

Supplemental Appendix to *Safety of hydroxychloroquine, alone or in combination with azithromycin, in light of rapid wide-spread use for COVID-19: a multinational, network cohort and self-controlled case series study*

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All artifacts generated as part of this study are publicly available in an interactive, web-based application at: <https://data.ohdsi.org/Covid19EstimationHydroxychloroquine/>

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S1. Data sources

Database name	Abbreviation	Population	Patients (millions)	Data History	Data capture process and short database description
Veteran's Health Administration	VA	USA (Veteran population)	~12M	2000 –	VA OMOP data reflects the national Department of Veterans Affairs health care system, which is the largest integrated provider of medical and mental health services in the United States. Care is provided at 170 VA Medical Centers and 1,063 outpatient sites serving more than 9 million enrolled Veterans each year.
IQVIA Disease Analyzer Germany	DAGermany	Germany (General population)	37M	1992 –	Anonymized patient records collected from Patient Management software used by general practitioners and selected specialists to document patients' medical records within their office-based practice during a visit.
IQVIA UK Integrated Medical Record Data	IMRD	UK (General population)	15M	1989 –	Pseudonymized Electronic Medical Records collected from patient management software used within UK Primary Care
IQVIA US Ambulatory EMR	AmbEMR	USA (General population)	49M	2006 –	General practice EHR, Outpatient specialist EHR - Dataset consists of longitudinal, de-identified ambulatory electronic health records data
IQVIA US LRxD Open Claims	OpenClaims	USA (General population)	654M	2010 –	Pre-adjudicated claims at the anonymized patient level collected from office-based physicians and specialists via office management software and clearinghouse switch sources for the purpose of reimbursement.
Clinical Practice Research Datalink	CPRD	UK (General population)	13M	1995 –	De-identified patient data from a network of general practitioners' practices across the UK. Primary care data are linked to a range of other health related data to provide a longitudinal, representative UK population health dataset.
IBM MarketScan Commercial Claims	CCAE	USA (Patients with commercial insurance aged <65 years)	142M	2000 –	Data from individuals enrolled in US employer-sponsored insurance health plans. The data includes adjudicated health insurance claims (e.g. inpatient, outpatient, and outpatient pharmacy) as well as enrollment data from large employers and health plans who provide private healthcare coverage to employees, their spouses, and dependents. Additionally, it captures laboratory tests for a subset of the covered lives.
IBM MarketScan Multi-State Medicaid Database	MDCD	USA	26M	2006 –	Adjudicated US health insurance claims for Medicaid enrollees from multiple states and includes hospital discharge diagnoses, outpatient diagnoses and procedures, and outpatient pharmacy claims as well as ethnicity and Medicare eligibility.
IBM MarketScan Medicare Supplemental Database	MDCR	USA (Patients with commercial insurance aged 65+ years)	10M	2000 –	Represents health services of retirees (aged 65 or older) in the United States with primary or Medicare supplemental coverage through privately insured fee-for-service, point-of-service, or capitated health plans. These data include adjudicated health insurance claims (e.g. inpatient, outpatient, and outpatient pharmacy). Additionally, it captures laboratory tests for a subset of the covered lives.
Integrated Primary Care Information	IPCI	Netherlands (General Population)	2.5M	1996–	Complete medical records collected from 450 general practitioners with geographical representation of the country.
Japan Medical Data Center	JMDC	Japan (insured general population)	5.5M	2005 –	Data from 60 Society-Managed Health Insurance plans covering workers aged 18 to 65 and their dependents (children younger than 18 years old and elderly people older than 65 years old). JMDC data includes membership status of the insured people and claims data provided by insurers under contract (e.g. patient-level demographic information, inpatient and outpatient data inclusive of diagnosis and procedures, and prescriptions as dispensed claims information)
Optum De-Identified Clininformatics DataMart (DOD)	Optum	USA (Patients with commercial insurance or commercial Medicare insurance)	85M	2000 –	Inpatient and outpatient healthcare insurance claims
Optum De-identified Electronic Health Record Dataset	PanTher	USA (General population)	93M	2006 –	Optum's de-identified electronic health record data medical records database. The medical record data includes clinical information, inclusive of prescriptions as prescribed and administered, lab results, vital signs, body measurements, diagnoses, procedures, and information derived from clinical notes using Natural Language Processing (NLP).
The Information System for Research in Primary Care	SIDIAP	Spain-Catalonia (80% of general population)	7.7M	2006 –	Electronic health records from primary care partially linked to inpatient data. SIDIAP is also linked to a pharmacy dispensations and primary care laboratories. Healthcare is universal and taxpayer funded in the region, and primary care physicians are gatekeepers for all care and responsible for repeat prescriptions.

S2. Cohort definitions

S2.1. Exposures

The four exposure cohorts were constructed using the logic below. The full specification, including complete code sets and computer readable JSON and SQL representations are publicly available at the URLs for each definition:

S5.1.1. New users of Hydroxychloroquine with prior rheumatoid arthritis

<https://atlas.ohdsi.org/#/cohortdefinition/173>

Initial Event Cohort

People having any of the following:

- a drug exposure of [OHDSI Cov19] Hydroxychloroquine¹
 - for the first time in the person's history
 - with age ≥ 18

with continuous observation of at least 365 days prior and 0 days after event index date, and limit initial events to: **earliest event per person**.

Inclusion Rules

Inclusion Criteria #1: has rheumatoid arthritis recorded any time on or prior to treatment

Having any of the following criteria:

- at least 1 occurrences of a condition occurrence of [OHDSI Cov19] Rheumatoid arthritis²
where event starts between all days Before and 0 days After index start date
- or at least 1 occurrences of an observation of [OHDSI Cov19] Rheumatoid arthritis²
where event starts between all days Before and 0 days After index start date

Limit qualifying cohort to: **earliest event per person**.

End Date Strategy

Custom Drug Era Exit Criteria

This strategy creates a drug era from the codes found in the specified concept set. If the index event is found within an era, the cohort end date will use the era's end date. Otherwise, it will use the observation period end date that contains the index event.

Use the era end date of [OHDSI Cov19] Hydroxychloroquine¹

- allowing 90 days between exposures
- adding 0 days after exposure end

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

S5.1.2. New users of sulfasazine with prior rheumatoid arthritis

<https://atlas.ohdsi.org/#/cohortdefinition/45>

Initial Event Cohort

People having any of the following:

- a drug exposure of [OHDSI Cov19] sulfasalazine²
 - for the first time in the person's history

with continuous observation of at least 365 days prior and 0 days after event index date, and limit initial events to: **earliest event per person**.

Inclusion Rules

Inclusion Criteria #1: has rheumatoid arthritis recorded any time on or prior to treatment

Having all of the following criteria:

- at least 1 occurrences of a condition occurrence of [OHDSI Cov19] Rheumatoid arthritis¹
where event starts between all days Before and 0 days After index start date

Limit qualifying cohort to: **earliest event per person**.

End Date Strategy

Custom Drug Era Exit Criteria

This strategy creates a drug era from the codes found in the specified concept set. If the index event is found within an era, the cohort end date will use the era's end date. Otherwise, it will use the observation period end date that contains the index event.

Use the era end date of [OHDSI Cov19] sulfasalazine²

- allowing 90 days between exposures
- adding 0 days after exposure end

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

S5.1.3. Users of Hydroxychloroquine + Azithromycin

<https://atlas.ohdsi.org/#/cohortdefinition/170>

Initial Event Cohort

People having any of the following:

- a drug exposure of Hydroxychloroquine¹
 - with age ≥ 18
- a drug exposure of [OHDSI Covid19] Azithromycin³
 - with age ≥ 18

with continuous observation of at least 365 days prior and 0 days after event index date, and limit initial events to: **all events per person**.

Inclusion Rules

Inclusion Criteria #1: has both drugs on index

Having all of the following criteria:

- at least 1 occurrences of a drug exposure of Hydroxychloroquine¹
where event starts between 30 days Before and 0 days After index start date
- and at least 1 occurrences of a drug exposure of [OHDSI Covid19] Azithromycin³
where event starts between 30 days Before and 0 days After index start date

Inclusion Criteria #2: prior diagnosis of RA

Having any of the following criteria:

- at least 1 occurrences of a condition occurrence of [OHDSI Cov19] Rheumatoid arthritis²
where event starts between all days Before and 0 days After index start date
- or at least 1 occurrences of an observation of [OHDSI Cov19] Rheumatoid arthritis²
where event starts between all days Before and 0 days After index start date

Limit qualifying cohort to: **earliest event per person**.

End Date Strategy

Custom Drug Era Exit Criteria

This strategy creates a drug era from the codes found in the specified concept set. If the index event is found within an era, the cohort end date will use the era's end date. Otherwise, it will use the observation period end date that contains the index event.

Use the era end date of [OHDSI Covid19] Azithromycin³

- allowing 30 days between exposures
- adding 0 days after exposure end

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

S5.1.4. Users of Hydroxychloroquine + Amoxicillin

<https://atlas.ohdsi.org/#/cohortdefinition/171>

Initial Event Cohort

People having any of the following:

- a drug exposure of Hydroxychloroquine¹
 - with age ≥ 18
- a drug exposure of [OHDSI Covid19] Amoxicillin³
 - with age ≥ 18

with continuous observation of at least 365 days prior and 0 days after event index date, and limit initial events to: **all events per person**.

Inclusion Rules

Inclusion Criteria #1: has both drugs on index

Having all of the following criteria:

- at least 1 occurrences of a drug exposure of Hydroxychloroquine¹
where event starts between 30 days Before and 0 days After index start date
- and at least 1 occurrences of a drug exposure of [OHDSI Covid19] Amoxicillin³
where event starts between 30 days Before and 0 days After index start date

Inclusion Criteria #2: Prior diagnosis of RA

Having any of the following criteria:

- at least 1 occurrences of a condition occurrence of [OHDSI Cov19] Rheumatoid arthritis²
where event starts between all days Before and 0 days After index start date
- or at least 1 occurrences of an observation of [OHDSI Cov19] Rheumatoid arthritis²
where event starts between all days Before and 0 days After index start date

Limit qualifying cohort to: **earliest event per person**.

End Date Strategy

Custom Drug Era Exit Criteria

This strategy creates a drug era from the codes found in the specified concept set. If the index event is found within an era, the cohort end date will use the era's end date. Otherwise, it will use the observation period end date that contains the index event.

Use the era end date of [OHDSI Covid19] Amoxicillin³

- allowing 30 days between exposures
- adding 0 days after exposure end

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

S2.2. Outcomes

All safety outcomes for this study were defined as described in the supplementary appendix to Suchard et al (2019)[1].

S3. Negative control outcomes

Negative control outcomes are conditions believed to have no causal relationship with hydroxychloroquine, sulfasalazine, azithromycin, or amoxicillin exposure and therefore assumed *a priori* to return a hazard ratio (HR) of 1.0 when their risk is compared between exposure cohorts in a pairwise comparison. A HR of a negative control outcome that differs from 1.0 represents an estimate of the residual error of the analysis that was unaccounted for by the analytic specification such as propensity score adjustment. The distribution of residual error estimates from the negative control outcomes reflects a range of biases inherent to the analysis. The estimates on the negative control outcomes represents the empirical null distribution and we used it to compute hazard ratios and confidence intervals calibrated to reflect the observed residual error of the analysis. The negative controls were selected through a semi-automated process{Voss, 2017 #6} and are listed below with the corresponding SNOMED concept ID.

