0.93, 2.05)   | 0.32                |
| Heart failure                  | 1.62 (0.36, 7.20)  | 0.73                 | 0.12 (0.00, 3.85)   | 0.32                |
| Without heart failure          | 1.14 (0.72, 1.78)  |                      | 1.62 (1.11, 2.34)   | 0.32                |
| Chronic kidney disease         | 1.18 (0.41, 3.36)  |                      | 1.19 (0.33, 4.33)   | 0.32                |
| Without chronic kidney disease | 1.27 (0.79, 2.04)  |                      | 1.66 (1.14, 2.42)   | 0.32                |
| Liver disease                  | 1.24 (0.81, 1.90)  |                      | 1.73 (1.20, 2.49)   | 0.32                |
| Without liver disease          | 1.41 (0.40, 4.97)  | 0.66                 | 0.97 (0.13, 7.41)   | 0.32                |
| Cardiologist care              | 1.11 (0.70, 1.75)  |                      | 1.57 (1.08, 2.28)   | 0.32                |
| Without cardiologist care      | 0.93 (0.42, 2.03)  | 0.43                 | 1.22 (0.62, 2.38)   | 0.32                |
| Prior hospitalization          | 1.33 (0.80, 2.22)  |                      | 1.66 (1.07, 2.56)   | 0.32                |
| Without prior hospitalization  | 1.38 (0.63, 3.00)  | 0.67                 | 0.61 (0.25, 1.46)   | 0.32                |
| Depression                     | 1.10 (0.66, 1.85)  |                      | 1.85 (1.24, 2.75)   | 0.32                |
| Without depression             | 1.40 (0.49, 4.01)  | 0.80                 | 2.43 (0.89, 6.61)   | 0.32                |
| Tobacco use                    | 1.18 (0.73, 1.89)  |                      | 1.45 (0.97, 2.17)   | 0.32                |
| Polypharmacy                   | 1.00 (0.60, 1.64)  | 0.20                 | 1.50 (0.84, 2.67)   | 0.32                |
| Without polypharmacy           | 1.80 (0.85, 3.80)  |                      | 1.64 (1.02, 2.64)   | 0.32                |
| Antihypertensive medication use | 1.15 (0.72, 1.83)  |                      | 1.40 (0.85, 2.31)   | 0.32                |
| No antihypertensive medication use | 1.72 (0.64, 4.63)  | 0.47                 | 1.87 (1.12, 3.13)   | 0.32                |
| Non-statin lipid lowering medication use | 1.04 (0.47, 2.30)  | 0.74                 | 2.88 (0.86, 9.69)   | 0.32                |
| No non-statin lipid lowering medication use | 1.24 (0.75, 2.06)  | 0.74                 | 1.55 (1.05, 2.27)   | 0.32                |

CHD: coronary heart disease; CI: confidence interval; HIV: human immunodeficiency virus; HR: hazard ratio.
Hazard ratios include adjustment for age, sex, calendar year, geographic region of residence, history of CHD, diabetes, stroke, peripheral artery disease, heart failure, chronic kidney disease, liver disease, cardiologist care, any hospitalization, depression, tobacco use, polypharmacy, antihypertensive medication use, and non-statin lipid-lowering medication use.

* Comparing HR for lower extremity artery disease hospitalizations associated with HIV infection across subgroups defined by beneficiary characteristics.
† Data not shown given the small number of lower extremity artery disease hospitalizations (n<10) in each cell.
Figure S1. Flow-chart of beneficiaries with HIV in the MarketScan database included in and excluded from the current analysis.

Beneficiaries with ≥1 hospitalization with a discharge diagnosis code for HIV or ≥2 pharmacy claims for ART between January 1, 2011 and December 31, 2016
N = 120,129

811 beneficiaries <19 years of age on their index date excluded

Beneficiaries ≥19 years of age
N = 119,318

36,857 beneficiaries without 365 days of continuous insurance coverage prior to their index date excluded

Beneficiaries with 365 days of continuous insurance coverage, including pharmacy coverage
N = 82,461

35 beneficiaries who did not live in the United States for 365 days prior to their index date excluded

Beneficiaries who lived in the United States for 365 days
N = 82,426

ART: antiretroviral therapy; HIV: human immunodeficiency virus.
Persons without HIV were matched 4:1 on age, sex and calendar year with persons with HIV in the MarketScan database.
Supplemental References:

1. Kent ST, Safford MM, Zhao H, Levitan EB, Curtis JR, Kilpatrick RD, Kilgore ML, Muntner P. Optimal Use of Available Claims to Identify a Medicare Population Free of Coronary Heart Disease. *Am J Epidemiol.* 2015;182:808-819.

2. Kumamaru H, Judd SE, Curtis JR, Ramachandran R, Hardy NC, Rhodes JD, Safford MM, Kissela BM, Howard G, Jalbert JJ, Brott TG, Setoguchi S. Validity of claims-based stroke algorithms in contemporary Medicare data: reasons for geographic and racial differences in stroke (REGARDS) study linked with medicare claims. *Circ Cardiovasc Qual Outcomes.* 2014;7:611-619.

3. Hirsch AT, Hartman L, Town RJ, Virnig BA. National health care costs of peripheral arterial disease in the Medicare population. *Vasc Med.* 2008;13:209-215.

4. Elixhauser A, Steiner C, Harris DR, Coffey RM. Comorbidity measures for use with administrative data. *Med Care.* 1998;36:8-27.

5. Gandra SR, Lawrence LW, Parasuraman BM, Darin RM, Sherman JJ, Wall JL. Total and component health care costs in a non-Medicare HMO population of patients with and without type 2 diabetes and with and without macrovascular disease. *J Manag Care Pharm.* 2006;12:546-554.

6. Quan H, Li B, Saunders LD, Parsons GA, Nilsson CI, Alibhai A, Ghali WA. Assessing validity of ICD-9-CM and ICD-10 administrative data in recording clinical conditions in a unique dually coded database. *Health Serv Res.* 2008;43:1424-1441.
7. Schneider KM, O'Donnell BE, Dean D. Prevalence of multiple chronic conditions in the United States' Medicare population. *Health Qual Life Outcomes*. 2009;7:82.

8. Muntner P, Gutierrez OM, Zhao H, Fox CS, Wright NC, Curtis JR, McClellan W, Wang H, Kilgore M, Warnock DG, Bowling CB. Validation study of medicare claims to identify older US adults with CKD using the Reasons for Geographic and Racial Differences in Stroke (REGARDS) Study. *Am J Kidney Dis*. 2015;65:249-258.

9. Noyes K, Liu H, Lyness JM, Friedman B. Medicare beneficiaries with depression: comparing diagnoses in claims data with the results of screening. *Psychiatr Serv*. 2011;62:1159-1166.

10. Desai RJ, Solomon DH, Shadick N, Iannaccone C, Kim SC. Identification of smoking using Medicare data--a validation study of claims-based algorithms. *Pharmacoepidemiol Drug Saf*. 2016;25:472-475.