Concept ID	Concept Name	Concept ID	Concept Name
378256	Abnormal reflex	435516	Lipoprotein deficiency disorder
4092879	Absent kidney	438808	Mammary duct ectasia
433753	Alcohol abuse	441553	Myoclonus
321689	Apnea	4119307	Neurogenic claudication
78200	Benign mammary dysplasia	4209423	Nicotine dependence
4195873	Breath smells unpleasant	438130	Opioid abuse
443792	Calculus of bile duct	313601	Oxygen supply absent
434327	Cannabis abuse	44782778	Pain disorder with psychological factor
197318	Cholesterolosis of gallbladder	4091513	Passing flatus
432303	Cocaine abuse	4022076	Patient dependence on care provider
439125	Complete trisomy 21 syndrome	439971	Poisoning by anticoagulant
433270	Cord entanglement without compression	46286594	Problem related to lifestyle
4311591	Cramp in limb	199876	Prolapse of female genital organs
441267	Cystic fibrosis	4049367	Psychologic conversion disorder
436233	Delayed milestone	440068	Psychosexual dysfunction
40486120	Delay in physiological development	436246	Reduced libido
439791	Emotional upset	73754	Restless legs
374801	Foreign body in ear	4168212	Restlessness and agitation
259995	Foreign body in orifice	138821	Seborrhea
196456	Gallstone	4198492	Shoulder joint unstable
4166231	Genetic predisposition	25518	Sickle cell trait
434164	Glycosuria	4176908	Snapping thumb syndrome
4163735	Hemochromatosis	4248728	Snoring
439871	Hemospermia	138278	Sprains and strains of joints and adjacent muscles
4058388	Hypertrophic scar	4008710	Stenosis due to any device, implant AND/OR graft
435522	Hypervitaminosis D	40479573	Stimulant abuse
443236	Hypnotic or anxiolytic dependence	40483172	Stimulant dependence
4098604	Hypomagnesemia	440233	Strain of supraspinatus muscle AND/OR tendon
435371	Hypothermia	4194160	Thyroid function tests abnormal
443447	Iatrogenic hypotension	4216708	Urgent desire for stool
374375	Impacted cerumen	4275889	Visual hallucinations
4344500	Impingement syndrome of shoulder region	4193634	Worried
440382	Learning difficulties		

S4. Covariate construction

The following consistently extracted set of baseline patient characteristics will be constructed for input in the PS model. From this large set of typically tens of thousands of covariates, key predictors of exposure classification will be selected for inclusion in the PS model. Note that not all data sources necessarily include data for all covariates. Covariates to be included:

- Demographics (age in 5-year bands, sex, race, ethnicity, index year, index month)
- All conditions occurrence records aggregated to SNOMED clinical finding level during the following lookback windows:
 - in 365 days prior to and including index date
 - in 30 days prior to and including index date
- All drug exposure records aggregated to RxNorm ingredient level and ATC classes during the following lookback windows:
 - in 365 days prior to and including index date
 - in 30 days prior to and including index date
 - persistent exposure that overlaps index date
- All procedure occurrence records during the following lookback windows:
 - in 365 days prior to and including index date
 - in 30 days prior to and including index date
- Measurements (including laboratories) within, above, and below normal range during the following lookback window:
 - in 365 days prior to and including index date
- Device exposure records during the following lookback windows:
 - in 365 days prior to and including index date
 - in 30 days prior to and including index date
- Comorbidity or risk scores including:
 - Charlson
 - DCSI
 - CHADS2
 - CHADS2VASc

S5. Exposure cohort counts

Exposure cohort	Database	Patients
Hydroxychloroquine with prior RA N = 1,011,381	AmbEMR	59,403
	CCAE	69,449
	CPRD	11,884
	DAGermany	4,260
	IMRD	10,903
	IPCI	1,575
	JMDC	250
	MDCD	8,338
	MDCR	16,511
	OpenClaims	653,670
	Optum	54,024
	PanTher	83,267
	SIDIAP	1,879
	VA	35,968
Sulfasalazine with prior RA N = 433,779	AmbEMR	21,840
	CCAE	29,278
	CPRD	13,322
	DAGermany	5,486
	IMRD	10,501
	IPCI	670
	JMDC	3,439
	MDCD	2,951
	MDCR	6,679
	OpenClaims	265,867
	Optum	21,953
	PanTher	29,922
	SIDIAP	463
	VA	21,408
Hydroxychloroquine + Azithromycin with prior RA N = 413,147	AmbEMR	14,771
	CCAE	40,324
	CPRD	238
	DAGermany	108
	IMRD	232
	IPCI	153
	MDCD	4,840
	MDCR	10,197
	OpenClaims	282,740
	Optum	29,273
	PanTher	21,972
	SIDIAP	211
	VA	8,088
Hydroxychloroquine + Amoxicillin with prior RA N = 448,870	AmbEMR	14,778
	CCAE	40,694
	CPRD	5,636
	DAGermany	208
	IMRD	5,163
	IPCI	522
	MDCD	4,952
	MDCR	11,209
	OpenClaims	304,394
	Optum	30,496
	PanTher	20,507
	SIDIAP	730
	VA	9,581

S6. Covariate balance before and after PS stratification

S6.1. HCQ vs SSZ

S6.1.1. AmbEMR

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
15-19	0.1	0.1	0.00	0.1	0.1	0.00
20-24	0.7	0.6	0.01	0.7	0.6	0.01
25-29	1.3	1.4	-0.01	1.3	1.4	0.00
30-34	2.4	2.2	0.02	2.3	2.3	0.00
35-39	3.5	3.7	-0.01	3.5	3.4	0.01
40-44	5.4	5.0	0.02	5.3	5.1	0.01
45-49	7.4	7.0	0.02	7.4	7.5	0.00
50-54	10.4	11.0	-0.02	10.5	10.5	0.00
55-59	13.1	13.4	-0.01	13.2	12.9	0.01
60-64	13.8	14.4	-0.02	13.9	14.1	0.00
65-69	13.7	14.2	-0.01	13.8	13.7	0.00
70-74	13.1	13.3	-0.01	13.1	13.9	-0.02
75-79	11.2	9.8	0.05	10.9	11.0	0.00
80-84	3.9	3.9	0.00	3.9	3.7	0.01
Gender: female	79.7	74.1	0.13	78.3	78.4	0.00
Race						
race = Asian	1.4	1.5	-0.02	1.4	1.3	0.00
race = White	70.9	71.7	-0.02	71.1	71.3	0.00
race = African American	8.0	7.8	0.01	8.0	7.7	0.01
Ethnicity						
ethnicity = Hispanic or Latino	1.3	1.8	-0.04	1.4	1.5	-0.01
ethnicity = Not Hispanic or Latino	80.3	81.0	-0.02	80.5	80.3	0.00
Medical history: General						
Acute respiratory disease	13.5	14.2	-0.02	13.7	13.8	0.00
Attention deficit hyperactivity disorder	0.6	0.4	0.02	0.6	0.5	0.01
Chronic liver disease	1.5	1.5	0.00	1.5	1.4	0.01
Chronic obstructive lung disease	7.0	7.2	-0.01	7.1	6.9	0.01
Crohn's disease	0.4	1.1	-0.08	0.5	0.6	-0.02
Dementia	0.6	0.5	0.02	0.6	0.6	0.00
Diabetes mellitus	13.2	13.2	0.00	13.2	13.7	-0.02
Gastroesophageal reflux disease	15.9	14.6	0.04	15.6	15.7	0.00
Gastrointestinal hemorrhage	1.2	1.2	0.00	1.2	1.2	0.00
Human immunodeficiency virus infection	0.1	0.1	0.00	0.1	0.1	0.00
Hyperlipidemia	29.0	28.1	0.02	28.8	29.1	-0.01
Hypertensive disorder	38.0	37.1	0.02	37.8	38.2	-0.01
Lesion of liver	0.9	0.8	0.01	0.9	0.8	0.01
Obesity	8.9	8.9	0.00	8.9	9.0	0.00
Osteoarthritis	25.5	27.1	-0.04	25.8	25.2	0.01
Pneumonia	3.1	3.4	-0.01	3.2	3.1	0.01
Psoriasis	1.5	3.2	-0.11	1.7	2.0	-0.02
Renal impairment	5.3	4.8	0.02	5.2	5.3	-0.01
Rheumatoid arthritis	84.0	82.2	0.05	83.6	84.4	-0.02
Ulcerative colitis	0.3	1.2	-0.10	0.4	0.6	-0.03
Urinary tract infectious disease	6.0	5.2	0.04	5.8	5.5	0.01
Viral hepatitis C	1.0	1.0	0.00	1.0	0.9	0.01
Visual system disorder	8.6	8.8	0.00	8.6	8.5	0.00
Medical history: Cardiovascular disease						
Atrial fibrillation	3.3	3.1	0.01	3.2	3.2	0.00
Cerebrovascular disease	3.1	2.8	0.02	3.1	3.1	0.00
Coronary arteriosclerosis	5.7	5.6	0.00	5.7	5.6	0.00
Heart disease	15.9	14.6	0.04	15.6	15.6	0.00
Heart failure	2.6	2.3	0.02	2.6	2.4	0.01
Ischemic heart disease	1.7	1.6	0.01	1.7	1.5	0.02
Pulmonary embolism	0.8	0.7	0.01	0.8	0.7	0.01
Venous thrombosis	1.3	1.2	0.01	1.3	1.4	-0.01
Medical history: Neoplasms						
Hematologic neoplasm	0.4	0.3	0.02	0.4	0.4	0.01
Malignant lymphoma	0.4	0.5	-0.01	0.4	0.6	-0.03
Malignant neoplasm of anorectum	0.1	0.1	-0.01	0.1	0.1	0.00
Malignant neoplastic disease	6.9	6.6	0.01	6.8	7.0	-0.01
Malignant tumor of breast	1.5	1.4	0.01	1.4	1.6	-0.01
Malignant tumor of colon	0.3	0.3	0.00	0.3	0.3	-0.01
Malignant tumor of lung	0.3	0.4	-0.02	0.3	0.3	-0.01
Malignant tumor of urinary bladder	0.2	0.3	-0.01	0.2	0.2	0.00
Primary malignant neoplasm of prostate	0.4	0.3	0.00	0.4	0.3	0.01
Medication use						
Agents acting on the renin-angiotensin system	33.2	33.6	-0.01	33.3	33.6	-0.01

Antibacterials for systemic use	24.7	25.3	-0.01	24.9	24.5	0.01
Antidepressants	36.1	34.9	0.02	35.7	35.7	0.00
Antiepileptics	24.0	24.1	0.00	24.0	24.0	0.00
Antiinflammatory and antirheumatic products	42.8	44.4	-0.03	43.1	43.4	0.00
Antineoplastic agents	35.9	41.4	-0.11	37.3	37.8	-0.01
Antipsoriatics	0.6	0.7	0.00	0.6	0.7	0.00
Antithrombotic agents	25.2	23.5	0.04	24.9	25.2	-0.01
Beta blocking agents	25.2	25.1	0.00	25.2	25.8	-0.02
Calcium channel blockers	17.5	17.7	0.00	17.5	17.7	0.00
Diuretics	30.6	30.0	0.01	30.5	31.2	-0.01
Drugs for obstructive airway diseases	30.9	30.0	0.02	30.8	31.0	0.00
Drugs used in diabetes	14.2	14.3	0.00	14.3	14.8	-0.01
Immunosuppressants	49.4	61.2	-0.24	52.2	52.1	0.00
Lipid modifying agents	33.2	33.7	-0.01	33.3	33.5	0.00
Opioids	28.4	30.7	-0.05	28.9	28.8	0.00
Psycholeptics	26.3	25.6	0.02	26.1	26.1	0.00
Psychostimulants, agents used for adhd and nootropics	4.0	3.8	0.01	4.0	4.0	0.00

S6.1.2. CCAE

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
20-24	1.9	1.9	0.00	1.8	2.0	-0.01
25-29	2.6	2.6	0.00	2.5	2.7	-0.01
30-34	4.5	4.6	0.00	4.5	4.4	0.00
40-44	9.8	9.5	0.01	9.7	9.5	0.01
45-49	13.7	12.9	0.02	13.6	13.4	0.00
50-54	18.2	18.1	0.00	18.2	18.0	0.01
55-59	20.6	21.0	-0.01	20.8	20.8	0.00
60-64	19.0	19.8	-0.02	19.4	19.8	-0.01
65-69	1.8	1.7	0.00	1.8	1.6	0.01
Gender: female	82.0	74.3	0.19	80.1	79.7	0.01
Medical history: General						
Acute respiratory disease	35.5	34.4	0.02	35.1	34.8	0.01
Chronic liver disease	3.2	3.2	0.00	3.2	3.3	0.00
Chronic obstructive lung disease	4.2	4.5	-0.01	4.3	4.5	-0.01
Crohn's disease	0.6	1.8	-0.12	0.7	1.1	-0.04
Dementia	0.2	0.2	0.01	0.2	0.2	0.00
Depressive disorder	13.4	13.5	0.00	13.3	13.5	0.00
Diabetes mellitus	13.5	13.4	0.00	13.6	13.8	-0.01
Gastroesophageal reflux disease	13.7	13.5	0.01	13.6	13.5	0.00
Gastrointestinal hemorrhage	2.9	3.4	-0.03	3.0	3.2	-0.01
Human immunodeficiency virus infection	0.1	0.2	-0.01	0.1	0.1	0.00
Hyperlipidemia	31.5	30.5	0.02	31.2	31.4	0.00
Hypertensive disorder	34.7	34.9	0.00	34.8	35.0	0.00
Lesion of liver	0.9	0.8	0.01	0.9	0.8	0.00
Obesity	9.3	9.1	0.00	9.2	9.5	-0.01
Osteoarthritis	43.4	44.4	-0.02	43.5	44.2	-0.01
Pneumonia	4.0	3.9	0.00	4.0	4.0	0.00
Psoriasis	3.0	8.9	-0.25	3.8	5.2	-0.07
Renal impairment	3.1	2.8	0.02	3.0	2.8	0.01
Rheumatoid arthritis	84.2	85.7	-0.04	84.9	85.3	-0.01
Schizophrenia	0.1	0.1	-0.01	0.1	0.1	-0.01
Ulcerative colitis	0.6	1.9	-0.12	0.7	1.0	-0.04
Urinary tract infectious disease	11.9	10.8	0.03	11.6	11.5	0.00
Viral hepatitis C	1.1	1.0	0.01	1.1	1.0	0.01
Visual system disorder	25.7	26.2	-0.01	25.7	25.9	0.00
Medical history: Cardiovascular disease						
Atrial fibrillation	1.4	1.3	0.02	1.4	1.3	0.01
Cerebrovascular disease	2.8	2.6	0.01	2.8	2.9	-0.01
Heart disease	15.7	15.0	0.02	15.5	15.4	0.00
Heart failure	1.9	2.0	0.00	1.9	2.0	0.00
Ischemic heart disease	2.9	3.1	-0.01	3.0	3.1	-0.01
Peripheral vascular disease	1.6	1.5	0.01	1.5	1.6	-0.01
Pulmonary embolism	0.8	0.5	0.03	0.8	0.6	0.02
Medical history: Neoplasms						
Hematologic neoplasm	1.0	1.0	0.00	1.0	1.0	0.00
Malignant lymphoma	0.5	0.5	0.00	0.5	0.4	0.02
Malignant neoplasm of anorectum	0.1	0.1	0.00	0.1	0.1	0.00
Malignant tumor of breast	1.8	1.6	0.02	1.7	1.7	0.00
Malignant tumor of colon	0.2	0.2	0.00	0.2	0.2	0.00
Malignant tumor of lung	0.1	0.2	-0.01	0.2	0.1	0.00
Primary malignant neoplasm of prostate	0.4	0.4	-0.01	0.4	0.4	0.00
Medication use						
Agents acting on the renin-angiotensin system	24.3	24.9	-0.01	24.5	24.6	0.00
Antibacterials for systemic use	43.8	44.3	-0.01	43.8	44.0	0.00
Antidepressants	36.4	36.5	0.00	36.3	36.5	0.00
Antiepileptics	20.3	21.0	-0.02	20.4	20.2	0.00
Antiinflammatory and antirheumatic products	55.3	57.4	-0.04	55.8	56.7	-0.02
Antineoplastic agents	30.7	37.8	-0.15	33.0	33.1	0.00
Antipsoratics	0.7	1.2	-0.06	0.7	1.0	-0.03
Antithrombotic agents	7.4	7.3	0.01	7.4	7.3	0.00
Beta blocking agents	15.8	16.2	-0.01	15.9	16.2	-0.01
Calcium channel blockers	11.7	11.5	0.01	11.7	11.8	0.00
Drugs for acid related disorders	32.3	33.6	-0.03	32.6	32.6	0.00
Drugs for obstructive airway diseases	29.7	29.3	0.01	29.5	29.5	0.00
Drugs used in diabetes	10.4	10.5	0.00	10.5	10.8	-0.01
Immunosuppressants	39.6	53.0	-0.27	43.4	43.6	0.00
Lipid modifying agents	22.6	23.5	-0.02	22.8	23.2	-0.01
Opioids	38.5	40.7	-0.05	39.0	39.3	-0.01
Psycholeptics	33.6	33.7	0.00	33.4	33.3	0.00
Psychostimulants, agents used for adhd and nootropics	5.9	5.6	0.01	5.8	5.7	0.01

S6.1.3. CPRD

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
15-19	0.3	0.2	0.01	0.3	0.2	0.00
20-24	0.8	1.0	-0.02	0.9	0.9	-0.01
25-29	1.2	1.7	-0.04	1.4	1.6	-0.02
30-34	2.7	3.1	-0.02	3.0	3.0	0.00
35-39	4.6	4.6	0.00	4.7	4.6	0.01
40-44	5.6	6.6	-0.04	6.2	6.4	0.00
45-49	8.9	8.1	0.03	8.6	8.5	0.00
50-54	11.4	10.8	0.02	11.2	10.9	0.01
55-59	13.2	12.6	0.02	13.4	12.8	0.02
60-64	13.1	13.2	0.00	12.8	13.0	-0.01
65-69	12.6	12.7	0.00	12.6	12.7	0.00
70-74	10.8	11.6	-0.02	11.2	11.2	0.00
80-84	4.5	4.3	0.01	4.2	4.4	-0.01
85-89	1.6	1.3	0.03	1.3	1.4	-0.01
90-94	0.3	0.2	0.03	0.3	0.2	0.03
Medical history: General						
Acute respiratory disease	9.2	9.1	0.00	9.4	9.3	0.01
Chronic obstructive lung disease	2.3	2.0	0.02	2.2	2.0	0.01
Crohn's disease	<0.1	0.1	-0.03	0.1	0.1	-0.01
Depressive disorder	2.7	3.2	-0.03	3.0	3.1	0.00
Diabetes mellitus	2.2	2.1	0.01	2.1	2.2	-0.01
Gastroesophageal reflux disease	0.5	0.4	0.02	0.4	0.4	0.00
Gastrointestinal hemorrhage	1.0	1.4	-0.04	1.2	1.4	-0.02
Hyperlipidemia	1.2	1.0	0.02	1.2	1.0	0.01
Hypertensive disorder	3.0	3.9	-0.05	3.2	3.6	-0.02
Lesion of liver	0.1	0.1	0.01	0.1	0.1	0.01
Obesity	0.4	0.5	-0.01	0.4	0.5	-0.01
Osteoarthritis	7.6	10.4	-0.10	8.6	8.9	-0.01
Pneumonia	0.8	0.6	0.03	0.9	0.6	0.03
Psoriasis	0.7	1.9	-0.10	1.2	1.5	-0.03
Renal impairment	2.3	1.8	0.03	1.9	2.2	-0.02
Rheumatoid arthritis	61.3	72.3	-0.24	67.4	66.3	0.02
Visual system disorder	7.0	6.9	0.00	6.7	6.9	-0.01
Medical history: Cardiovascular disease						
Atrial fibrillation	0.7	0.7	0.00	0.8	0.7	0.02
Cerebrovascular disease	0.4	0.8	-0.05	0.5	0.7	-0.03
Coronary arteriosclerosis	0.1	0.1	0.00	0.1	0.1	0.00
Heart disease	3.0	3.4	-0.02	3.4	3.1	0.01
Heart failure	0.5	0.7	-0.02	0.7	0.6	0.01
Ischemic heart disease	1.0	1.5	-0.04	1.2	1.3	-0.01
Peripheral vascular disease	0.2	0.2	0.01	0.3	0.2	0.02
Pulmonary embolism	0.2	0.2	-0.01	0.2	0.2	-0.02
Venous thrombosis	0.8	1.0	-0.01	0.9	1.0	0.00
Medical history: Neoplasms						
Malignant neoplastic disease	1.3	1.0	0.02	1.1	1.0	0.01
Malignant tumor of breast	0.1	0.1	0.00	0.1	0.1	-0.01
Medication use						
Agents acting on the renin-angiotensin system	22.0	16.8	0.13	19.4	19.4	0.00
Antibacterials for systemic use	37.3	35.0	0.05	35.7	36.2	-0.01
Antidepressants	26.6	22.6	0.09	25.0	24.9	0.00
Antiepileptics	6.5	4.3	0.10	5.4	5.2	0.01
Antiinflammatory and antirheumatic products	60.5	67.7	-0.15	64.3	63.8	0.01
Antineoplastic agents	51.4	28.6	0.48	39.3	40.8	-0.03
Antipsoratics	0.7	1.3	-0.06	0.9	1.2	-0.02
Antithrombotic agents	17.9	16.7	0.03	17.3	17.2	0.00
Beta blocking agents	14.4	13.5	0.03	14.4	13.9	0.02
Calcium channel blockers	15.5	12.1	0.10	13.4	13.6	0.00
Diuretics	19.0	20.9	-0.05	20.0	20.1	0.00
Drugs for acid related disorders	58.3	51.0	0.15	54.1	54.6	-0.01
Drugs used in diabetes	7.1	5.8	0.05	6.2	6.6	-0.02
Immunosuppressants	55.2	30.0	0.53	42.2	43.0	-0.02
Lipid modifying agents	23.0	17.1	0.15	19.5	19.8	-0.01
Opioids	36.3	41.1	-0.10	39.0	38.9	0.00
Psycholeptics	16.5	16.4	0.00	16.7	16.5	0.00
Psychostimulants, agents used for adhd and nootropics	0.1	0.1	0.01	0.1	0.1	0.01

S6.1.4. DAGermany

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
15-19	0.3	0.5	-0.03	0.3	0.5	-0.03
20-24	1.1	1.3	-0.02	1.1	1.2	-0.01
25-29	1.9	2.4	-0.04	2.0	2.4	-0.03
30-34	2.4	3.5	-0.07	2.9	3.0	-0.01
35-39	4.0	4.1	-0.01	3.9	4.1	-0.01
40-44	5.8	6.6	-0.03	6.1	6.3	-0.01
50-54	12.0	12.7	-0.02	12.7	12.5	0.01
55-59	14.2	14.8	-0.02	14.8	14.9	0.00
60-64	13.2	12.1	0.03	12.3	12.4	0.00
65-69	11.4	10.6	0.03	11.2	10.6	0.02
70-74	10.2	9.5	0.02	9.8	9.7	0.00
75-79	9.1	7.5	0.06	8.2	8.1	0.01
80-84	4.4	3.9	0.02	4.2	4.0	0.01
85-89	1.4	1.0	0.04	1.2	1.0	0.02
90-94	0.2	0.2	0.00	0.2	0.2	0.00
Gender: female	81.4	72.5	0.21	76.0	77.2	-0.03
Medical history: General						
Acute respiratory disease	11.9	12.6	-0.02	12.2	12.0	0.01
Attention deficit hyperactivity disorder	<0.1	0.1	-0.01	<0.1	<0.1	0.02
Chronic liver disease	0.6	0.3	0.05	0.6	0.3	0.05
Chronic obstructive lung disease	3.4	4.0	-0.03	3.4	3.7	-0.02
Crohn's disease	0.2	1.5	-0.14	0.5	1.0	-0.06
Dementia	0.6	0.5	0.01	0.6	0.5	0.01
Depressive disorder	8.3	8.3	0.00	8.2	8.0	0.01
Diabetes mellitus	6.9	7.6	-0.03	7.3	7.1	0.01
Gastroesophageal reflux disease	1.9	2.0	-0.01	1.9	2.0	0.00
Gastrointestinal hemorrhage	0.4	0.6	-0.03	0.5	0.6	-0.02
Hyperlipidemia	7.1	8.4	-0.05	8.0	7.7	0.01
Hypertensive disorder	18.5	19.2	-0.02	19.0	18.3	0.02
Lesion of liver	0.5	0.3	0.03	0.4	0.3	0.02
Obesity	2.2	2.4	-0.01	2.2	2.2	0.00
Osteoarthritis	11.4	13.2	-0.06	12.4	12.1	0.01
Pneumonia	1.9	1.5	0.03	2.0	1.6	0.04
Psoriasis	2.3	4.4	-0.12	3.7	3.5	0.01
Renal impairment	2.6	2.3	0.02	2.4	2.4	0.00
Rheumatoid arthritis	46.4	54.7	-0.17	52.4	50.1	0.04
Schizophrenia	<0.1	0.1	-0.03	<0.1	0.1	-0.01
Ulcerative colitis	0.2	1.6	-0.16	0.4	1.1	-0.08
Urinary tract infectious disease	4.0	4.1	-0.01	4.0	3.9	0.00
Viral hepatitis C	0.3	0.1	0.04	0.3	0.1	0.04
Visual system disorder	5.8	5.6	0.01	5.6	5.5	0.01
Medical history: Cardiovascular disease						
Atrial fibrillation	0.8	0.8	0.00	0.8	0.7	0.00
Cerebrovascular disease	1.4	1.8	-0.03	1.4	1.6	-0.02
Coronary arteriosclerosis	1.0	1.1	-0.01	1.1	1.1	0.00
Heart disease	10.5	11.4	-0.03	10.6	10.6	0.00
Heart failure	2.1	2.6	-0.04	2.0	2.4	-0.03
Ischemic heart disease	4.3	5.2	-0.04	4.7	4.6	0.00
Peripheral vascular disease	1.0	1.0	0.00	0.9	0.9	0.00
Pulmonary embolism	0.6	0.3	0.04	0.6	0.4	0.03
Venous thrombosis	1.3	1.4	-0.02	1.5	1.5	0.00
Medical history: Neoplasms						
Hematologic neoplasm	0.3	0.2	0.03	0.3	0.2	0.02
Malignant lymphoma	0.2	0.2	0.01	0.2	0.1	0.01
Malignant neoplasm of anorectum	0.2	0.2	0.01	0.1	0.1	0.00
Malignant neoplastic disease	3.4	3.2	0.01	3.2	3.2	0.00
Malignant tumor of breast	0.7	0.6	0.01	0.6	0.6	0.00
Malignant tumor of colon	0.3	0.1	0.03	0.3	0.1	0.04
Malignant tumor of lung	<0.1	<0.1	0.02	<0.1	<0.1	0.00
Malignant tumor of urinary bladder	<0.1	0.2	-0.05	<0.1	0.2	-0.05
Primary malignant neoplasm of prostate	0.2	0.3	-0.03	0.2	0.2	-0.02
Medication use						
Agents acting on the renin-angiotensin system	16.7	17.1	-0.01	16.8	16.5	0.01
Antibacterials for systemic use	12.7	14.7	-0.06	13.5	13.7	0.00
Antiepileptics	3.0	2.3	0.04	2.6	2.2	0.02
Antiinflammatory and antirheumatic products	33.3	36.1	-0.06	35.4	34.7	0.01
Antineoplastic agents	31.8	26.8	0.11	29.4	30.4	-0.02
Antipsoriatics	0.2	0.3	-0.01	0.2	0.2	0.00
Antithrombotic agents	10.1	9.9	0.01	9.6	9.4	0.01
Beta blocking agents	13.7	13.3	0.01	13.0	13.1	0.00
Calcium channel blockers	7.6	7.7	0.00	7.6	7.3	0.01
Diuretics	13.9	14.6	-0.02	14.5	13.7	0.02
Drugs for acid related disorders	32.1	32.7	-0.01	32.3	32.5	0.00
Drugs for obstructive airway diseases	7.0	7.7	-0.03	7.4	7.2	0.01

Drugs used in diabetes	4.4	4.8	-0.02	4.7	4.5	0.01
Immunosuppressants	40.7	35.0	0.12	38.9	38.5	0.01
Lipid modifying agents	7.3	9.2	-0.07	8.2	8.2	0.00
Opioids	12.5	12.9	-0.01	12.2	12.3	0.00
Psycholeptics	4.8	6.0	-0.05	4.8	5.3	-0.02
Psychostimulants, agents used for adhd and nootropics	0.2	0.4	-0.03	0.2	0.3	-0.03

S6.1.5. IMRD

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
15-19	0.2	0.2	0.02	0.2	0.2	0.01
20-24	0.8	1.0	-0.03	0.8	1.0	-0.02
25-29	1.2	1.6	-0.03	1.4	1.6	-0.01
30-34	2.8	3.2	-0.02	2.9	3.1	-0.01
35-39	4.8	5.0	-0.01	5.0	4.8	0.01
40-44	6.0	6.1	0.00	6.3	6.0	0.01
45-49	8.7	7.8	0.03	8.4	8.5	0.00
50-54	11.3	10.8	0.02	11.2	11.0	0.01
55-59	13.0	12.4	0.02	12.7	12.4	0.01
60-64	13.2	13.8	-0.02	13.5	13.5	0.00
65-69	13.0	12.8	0.01	12.9	13.0	0.00
70-74	11.0	11.4	-0.01	11.2	11.2	0.00
75-79	7.7	8.3	-0.02	7.8	8.0	0.00
80-84	4.4	4.1	0.02	4.1	4.2	0.00
85-89	1.5	1.3	0.02	1.3	1.4	-0.01
90-94	0.3	0.2	0.02	0.2	0.2	0.00
Gender: female	73.2	68.0	0.11	70.7	71.0	0.00
Race						
race = Asian	0.1	0.1	0.02	0.1	0.1	0.00
race = White	29.8	25.8	0.09	27.4	27.6	0.00
race = Asian Indian	0.7	0.4	0.04	0.6	0.5	0.02
race = Bangladeshi	0.1	<0.1	0.02	<0.1	<0.1	0.02
race = Chinese	0.1	<0.1	0.03	0.1	<0.1	0.03
race = Pakistani	0.3	0.2	0.03	0.3	0.2	0.03
race = Black	0.4	0.2	0.03	0.3	0.2	0.02
race = African	0.2	<0.1	0.05	0.2	<0.1	0.04
race = European	0.1	<0.1	0.02	0.1	<0.1	0.02
Medical history: General						
Acute respiratory disease	9.2	9.3	0.00	9.2	9.1	0.00
Chronic liver disease	0.1	0.1	0.00	<0.1	<0.1	0.00
Chronic obstructive lung disease	2.1	2.5	-0.02	2.2	2.3	-0.01
Crohn's disease	<0.1	0.2	-0.05	<0.1	0.1	-0.04
Dementia	0.2	0.1	0.03	0.1	0.1	0.02
Depressive disorder	2.6	2.9	-0.02	2.9	2.7	0.01
Diabetes mellitus	2.3	2.2	0.01	2.2	2.1	0.01
Gastroesophageal reflux disease	0.3	0.6	-0.03	0.4	0.6	-0.03
Gastrointestinal hemorrhage	0.9	1.3	-0.04	1.0	1.1	-0.01
Hyperlipidemia	1.1	1.3	-0.02	1.1	1.2	0.00
Hypertensive disorder	3.1	3.7	-0.03	3.2	3.3	0.00
Lesion of liver	0.1	0.1	0.01	0.1	<0.1	0.01
Obesity	0.3	0.5	-0.03	0.4	0.6	-0.03
Osteoarthritis	7.5	9.4	-0.07	8.1	8.2	0.00
Pneumonia	0.7	0.6	0.00	0.7	0.7	0.00
Psoriasis	0.8	2.2	-0.12	1.3	1.6	-0.02
Rheumatoid arthritis	61.4	69.3	-0.17	65.6	63.7	0.04
Schizophrenia	<0.1	<0.1	0.01	<0.1	<0.1	0.02
Ulcerative colitis	<0.1	<0.1	-0.01	<0.1	<0.1	-0.01
Urinary tract infectious disease	3.1	2.9	0.01	3.1	3.0	0.01
Visual system disorder	6.6	7.0	-0.02	6.6	6.8	0.00
Medical history: Cardiovascular disease						
Atrial fibrillation	0.7	0.7	0.00	0.7	0.6	0.01
Cerebrovascular disease	0.5	0.7	-0.03	0.5	0.7	-0.02
Coronary arteriosclerosis	0.1	0.1	0.01	0.1	0.1	0.02
Heart disease	2.7	2.9	-0.01	2.8	2.6	0.01
Heart failure	0.4	0.4	-0.01	0.4	0.4	0.01
Ischemic heart disease	0.8	1.2	-0.04	1.0	1.0	0.00
Peripheral vascular disease	0.2	0.2	0.01	0.3	0.2	0.02
Pulmonary embolism	0.2	0.2	-0.01	0.2	0.3	-0.02
Venous thrombosis	0.8	1.1	-0.03	0.8	1.1	-0.02
Medical history: Neoplasms						
Hematologic neoplasm	0.1	0.1	0.01	0.1	<0.1	0.02
Malignant neoplasm of anorectum	<0.1	<0.1	0.02	<0.1	<0.1	0.02
Malignant neoplastic disease	1.3	1.1	0.02	1.2	1.0	0.02
Malignant tumor of breast	0.2	0.2	0.02	0.2	0.2	0.01
Malignant tumor of colon	<0.1	<0.1	-0.01	<0.1	<0.1	0.00
Malignant tumor of lung	0.1	0.1	0.01	0.1	0.1	0.02
Medication use						
Agents acting on the renin-angiotensin system	0.6	0.6	0.00	0.6	0.8	-0.02
Antibacterials for systemic use	3.8	3.4	0.02	3.6	3.5	0.01
Antidepressants	1.1	1.1	-0.01	1.0	1.2	-0.02
Antiepileptics	0.1	0.2	-0.03	0.1	0.2	-0.03
Antiinflammatory and antirheumatic products	1.6	1.9	-0.03	1.6	1.8	-0.01
Antineoplastic agents	1.5	0.6	0.08	1.2	0.9	0.02

Antithrombotic agents	1.1	1.1	0.00	1.2	1.2	0.00
Beta blocking agents	0.4	0.6	-0.02	0.5	0.6	-0.01
Calcium channel blockers	0.6	0.5	0.00	0.6	0.5	0.02
Diuretics	0.8	1.0	-0.02	1.0	0.9	0.01
Drugs for acid related disorders	1.6	1.7	0.00	1.7	1.7	0.01
Drugs for obstructive airway diseases	0.4	0.4	0.00	0.5	0.4	0.00
Drugs used in diabetes	0.2	0.2	0.01	0.2	0.2	0.00
Immunosuppressants	1.6	0.7	0.08	1.3	1.0	0.02
Lipid modifying agents	0.9	0.9	0.00	0.9	1.0	-0.01
Opioids	0.6	0.6	-0.01	0.6	0.6	-0.01
Psycholeptics	0.4	0.5	-0.01	0.4	0.4	-0.01

S6.1.6. IPCI

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
15-19	0.4	<0.9	0.00	0.4	<0.9	0.02
20-24	0.6	1.3	-0.07	0.6	1.0	-0.04
25-29	1.4	3.0	-0.11	1.5	2.7	-0.08
30-34	1.6	4.4	-0.16	1.8	3.7	-0.12
35-39	3.2	4.0	-0.04	3.4	4.0	-0.03
40-44	6.0	4.4	0.08	6.4	3.4	0.14
45-49	8.5	10.4	-0.06	9.0	10.1	-0.04
50-54	10.5	9.7	0.03	11.0	9.1	0.06
55-59	11.2	14.6	-0.10	11.5	14.4	-0.09
60-64	12.2	12.3	0.00	11.7	12.7	-0.03
65-69	11.8	12.9	-0.03	11.9	12.4	-0.02
70-74	12.3	9.8	0.08	12.0	10.6	0.04
75-79	9.0	8.5	0.02	8.8	9.8	-0.04
80-84	7.4	3.2	0.19	6.7	4.3	0.11
85-89	2.8	0.9	0.14	2.7	1.4	0.09
90-94	0.8	<0.9	0.09	0.8	<0.9	0.08
Gender: female	68.4	68.0	0.01	68.6	67.2	0.03
Medical history: General						
Acute respiratory disease	14.1	16.1	-0.06	14.3	16.2	-0.05
Attention deficit hyperactivity disorder	<0.3	<0.9	-0.03	<0.3	<0.9	-0.01
Depressive disorder	4.7	4.2	0.02	4.8	4.5	0.02
Diabetes mellitus	8.6	8.9	-0.01	8.2	9.9	-0.06
Gastroesophageal reflux disease	0.7	<0.9	0.02	0.7	<0.9	0.04
Gastrointestinal hemorrhage	1.1	1.9	-0.07	1.0	1.8	-0.07
Hyperlipidemia	3.4	4.0	-0.03	3.4	4.3	-0.05
Hypertensive disorder	16.3	17.6	-0.04	15.6	17.6	-0.06
Obesity	1.1	1.1	0.00	1.2	1.1	0.01
Osteoarthritis	9.7	6.4	0.12	9.4	6.7	0.10
Pneumonia	4.1	4.5	-0.02	3.9	4.4	-0.02
Psoriasis	1.1	2.8	-0.12	1.2	2.5	-0.09
Renal impairment	2.1	1.5	0.04	2.0	1.4	0.05
Ulcerative colitis	<0.3	0.9	-0.10	<0.3	1.1	-0.12
Urinary tract infectious disease	9.1	7.4	0.06	9.0	7.0	0.08
Visual system disorder	13.3	13.4	0.00	13.4	12.1	0.04
Medical history: Cardiovascular disease						
Atrial fibrillation	2.9	2.3	0.04	2.7	2.3	0.02
Cerebrovascular disease	2.6	3.0	-0.03	2.4	3.4	-0.06
Coronary arteriosclerosis	0.5	<0.9	0.05	0.5	<0.9	0.07
Heart disease	10.2	9.1	0.04	9.7	10.0	-0.01
Heart failure	1.6	1.1	0.04	1.5	1.4	0.01
Ischemic heart disease	4.5	4.4	0.00	4.3	5.0	-0.03
Peripheral vascular disease	3.6	4.4	-0.04	3.7	4.6	-0.05
Pulmonary embolism	0.4	<0.9	-0.02	0.4	<0.9	-0.01
Venous thrombosis	1.4	0.9	0.04	1.4	<0.9	0.07
Medical history: Neoplasms						
Malignant lymphoma	<0.3	<0.9	-0.02	<0.3	<0.9	0.01
Malignant neoplasm of anorectum	0.5	<0.9	-0.04	0.4	<0.9	-0.04
Malignant neoplastic disease	4.5	4.4	0.01	4.5	4.3	0.01
Malignant tumor of breast	1.1	<0.9	0.06	1.2	<0.9	0.10
Malignant tumor of lung	0.5	0.9	-0.06	0.5	1.3	-0.09
Medication use						
Agents acting on the renin-angiotensin system	29.6	23.5	0.14	28.0	26.6	0.03
Antibacterials for systemic use	30.4	29.5	0.02	30.4	29.1	0.03
Antidepressants	12.8	13.6	-0.02	12.8	13.8	-0.03
Antiepileptics	5.0	4.9	0.00	5.0	5.6	-0.03
Antiinflammatory and antirheumatic products	42.7	45.1	-0.05	42.5	42.9	-0.01
Antineoplastic agents	42.5	41.1	0.03	41.2	45.5	-0.09
Antipsoriatics	0.7	<0.9	0.00	0.8	0.9	0.00
Antithrombotic agents	22.2	18.4	0.10	20.5	22.6	-0.05
Beta blocking agents	24.0	21.4	0.06	22.7	24.2	-0.04
Calcium channel blockers	16.0	12.5	0.10	15.2	14.5	0.02
Diuretics	25.3	23.1	0.05	24.0	24.5	-0.01
Drugs for acid related disorders	66.9	67.8	-0.02	66.0	67.6	-0.03
Drugs for obstructive airway diseases	25.4	26.7	-0.03	25.6	26.8	-0.03
Drugs used in diabetes	11.5	11.4	0.00	11.0	13.9	-0.09
Immunosuppressants	44.8	46.8	-0.04	44.0	49.1	-0.10
Lipid modifying agents	29.3	25.0	0.10	27.6	29.5	-0.04
Opioids	20.8	21.2	-0.01	20.6	22.7	-0.05
Psycholeptics	19.5	19.3	0.01	19.4	19.9	-0.01
Psychostimulants, agents used for adhd and nootropics	0.9	1.1	-0.03	0.9	1.7	-0.07

S6.1.7. JMDC

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
15-19	<2.1	<0.2	0.12	<0.8	<0.3	0.04
20-24	4.1	1.1	0.19	1.4	1.2	0.02
25-29	5.4	2.2	0.17	1.8	2.2	-0.03
30-34	9.1	3.8	0.22	3.1	3.8	-0.04
35-39	9.5	7.4	0.08	3.2	7.1	-0.17
40-44	15.4	10.3	0.15	38.4	10.4	0.65
50-54	16.6	16.5	0.00	16.6	16.6	0.00
55-59	13.7	16.0	-0.06	15.6	16.3	-0.02
60-64	4.1	13.4	-0.33	1.4	13.0	-0.46
65-69	3.3	8.4	-0.22	1.1	8.7	-0.35
70-74	<2.1	3.4	-0.22	<0.8	3.6	-0.26
Gender: female	89.6	68.2	0.54	85.5	69.6	0.38
Medical history: General						
Acute respiratory disease	57.3	52.4	0.10	63.6	53.6	0.20
Chronic liver disease	10.8	5.5	0.20	3.7	5.9	-0.10
Chronic obstructive lung disease	<2.1	1.5	0.02	<0.8	1.5	-0.09
Crohn's disease	<2.1	0.5	-0.02	<0.8	0.7	-0.08
Depressive disorder	12.0	8.6	0.11	37.3	9.2	0.66
Diabetes mellitus	39.8	18.5	0.48	13.5	19.8	-0.16
Gastroesophageal reflux disease	<2.1	0.3	0.01	<0.8	0.3	-0.04
Gastrointestinal hemorrhage	5.4	1.3	0.23	12.8	1.4	0.42
Hyperlipidemia	46.5	26.4	0.43	48.9	27.5	0.43
Hypertensive disorder	49.0	23.6	0.55	27.6	24.8	0.06
Lesion of liver	5.8	1.5	0.23	2.0	1.5	0.03
Obesity	<2.1	0.8	-0.05	<0.8	0.9	-0.10
Osteoarthritis	20.3	38.7	-0.41	17.9	38.1	-0.45
Pneumonia	9.5	4.8	0.19	47.4	5.2	1.02
Psoriasis	3.3	5.5	-0.10	1.1	5.6	-0.25
Renal impairment	9.5	1.9	0.34	3.2	2.2	0.06
Rheumatoid arthritis	86.3	99.0	-0.50	95.4	98.9	-0.20
Schizophrenia	3.3	2.3	0.06	1.1	2.5	-0.10
Ulcerative colitis	<2.1	1.5	-0.02	<0.8	1.8	-0.13
Urinary tract infectious disease	4.6	2.5	0.11	34.7	2.8	0.83
Viral hepatitis C	2.5	1.8	0.05	0.8	1.8	-0.08
Visual system disorder	93.4	43.1	1.28	53.6	47.5	0.12
Medical history: Cardiovascular disease						
Cerebrovascular disease	4.1	2.8	0.08	1.4	2.9	-0.10
Coronary arteriosclerosis	<2.1	<0.2	0.05	<0.8	<0.3	-0.02
Heart disease	40.7	12.7	0.67	13.8	13.8	0.00
Heart failure	20.3	5.8	0.44	6.9	6.6	0.01
Ischemic heart disease	22.8	5.1	0.53	7.7	5.7	0.08
Peripheral vascular disease	6.2	2.7	0.17	2.1	2.8	-0.04
Pulmonary embolism	<2.1	0.2	0.12	<0.8	0.4	0.00
Venous thrombosis	9.1	1.6	0.34	3.1	2.0	0.07
Medical history: Neoplasms						
Hematologic neoplasm	<2.1	0.9	0.00	<0.8	0.9	-0.08
Malignant lymphoma	2.5	1.2	0.09	0.8	1.5	-0.06
Malignant neoplastic disease	6.2	6.7	-0.02	2.1	7.1	-0.24
Malignant tumor of breast	<2.1	1.4	-0.06	<0.8	1.5	-0.13
Malignant tumor of colon	<2.1	0.6	-0.03	<0.8	0.6	-0.08
Medication use						
Agents acting on the renin-angiotensin system	26.1	12.7	0.35	8.9	13.5	-0.14
Antibacterials for systemic use	71.4	50.9	0.43	79.3	52.5	0.57
Antidepressants	10.8	7.2	0.13	3.7	7.7	-0.17
Antiepileptics	11.6	10.9	0.02	3.9	11.6	-0.28
Antiiinflammatory and antirheumatic products	39.4	72.9	-0.72	79.5	71.9	0.17
Antineoplastic agents	15.4	28.7	-0.33	16.2	28.5	-0.29
Antipsoriatics	2.1	3.2	-0.07	<0.8	3.4	-0.19
Antithrombotic agents	44.8	12.1	0.78	15.2	13.3	0.05
Beta blocking agents	7.9	3.9	0.17	13.6	4.3	0.31
Calcium channel blockers	19.5	12.4	0.20	17.6	12.8	0.13
Diuretics	9.5	4.0	0.22	3.2	4.3	-0.05
Drugs for acid related disorders	90.0	81.8	0.24	96.6	81.8	0.48
Drugs for obstructive airway diseases	25.7	23.3	0.06	52.9	24.3	0.59
Drugs used in diabetes	8.7	6.6	0.08	3.0	7.1	-0.19
Immunosuppressants	66.8	32.6	0.73	33.6	33.8	0.00
Lipid modifying agents	27.4	14.7	0.32	9.3	15.6	-0.18
Opioids	27.4	23.3	0.09	42.5	24.4	0.37
Psycholeptics	43.2	27.5	0.33	58.8	28.7	0.61
Psychostimulants, agents used for adhd and nootropics	<2.1	0.9	-0.06	<0.8	0.9	-0.11

S6.1.8. MDCD

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
15-19	1.2	1.2	0.00	1.2	1.3	-0.01
20-24	2.1	2.8	-0.04	2.1	3.1	-0.06
25-29	4.4	3.8	0.03	4.3	4.2	0.00
30-34	6.6	6.8	-0.01	6.4	6.9	-0.02
35-39	9.0	8.8	0.01	8.8	8.8	0.00
40-44	10.2	9.3	0.03	10.0	9.1	0.03
45-49	13.3	13.0	0.01	13.2	13.7	-0.01
50-54	15.9	16.1	0.00	16.2	15.9	0.01
55-59	15.8	16.2	-0.01	15.9	15.5	0.01
60-64	12.0	13.9	-0.06	12.3	12.9	-0.02
65-69	4.5	4.0	0.02	4.6	4.2	0.02
70-74	2.0	1.9	0.01	2.0	1.9	0.00
75-79	1.6	1.0	0.06	1.6	1.0	0.05
80-84	1.0	1.0	0.00	1.0	1.0	0.00
85-89	0.4	<0.2	0.04	0.4	0.3	0.01
Gender: female	85.9	79.0	0.18	84.4	84.5	0.00
Race						
race = Black or African American	28.8	24.7	0.09	27.9	26.2	0.04
race = White	54.4	57.4	-0.06	55.1	54.9	0.00
Ethnicity						
ethnicity = Hispanic or Latino	2.3	1.9	0.03	2.4	2.1	0.02
Medical history: General						
Acute respiratory disease	41.8	40.5	0.03	41.5	41.6	0.00
Attention deficit hyperactivity disorder	2.6	2.0	0.04	2.6	2.1	0.03
Chronic liver disease	6.9	7.4	-0.02	6.9	7.4	-0.02
Chronic obstructive lung disease	21.0	21.6	-0.02	21.2	21.5	-0.01
Crohn's disease	0.8	3.5	-0.19	1.0	1.9	-0.08
Dementia	1.2	0.9	0.03	1.1	1.1	0.01
Depressive disorder	36.0	35.4	0.01	35.5	35.8	-0.01
Gastroesophageal reflux disease	29.5	30.8	-0.03	29.5	30.7	-0.03
Gastrointestinal hemorrhage	4.9	6.4	-0.06	5.0	5.9	-0.04
Human immunodeficiency virus infection	0.5	0.7	-0.02	0.5	0.8	-0.03
Hyperlipidemia	36.4	36.7	-0.01	36.4	38.3	-0.04
Hypertensive disorder	55.7	53.0	0.05	55.2	54.6	0.01
Lesion of liver	2.0	1.9	0.01	2.0	2.2	-0.01
Obesity	21.5	20.0	0.04	21.2	20.2	0.02
Osteoarthritis	57.1	57.0	0.00	57.4	57.6	0.00
Pneumonia	8.7	8.0	0.02	8.5	8.0	0.02
Psoriasis	2.0	6.6	-0.23	2.5	3.4	-0.06
Renal impairment	9.4	8.0	0.05	9.2	8.3	0.03
Rheumatoid arthritis	80.9	84.4	-0.09	81.9	83.4	-0.04
Schizophrenia	1.7	2.1	-0.03	1.6	2.3	-0.05
Ulcerative colitis	0.5	1.7	-0.11	0.6	1.2	-0.06
Urinary tract infectious disease	17.8	16.5	0.04	17.4	16.6	0.02
Viral hepatitis C	5.9	6.0	0.00	5.9	6.3	-0.02
Visual system disorder	39.9	40.7	-0.02	40.0	39.9	0.00
Medical history: Cardiovascular disease						
Atrial fibrillation	3.3	2.3	0.06	3.2	3.2	0.00
Cerebrovascular disease	5.3	5.2	0.00	5.1	5.3	-0.01
Coronary arteriosclerosis	9.7	8.7	0.04	9.6	10.1	-0.02
Heart disease	29.7	26.8	0.07	29.0	28.8	0.00
Ischemic heart disease	7.3	7.0	0.01	7.1	8.0	-0.03
Peripheral vascular disease	4.8	4.1	0.03	4.6	4.3	0.02
Pulmonary embolism	2.0	1.0	0.08	1.9	1.6	0.02
Venous thrombosis	3.1	2.5	0.04	2.9	3.2	-0.02
Medical history: Neoplasms						
Hematologic neoplasm	1.5	1.2	0.03	1.5	1.2	0.02
Malignant lymphoma	0.4	0.5	0.00	0.4	0.3	0.01
Malignant neoplasm of anorectum	0.2	0.2	-0.02	0.2	<0.2	0.00
Malignant neoplastic disease	7.2	7.5	-0.01	7.1	7.4	-0.02
Malignant tumor of breast	2.0	1.7	0.02	1.9	1.6	0.02
Malignant tumor of colon	0.3	0.3	0.00	0.4	0.3	0.01
Malignant tumor of lung	0.4	0.3	0.02	0.4	0.3	0.02
Malignant tumor of urinary bladder	0.2	<0.2	0.02	0.2	<0.2	0.04
Primary malignant neoplasm of prostate	0.2	0.2	-0.01	0.2	<0.2	0.01
Medication use						
Agents acting on the renin-angiotensin system	32.6	32.2	0.01	32.5	32.9	-0.01
Antibacterials for systemic use	50.4	48.5	0.04	50.1	47.8	0.04
Antidepressants	53.7	53.0	0.01	53.5	53.0	0.01
Antiepileptics	43.0	41.7	0.02	42.7	42.3	0.01
Antiinflammatory and antirheumatic products	58.2	60.0	-0.04	58.4	59.8	-0.03
Antineoplastic agents	30.7	41.0	-0.22	33.9	32.0	0.04

Antipsoriatics	0.8	0.7	0.01	0.8	0.6	0.03
Antithrombotic agents	18.8	17.0	0.05	18.5	17.9	0.02
Beta blocking agents	24.9	22.9	0.05	24.4	23.3	0.03
Calcium channel blockers	20.0	19.2	0.02	19.7	20.4	-0.02
Diuretics	33.7	32.1	0.04	33.3	32.7	0.02
Drugs for acid related disorders	50.0	51.2	-0.02	50.3	48.0	0.05
Drugs for obstructive airway diseases	46.2	46.9	-0.01	46.2	46.5	-0.01
Drugs used in diabetes	18.5	19.6	-0.03	18.4	19.1	-0.02
Immunosuppressants	39.8	56.0	-0.33	44.4	41.8	0.05
Lipid modifying agents	29.2	30.0	-0.02	29.3	30.9	-0.04
Opioids	62.1	62.6	-0.01	62.0	62.7	-0.01
Psycholeptics	49.8	49.5	0.00	49.3	50.0	-0.01
Psychostimulants, agents used for adhd and nootropics	7.4	6.7	0.02	7.2	6.9	0.01

S6.1.9. MDCR

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
45-49	0.1	<0.1	0.01	0.1	<0.1	0.01
55-59	0.7	1.0	-0.03	0.8	0.8	-0.01
60-64	1.7	2.1	-0.03	1.8	2.0	-0.02
65-69	23.7	26.3	-0.06	24.4	24.4	0.00
70-74	28.1	30.9	-0.06	28.6	28.8	0.00
75-79	22.6	20.6	0.05	22.2	21.9	0.01
80-84	14.6	13.2	0.04	14.3	14.2	0.00
90-94	1.3	1.2	0.02	1.3	1.3	0.00
95-99	0.1	0.1	0.01	0.1	0.1	0.01
Gender: female	72.9	68.6	0.10	71.8	71.5	0.00
Medical history: General						
Acute respiratory disease	27.5	26.4	0.02	27.4	27.2	0.00
Attention deficit hyperactivity disorder	0.2	0.2	0.00	0.2	0.2	0.00
Chronic liver disease	2.1	1.9	0.02	2.1	1.8	0.02
Chronic obstructive lung disease	15.8	16.0	-0.01	15.7	16.0	-0.01
Crohn's disease	0.5	1.3	-0.08	0.6	1.1	-0.05
Dementia	2.0	1.7	0.03	2.0	1.8	0.01
Depressive disorder	9.2	9.2	0.00	9.2	9.2	0.00
Diabetes mellitus	23.1	22.6	0.01	22.9	22.7	0.00
Gastroesophageal reflux disease	16.5	16.6	0.00	16.2	16.5	-0.01
Gastrointestinal hemorrhage	4.8	5.1	-0.01	4.8	4.9	-0.01
Human immunodeficiency virus infection	0.1	<0.1	0.01	0.1	<0.1	0.01
Hyperlipidemia	41.3	39.2	0.04	40.7	41.3	-0.01
Hypertensive disorder	61.8	59.3	0.05	61.1	61.3	0.00
Lesion of liver	1.0	1.0	-0.01	1.0	1.0	-0.01
Obesity	5.6	5.4	0.01	5.5	5.4	0.01
Osteoarthritis	62.0	59.5	0.05	61.2	61.9	-0.01
Pneumonia	9.2	9.2	0.00	9.2	9.1	0.00
Psoriasis	2.3	4.9	-0.14	2.7	3.3	-0.04
Renal impairment	11.3	10.5	0.03	11.1	11.2	0.00
Rheumatoid arthritis	88.4	89.7	-0.04	88.9	89.3	-0.02
Schizophrenia	0.1	<0.1	0.00	0.1	0.1	-0.01
Ulcerative colitis	0.6	2.0	-0.12	0.7	1.2	-0.05
Urinary tract infectious disease	13.6	12.7	0.03	13.5	12.7	0.02
Viral hepatitis C	0.5	0.6	-0.01	0.5	0.5	0.00
Visual system disorder	55.3	55.4	0.00	55.3	55.1	0.00
Medical history: Cardiovascular disease						
Atrial fibrillation	10.6	9.5	0.04	10.4	10.2	0.01
Heart failure	10.1	9.9	0.01	10.0	10.4	-0.01
Ischemic heart disease	10.1	10.1	0.00	10.1	10.4	-0.01
Peripheral vascular disease	6.4	5.5	0.04	6.3	6.0	0.01
Pulmonary embolism	1.5	1.3	0.02	1.5	1.3	0.02
Venous thrombosis	3.4	3.4	0.00	3.3	3.6	-0.01
Medical history: Neoplasms						
Hematologic neoplasm	2.2	2.3	0.00	2.2	2.4	-0.01
Malignant lymphoma	1.3	1.5	-0.02	1.3	1.4	-0.01
Malignant neoplasm of anorectum	0.4	0.4	0.00	0.4	0.4	0.00
Malignant neoplastic disease	18.5	19.8	-0.03	18.7	19.0	-0.01
Malignant tumor of breast	3.8	4.0	-0.01	3.8	3.8	0.00
Malignant tumor of colon	0.8	0.7	0.02	0.9	0.7	0.02
Malignant tumor of lung	0.7	0.6	0.00	0.7	0.5	0.02
Malignant tumor of urinary bladder	1.0	1.1	-0.02	1.0	0.9	0.00
Primary malignant neoplasm of prostate	2.4	2.8	-0.02	2.5	2.4	0.01
Medication use						
Antibacterials for systemic use	46.3	49.0	-0.05	47.0	46.3	0.01
Antidepressants	31.5	31.4	0.00	31.7	31.3	0.01
Antiepileptics	20.1	21.8	-0.04	20.3	20.6	-0.01
Antiinflammatory and antirheumatic products	44.0	44.4	-0.01	44.1	44.8	-0.02
Antineoplastic agents	32.1	40.3	-0.17	34.8	33.3	0.03
Antipsoriatics	1.0	1.4	-0.03	1.0	1.3	-0.02
Antithrombotic agents	22.8	22.1	0.02	22.6	22.5	0.00
Beta blocking agents	39.4	39.3	0.00	39.3	39.2	0.00
Calcium channel blockers	30.0	28.6	0.03	29.6	30.3	-0.02
Diuretics	47.1	45.2	0.04	46.7	46.2	0.01
Drugs for acid related disorders	44.6	45.6	-0.02	44.7	45.1	-0.01
Drugs for obstructive airway diseases	33.2	32.4	0.02	33.2	32.8	0.01
Drugs used in diabetes	17.4	16.9	0.01	17.3	16.9	0.01
Immunosuppressants	41.2	54.9	-0.28	45.5	42.8	0.05
Lipid modifying agents	49.8	48.5	0.03	49.5	49.4	0.00
Opioids	43.6	44.0	-0.01	43.8	43.2	0.01
Psycholeptics	34.6	34.1	0.01	34.5	33.6	0.02
Psychostimulants, agents used for adhd and nootropics	2.0	2.0	0.00	2.0	1.9	0.01

S6.1.10. OpenClaims

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
15-19	0.3	0.3	-0.01	0.3	0.3	0.00
20-24	1.2	1.2	-0.01	1.2	1.2	0.00
25-29	1.9	1.9	0.00	1.9	1.8	0.00
30-34	3.0	2.9	0.00	2.9	2.9	0.00
35-39	4.3	4.4	-0.01	4.3	4.3	0.00
40-44	5.8	5.9	0.00	5.8	5.7	0.00
45-49	8.3	8.3	0.00	8.2	8.1	0.00
50-54	11.5	11.9	-0.01	11.5	11.5	0.00
55-59	13.6	14.2	-0.02	13.7	13.8	0.00
60-64	13.4	13.8	-0.01	13.6	13.5	0.00
70-74	9.9	9.6	0.01	9.9	10.0	0.00
75-79	10.7	9.0	0.06	10.3	10.6	-0.01
80-84	3.7	3.5	0.01	3.6	3.6	0.00
85-89	0.2	0.2	0.00	0.2	0.2	0.00
Gender: female	81.0	73.5	0.18	79.3	79.1	0.00
Medical history: General						
Acute respiratory disease	20.1	19.2	0.02	19.9	19.9	0.00
Chronic liver disease	2.1	2.0	0.00	2.0	2.1	0.00
Chronic obstructive lung disease	7.6	7.7	0.00	7.6	7.8	0.00
Crohn's disease	0.4	1.6	-0.11	0.5	0.9	-0.04
Dementia	0.8	0.7	0.01	0.8	0.8	0.00
Depressive disorder	9.7	9.6	0.00	9.6	9.8	-0.01
Diabetes mellitus	15.6	16.1	-0.01	15.7	16.0	-0.01
Gastrointestinal hemorrhage	2.4	2.5	-0.01	2.4	2.4	0.00
Hyperlipidemia	26.0	25.8	0.01	26.0	26.4	-0.01
Hypertensive disorder	35.0	34.5	0.01	34.9	35.2	-0.01
Lesion of liver	0.8	0.7	0.01	0.8	0.8	0.00
Obesity	6.3	6.6	-0.01	6.4	6.5	0.00
Osteoarthritis	36.0	37.0	-0.02	36.1	36.8	-0.02
Psoriasis	1.9	5.4	-0.19	2.2	3.3	-0.06
Renal impairment	6.2	5.5	0.03	6.1	6.0	0.00
Rheumatoid arthritis	69.0	69.6	-0.01	69.3	69.8	-0.01
Schizophrenia	0.2	0.2	0.00	0.2	0.2	0.00
Ulcerative colitis	0.4	1.7	-0.12	0.5	1.0	-0.06
Viral hepatitis C	1.1	1.1	0.00	1.1	1.1	0.00
Visual system disorder	21.9	20.7	0.03	21.6	21.6	0.00
Medical history: Cardiovascular disease						
Atrial fibrillation	3.6	3.4	0.01	3.6	3.6	0.00
Cerebrovascular disease	3.4	2.8	0.03	3.2	3.3	0.00
Coronary arteriosclerosis	6.8	6.8	0.00	6.8	6.9	0.00
Heart disease	18.3	17.3	0.03	18.1	18.3	0.00
Heart failure	4.0	3.7	0.02	3.9	4.0	0.00
Ischemic heart disease	3.5	3.4	0.01	3.5	3.6	0.00
Peripheral vascular disease	9.7	9.1	0.02	9.6	9.6	0.00
Venous thrombosis	1.5	1.4	0.01	1.5	1.5	0.00
Medical history: Neoplasms						
Hematologic neoplasm	0.9	0.9	0.00	0.9	1.0	0.00
Malignant neoplasm of anorectum	0.1	0.1	0.00	0.1	0.1	0.00
Malignant neoplastic disease	7.2	7.2	0.00	7.2	7.3	0.00
Malignant tumor of breast	1.8	1.6	0.01	1.7	1.7	0.00
Malignant tumor of lung	0.3	0.3	0.00	0.3	0.3	0.00
Malignant tumor of urinary bladder	0.2	0.3	-0.01	0.3	0.3	0.00
Medication use						
Agents acting on the renin-angiotensin system	30.8	33.0	-0.05	31.4	31.4	0.00
Antibacterials for systemic use	36.1	38.8	-0.06	36.8	36.6	0.00
Antidepressants	34.5	35.7	-0.03	34.7	34.8	0.00
Antiepileptics	24.0	26.4	-0.05	24.5	24.6	0.00
Antiinflammatory and antirheumatic products	41.0	45.2	-0.08	42.0	41.9	0.00
Antineoplastic agents	31.6	38.0	-0.14	33.3	33.4	0.00
Antipsoratics	0.7	1.0	-0.03	0.8	0.9	-0.01
Beta blocking agents	23.1	24.1	-0.02	23.3	23.5	0.00
Drugs used in diabetes	14.0	15.4	-0.04	14.3	14.6	-0.01
Immunosuppressants	41.9	53.4	-0.23	44.7	44.7	0.00
Lipid modifying agents	29.0	31.5	-0.05	29.6	29.8	0.00
Opioids	34.8	37.8	-0.06	35.4	35.5	0.00
Psycholeptics	29.5	30.8	-0.03	29.7	29.9	0.00
Psychostimulants, agents used for adhd and nootropics	4.5	4.8	-0.01	4.5	4.6	0.00

S6.1.11. Optum

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
15-19	0.3	0.4	-0.01	0.3	0.4	-0.02
20-24	1.1	1.1	-0.01	1.1	1.1	-0.01
25-29	1.8	2.0	-0.01	1.8	1.8	0.00
30-34	3.4	3.2	0.01	3.3	3.3	0.00
35-39	4.9	5.2	-0.02	4.9	4.8	0.00
40-44	6.8	6.7	0.01	6.8	6.5	0.01
45-49	8.9	9.1	0.00	8.9	8.9	0.00
50-54	11.6	11.6	0.00	11.6	11.7	0.00
55-59	12.5	13.3	-0.02	12.7	12.8	0.00
60-64	11.6	12.6	-0.03	11.9	11.9	0.00
65-69	11.3	12.2	-0.03	11.6	11.7	0.00
70-74	10.8	10.6	0.01	10.9	10.6	0.01
75-79	7.9	6.9	0.04	7.7	7.7	0.00
80-84	5.0	3.8	0.06	4.7	4.9	-0.01
85-89	1.9	1.3	0.05	1.8	1.7	0.01
Gender: female	79.6	71.9	0.18	77.6	77.6	0.00
Medical history: General						
Acute respiratory disease	34.7	33.2	0.03	34.2	34.2	0.00
Attention deficit hyperactivity disorder	1.2	1.1	0.00	1.2	1.1	0.00
Chronic liver disease	3.7	3.8	-0.01	3.7	3.9	-0.01
Chronic obstructive lung disease	11.2	10.9	0.01	11.1	11.2	0.00
Crohn's disease	0.7	2.4	-0.14	0.9	1.4	-0.05
Dementia	1.3	1.2	0.01	1.2	1.5	-0.02
Depressive disorder	18.5	18.1	0.01	18.4	18.2	0.00
Diabetes mellitus	20.9	20.2	0.02	20.7	21.1	-0.01
Gastroesophageal reflux disease	21.6	21.1	0.01	21.5	21.8	-0.01
Gastrointestinal hemorrhage	4.0	4.5	-0.02	4.0	4.1	0.00
Human immunodeficiency virus infection	0.2	0.2	-0.01	0.2	0.2	-0.01
Hyperlipidemia	46.8	45.3	0.03	46.4	47.1	-0.01
Hypertensive disorder	51.4	51.0	0.01	51.2	51.9	-0.01
Lesion of liver	1.3	1.2	0.00	1.3	1.3	0.00
Obesity	12.2	12.5	-0.01	12.2	12.2	0.00
Osteoarthritis	56.4	55.4	0.02	56.1	56.7	-0.01
Pneumonia	6.5	5.8	0.03	6.3	6.4	0.00
Psoriasis	3.2	8.0	-0.21	3.9	4.9	-0.05
Renal impairment	9.9	9.2	0.03	9.7	9.9	0.00
Rheumatoid arthritis	84.3	85.5	-0.04	84.8	85.2	-0.01
Schizophrenia	0.2	0.1	0.01	0.2	0.1	0.01
Ulcerative colitis	0.7	2.2	-0.13	0.9	1.3	-0.04
Viral hepatitis C	1.5	1.7	-0.02	1.5	1.7	-0.02
Visual system disorder	40.3	39.7	0.01	40.0	39.8	0.00
Medical history: Cardiovascular disease						
Atrial fibrillation	5.1	4.1	0.04	4.8	4.8	0.00
Cerebrovascular disease	6.3	5.5	0.03	6.1	6.0	0.00
Coronary arteriosclerosis	10.8	10.5	0.01	10.7	11.0	-0.01
Heart disease	27.8	26.1	0.04	27.3	27.9	-0.01
Heart failure	6.3	5.8	0.02	6.1	6.4	-0.01
Ischemic heart disease	6.5	6.4	0.01	6.5	6.6	-0.01
Peripheral vascular disease	4.7	4.3	0.02	4.7	4.6	0.00
Pulmonary embolism	1.2	0.9	0.03	1.2	1.1	0.01
Venous thrombosis	2.3	2.1	0.02	2.2	2.4	-0.01
Medical history: Neoplasms						
Hematologic neoplasm	1.4	1.2	0.02	1.4	1.3	0.01
Malignant lymphoma	0.7	0.8	-0.01	0.7	0.8	-0.01
Malignant neoplasm of anorectum	0.2	0.3	-0.02	0.2	0.2	-0.02
Malignant neoplastic disease	10.4	10.4	0.00	10.4	10.6	-0.01
Malignant tumor of breast	2.5	2.0	0.04	2.4	2.4	0.00
Malignant tumor of colon	0.4	0.5	-0.01	0.4	0.5	-0.01
Malignant tumor of lung	0.4	0.4	0.01	0.4	0.4	0.01
Malignant tumor of urinary bladder	0.3	0.4	-0.01	0.3	0.3	0.00
Primary malignant neoplasm of prostate	1.0	1.2	-0.02	1.0	1.0	0.00
Medication use						
Agents acting on the renin-angiotensin system	32.3	32.6	-0.01	32.4	32.7	-0.01
Antibacterials for systemic use	41.2	41.9	-0.01	41.3	41.1	0.00
Antidepressants	35.1	35.2	0.00	35.0	34.9	0.00
Antiinflammatory and antirheumatic products	47.9	50.1	-0.04	48.5	49.0	-0.01
Antineoplastic agents	29.8	38.5	-0.18	32.6	32.2	0.01
Antipsoratics	0.9	1.1	-0.03	0.9	0.9	0.00
Antithrombotic agents	11.8	10.6	0.04	11.5	11.4	0.00
Beta blocking agents	23.2	22.4	0.02	23.1	23.2	0.00
Calcium channel blockers	17.8	16.6	0.03	17.6	17.8	0.00
Diuretics	30.3	29.0	0.03	30.0	30.7	-0.02
Drugs for acid related disorders	33.7	34.4	-0.02	33.8	34.4	-0.01
Drugs for obstructive airway diseases	29.4	28.9	0.01	29.2	29.5	0.00

Drugs used in diabetes	14.1	14.1	0.00	14.1	14.5	-0.01
Immunosuppressants	38.7	53.1	-0.29	43.0	42.2	0.02
Lipid modifying agents	31.9	32.1	0.00	32.0	32.6	-0.01
Opioids	38.4	40.2	-0.04	38.8	38.9	0.00
Psycholeptics	30.4	29.3	0.02	30.1	29.9	0.00
Psychostimulants, agents used for adhd and nootropics	4.0	3.7	0.02	4.0	3.7	0.01

S6.1.12. PanTher

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
15-19	0.2	0.3	-0.02	0.2	0.3	-0.01
20-24	1.0	1.0	0.00	1.0	1.0	0.00
25-29	1.8	1.9	-0.01	1.8	1.9	-0.01
30-34	3.1	3.0	0.00	3.1	3.0	0.00
35-39	4.2	4.6	-0.02	4.2	4.2	0.00
40-44	5.9	5.8	0.01	5.9	5.6	0.01
45-49	7.9	8.2	-0.01	7.9	7.9	0.00
50-54	11.5	11.9	-0.01	11.6	11.5	0.00
55-59	13.8	14.7	-0.03	14.0	14.3	-0.01
60-64	13.3	13.9	-0.02	13.5	13.4	0.00
65-69	12.1	12.7	-0.02	12.3	12.6	-0.01
70-74	10.1	9.6	0.02	10.0	9.9	0.00
75-79	8.1	6.9	0.04	7.8	7.9	0.00
80-84	5.5	4.2	0.06	5.2	5.3	-0.01
85-89	1.6	1.2	0.03	1.5	1.4	0.00
Gender: female	80.1	72.4	0.18	78.2	78.6	-0.01
Race						
race = Asian	1.5	1.1	0.04	1.5	1.4	0.01
race = Black or African American	10.1	8.4	0.06	9.7	9.6	0.00
race = White	81.4	83.3	-0.05	81.8	81.9	0.00
Ethnicity						
ethnicity = Hispanic or Latino	5.3	6.1	-0.04	5.4	5.4	0.00
Medical history: General						
Acute respiratory disease	17.9	18.3	-0.01	17.9	18.1	0.00
Attention deficit hyperactivity disorder	1.0	0.8	0.01	0.9	0.8	0.01
Chronic liver disease	2.7	3.0	-0.02	2.8	2.9	-0.01
Chronic obstructive lung disease	8.5	9.2	-0.03	8.6	8.9	-0.01
Crohn's disease	0.5	1.6	-0.12	0.6	0.9	-0.04
Dementia	1.1	0.9	0.02	1.0	1.1	-0.01
Depressive disorder	15.7	15.4	0.01	15.6	15.7	0.00
Diabetes mellitus	14.9	15.0	0.00	15.0	15.3	-0.01
Gastroesophageal reflux disease	18.4	18.1	0.01	18.3	18.1	0.00
Gastrointestinal hemorrhage	2.1	2.4	-0.02	2.1	2.2	0.00
Human immunodeficiency virus infection	0.1	0.2	-0.01	0.1	0.2	-0.01
Hyperlipidemia	30.4	31.1	-0.02	30.5	30.6	0.00
Hypertensive disorder	38.9	38.6	0.01	38.8	39.2	-0.01
Lesion of liver	1.1	0.9	0.02	1.0	1.0	0.01
Obesity	11.3	12.1	-0.03	11.4	11.6	-0.01
Osteoarthritis	35.1	36.2	-0.02	35.3	35.7	-0.01
Pneumonia	5.0	5.1	0.00	5.0	5.0	0.00
Psoriasis	1.7	4.4	-0.16	2.1	2.7	-0.04
Renal impairment	7.7	6.7	0.04	7.4	7.7	-0.01
Rheumatoid arthritis	84.8	84.7	0.00	84.9	85.5	-0.02
Ulcerative colitis	0.4	1.5	-0.11	0.5	0.8	-0.04
Urinary tract infectious disease	7.6	6.3	0.05	7.2	7.1	0.00
Viral hepatitis C	1.2	1.5	-0.02	1.3	1.4	-0.01
Visual system disorder	13.8	13.6	0.00	13.7	13.4	0.01
Medical history: Cardiovascular disease						
Coronary arteriosclerosis	8.3	8.5	0.00	8.3	8.5	-0.01
Heart disease	20.9	20.2	0.02	20.7	21.1	-0.01
Heart failure	4.7	4.4	0.02	4.7	4.9	-0.01
Ischemic heart disease	4.4	4.5	0.00	4.4	4.5	0.00
Peripheral vascular disease	2.6	2.4	0.01	2.6	2.5	0.00
Pulmonary embolism	1.0	1.0	0.00	1.0	1.0	-0.01
Venous thrombosis	1.9	2.0	-0.01	1.9	2.0	-0.01
Medical history: Neoplasms						
Hematologic neoplasm	1.1	1.2	-0.01	1.1	1.2	-0.01
Malignant lymphoma	0.6	0.7	-0.01	0.6	0.7	0.00
Malignant neoplasm of anorectum	0.2	0.2	0.01	0.2	0.2	0.01
Malignant neoplastic disease	8.5	8.8	-0.01	8.5	8.8	-0.01
Malignant tumor of breast	1.9	1.7	0.02	1.9	1.9	0.00
Malignant tumor of colon	0.4	0.3	0.00	0.4	0.4	0.00
Malignant tumor of lung	0.4	0.4	-0.01	0.4	0.4	-0.01
Malignant tumor of urinary bladder	0.2	0.4	-0.03	0.2	0.3	-0.02
Primary malignant neoplasm of prostate	0.6	0.8	-0.03	0.7	0.7	0.00
Medication use						
Agents acting on the renin-angiotensin system	30.6	31.6	-0.02	30.8	31.3	-0.01
Antibacterials for systemic use	28.1	29.8	-0.04	28.3	28.2	0.00
Antidepressants	36.0	35.6	0.01	35.8	36.3	-0.01
Antiepileptics	24.0	24.8	-0.02	24.2	24.4	-0.01
Antiinflammatory and antirheumatic products	43.7	47.2	-0.07	44.5	44.6	0.00
Antineoplastic agents	34.4	38.1	-0.08	35.4	36.4	-0.02

Antipsoriatics	0.6	0.7	-0.01	0.6	0.6	0.00
Antithrombotic agents	33.0	31.7	0.03	32.6	33.2	-0.01
Beta blocking agents	26.7	27.0	-0.01	26.8	27.2	-0.01
Calcium channel blockers	17.2	16.7	0.01	17.1	17.5	-0.01
Diuretics	29.2	28.3	0.02	29.1	29.4	-0.01
Drugs for acid related disorders	45.1	45.5	-0.01	45.1	45.4	0.00
Drugs for obstructive airway diseases	34.5	35.2	-0.02	34.6	35.0	-0.01
Drugs used in diabetes	15.1	15.7	-0.02	15.3	15.8	-0.01
Immunosuppressants	47.1	56.1	-0.18	49.2	50.2	-0.02
Lipid modifying agents	30.2	31.7	-0.03	30.6	31.0	-0.01
Opioids	39.3	41.1	-0.04	39.6	40.3	-0.01
Psycholeptics	35.2	35.0	0.00	35.1	35.5	-0.01
Psychostimulants, agents used for adhd and nootropics	4.3	4.0	0.01	4.2	4.1	0.01

S6.1.13. SIDIAP

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
20-24	0.6	<1.3	-0.02	0.6	<1.0	-0.02
25-29	2.2	2.9	-0.05	2.0	4.6	-0.15
30-34	4.4	4.7	-0.02	4.6	4.3	0.01
35-39	7.1	9.7	-0.09	7.2	13.3	-0.20
40-44	8.0	6.8	0.05	8.3	5.6	0.11
45-49	7.5	9.4	-0.07	7.4	7.3	0.00
50-54	10.1	12.3	-0.07	10.5	7.7	0.10
55-59	11.5	9.4	0.07	11.5	9.5	0.06
60-64	11.2	10.8	0.02	10.9	11.1	-0.01
65-69	10.8	10.2	0.02	11.1	8.7	0.08
70-74	9.9	6.8	0.11	9.6	9.6	0.00
75-79	7.5	9.4	-0.07	7.6	9.1	-0.05
80-84	6.2	5.8	0.02	6.0	8.0	-0.08
85-89	2.0	<1.3	0.13	2.0	<1.0	0.16
90-94	0.6	<1.3	0.06	0.6	<1.0	0.06
Gender: female	79.2	66.7	0.29	75.9	79.8	-0.09
Medical history: General						
Acute respiratory disease	17.9	17.3	0.02	17.4	26.6	-0.22
Chronic liver disease	1.0	<1.3	-0.01	1.0	<1.0	0.04
Chronic obstructive lung disease	2.6	2.6	0.00	2.4	1.7	0.05
Depressive disorder	3.0	4.7	-0.09	3.1	9.0	-0.25
Diabetes mellitus	2.9	3.1	-0.02	2.8	2.3	0.03
Gastroesophageal reflux disease	1.0	1.3	-0.02	1.1	1.5	-0.04
Gastrointestinal hemorrhage	2.7	3.7	-0.05	2.9	3.6	-0.04
Hyperlipidemia	4.3	3.4	0.04	4.0	7.8	-0.16
Hypertensive disorder	5.3	6.6	-0.05	5.7	7.9	-0.09
Obesity	4.8	4.2	0.03	4.6	3.3	0.07
Osteoarthritis	3.0	3.1	-0.01	3.2	4.9	-0.09
Pneumonia	2.0	2.4	-0.02	2.2	7.3	-0.24
Psoriasis	0.7	2.1	-0.12	0.6	2.0	-0.12
Renal impairment	1.8	2.4	-0.04	2.0	2.1	-0.01
Rheumatoid arthritis	35.6	26.5	0.20	33.2	42.3	-0.19
Urinary tract infectious disease	7.5	5.8	0.07	7.4	6.0	0.06
Viral hepatitis C	0.9	<1.3	0.04	0.9	<1.0	0.07
Visual system disorder	16.0	17.3	-0.03	15.6	19.5	-0.10
Medical history: Cardiovascular disease						
Atrial fibrillation	0.6	1.3	-0.08	0.5	4.1	-0.24
Cerebrovascular disease	2.2	<1.3	0.09	2.2	<1.0	0.13
Heart disease	7.2	6.8	0.02	7.0	9.2	-0.08
Heart failure	1.1	<1.3	0.01	1.1	3.3	-0.15
Ischemic heart disease	1.6	<1.3	0.10	1.5	<1.0	0.13
Peripheral vascular disease	3.6	2.4	0.07	3.8	1.7	0.13
Pulmonary embolism	0.4	<1.3	0.02	0.4	<1.0	0.04
Medical history: Neoplasms						
Hematologic neoplasm	<0.4	<1.3	-0.08	<0.4	<1.0	-0.06
Malignant neoplastic disease	3.0	3.4	-0.02	3.0	2.4	0.04
Malignant tumor of breast	0.4	<1.3	-0.02	<0.4	<1.0	-0.02
Malignant tumor of colon	<0.4	<1.3	0.01	<0.4	<1.0	0.04
Malignant tumor of lung	<0.4	<1.3	-0.04	<0.4	<1.0	-0.03
Malignant tumor of urinary bladder	<0.4	<1.3	-0.05	<0.4	<1.0	-0.02
Medication use						
Agents acting on the renin-angiotensin system	26.2	30.7	-0.10	27.2	27.0	0.00
Antibacterials for systemic use	17.4	17.8	-0.01	17.1	19.2	-0.05
Antidepressants	21.9	22.8	-0.02	21.9	27.7	-0.13
Antiepileptics	9.9	11.8	-0.06	9.9	11.9	-0.06
Antiinflammatory and antirheumatic products	70.0	71.7	-0.04	69.8	68.2	0.03
Antineoplastic agents	21.3	21.0	0.01	21.3	20.6	0.02
Antipsoriatics	1.3	1.6	-0.02	1.4	<1.0	0.04
Antithrombotic agents	17.4	16.3	0.03	17.3	15.6	0.05
Beta blocking agents	11.2	10.5	0.02	11.5	10.1	0.04
Calcium channel blockers	10.3	6.0	0.16	9.8	9.7	0.00
Diuretics	22.9	21.8	0.03	22.6	19.2	0.08
Drugs for acid related disorders	77.9	83.5	-0.14	78.8	78.0	0.02
Drugs for obstructive airway diseases	24.7	25.5	-0.02	24.2	21.1	0.07
Drugs used in diabetes	10.5	10.8	-0.01	10.6	9.2	0.05
Immunosuppressants	32.6	36.2	-0.08	33.1	30.3	0.06
Lipid modifying agents	25.3	21.5	0.09	24.5	23.3	0.03
Opioids	22.6	23.4	-0.02	22.9	23.5	-0.01
Psycholeptics	36.3	40.7	-0.09	37.1	44.2	-0.14
Psychostimulants, agents used for adhd and nootropics	1.3	3.1	-0.13	1.3	2.0	-0.05

S6.1.14. VA

Characteristic	Before stratification			After stratification		
	HCQ	SSZ	Std. diff	HCQ	SSZ	Std. diff
Age group						
20-24	0.1	0.1	0.00	0.1	0.2	-0.02
25-29	0.6	0.6	0.00	0.6	0.6	-0.01
30-34	1.2	1.0	0.02	1.1	1.1	0.00
35-39	1.6	1.7	0.00	1.5	1.7	-0.02
40-44	2.7	3.0	-0.02	2.7	2.8	-0.01
45-49	5.1	5.1	0.00	5.1	5.0	0.00
50-54	8.4	9.7	-0.05	8.8	8.7	0.00
55-59	12.8	14.5	-0.05	13.4	13.1	0.01
60-64	17.1	17.8	-0.02	17.3	17.6	-0.01
65-69	16.9	17.0	0.00	17.1	17.0	0.00
70-74	13.8	13.7	0.00	13.9	13.7	0.00
75-79	10.0	9.1	0.03	9.8	9.7	0.00
80-84	6.5	4.7	0.08	5.9	6.2	-0.01
85-89	2.5	1.6	0.06	2.2	2.2	0.00
90-94	0.5	0.3	0.03	0.5	0.3	0.03
Gender: female	14.5	10.4	0.13	13.2	13.1	0.00
Race						
race = Asian	0.5	0.4	0.00	0.5	0.4	0.01
race = Black or African American	14.4	12.9	0.04	13.9	13.6	0.01
race = White	73.6	74.6	-0.02	73.9	74.1	0.00
race = Unknown	9.9	10.4	-0.02	10.1	10.2	0.00
race = Native Hawaiian or Other Pacific Islander	0.7	0.8	-0.01	0.7	0.8	-0.02
race = American Indian or Alaska Native	0.9	0.9	0.00	0.9	0.8	0.01
Ethnicity						
ethnicity = Hispanic or Latino	4.8	4.9	0.00	4.9	4.7	0.00
ethnicity = Not Hispanic or Latino	89.3	88.6	0.02	89.0	89.1	0.00
Medical history: General						
Acute respiratory disease	11.4	12.3	-0.03	11.8	11.3	0.02
Attention deficit hyperactivity disorder	0.4	0.4	0.00	0.4	0.5	-0.01
Chronic liver disease	3.4	3.4	0.00	3.5	3.6	0.00
Crohn's disease	0.3	0.9	-0.07	0.4	0.6	-0.02
Dementia	1.2	1.0	0.02	1.1	1.1	0.00
Depressive disorder	21.9	21.6	0.01	21.8	21.6	0.00
Diabetes mellitus	24.5	23.8	0.02	24.1	24.1	0.00
Gastroesophageal reflux disease	5.8	5.4	0.01	5.6	5.5	0.01
Gastrointestinal hemorrhage	2.1	2.8	-0.04	2.3	2.3	0.00
Human immunodeficiency virus infection	0.2	0.2	0.00	0.2	0.2	0.00
Hypertensive disorder	58.1	57.6	0.01	58.0	58.0	0.00
Lesion of liver	1.4	1.4	0.00	1.4	1.4	0.01
Obesity	14.3	14.3	0.00	14.2	14.3	0.00
Psoriasis	2.2	7.0	-0.23	3.2	4.1	-0.05
Renal impairment	7.2	6.6	0.02	7.0	7.1	0.00
Rheumatoid arthritis	90.4	89.6	0.02	90.5	90.2	0.01
Schizophrenia	0.6	0.7	-0.01	0.6	0.6	0.01
Ulcerative colitis	0.4	1.0	-0.06	0.5	0.7	-0.02
Urinary tract infectious disease	3.5	3.1	0.02	3.4	3.1	0.02
Viral hepatitis C	3.7	3.7	0.00	3.7	3.8	0.00
Visual system disorder	38.5	41.9	-0.07	39.5	38.7	0.02
Medical history: Cardiovascular disease						
Atrial fibrillation	6.1	5.4	0.03	5.9	5.8	0.00
Cerebrovascular disease	4.3	4.0	0.02	4.3	4.3	0.00
Coronary arteriosclerosis	14.7	15.1	-0.01	14.8	15.2	-0.01
Heart disease	30.5	30.4	0.00	30.6	31.1	-0.01
Heart failure	5.9	6.1	-0.01	5.9	6.1	-0.01
Ischemic heart disease	11.0	11.2	0.00	11.1	11.1	0.00
Pulmonary embolism	0.7	0.8	0.00	0.7	0.8	-0.01
Venous thrombosis	1.4	1.3	0.01	1.4	1.3	0.01
Medical history: Neoplasms						
Hematologic neoplasm	1.1	1.0	0.02	1.1	1.0	0.01
Malignant lymphoma	0.8	0.6	0.01	0.8	0.6	0.02
Malignant neoplasm of anorectum	0.1	0.1	0.00	0.2	0.1	0.01
Malignant tumor of breast	0.4	0.2	0.02	0.3	0.3	0.01
Malignant tumor of colon	0.6	0.6	0.00	0.6	0.6	0.00
Malignant tumor of lung	0.3	0.4	-0.01	0.4	0.4	0.00
Malignant tumor of urinary bladder	0.8	0.8	-0.01	0.7	0.9	-0.01
Medication use						
Agents acting on the renin-angiotensin system	38.5	39.2	-0.01	38.8	39.0	0.00
Antibacterials for systemic use	22.8	25.3	-0.06	23.8	23.2	0.01
Antidepressants	35.0	36.1	-0.02	35.3	34.8	0.01
Antiepileptics	21.3	20.9	0.01	21.1	21.0	0.00
Antiinflammatory and antirheumatic products	47.8	52.1	-0.09	49.2	47.8	0.03
Antineoplastic agents	36.8	41.7	-0.10	38.8	38.2	0.01

Antipsoriatics	1.0	2.0	-0.09	1.1	1.5	-0.03
Antithrombotic agents	28.6	28.9	-0.01	28.8	28.6	0.01
Beta blocking agents	32.0	32.2	0.00	32.0	32.1	0.00
Calcium channel blockers	21.8	21.8	0.00	21.9	22.3	-0.01
Diuretics	32.8	33.5	-0.02	33.1	33.2	0.00
Drugs for acid related disorders	52.3	55.9	-0.07	53.5	52.8	0.01
Drugs for obstructive airway diseases	27.8	28.9	-0.02	28.2	28.0	0.00
Drugs used in diabetes	19.7	19.4	0.01	19.4	19.6	0.00
Immunosuppressants	44.0	51.9	-0.16	47.0	46.3	0.01
Lipid modifying agents	45.7	45.1	0.01	45.5	45.6	0.00
Opioids	31.0	34.1	-0.06	32.0	31.5	0.01
Psycholeptics	23.7	24.8	-0.03	24.0	24.0	0.00
Psychostimulants, agents used for adhd and nootropics	1.8	1.6	0.02	1.8	1.6	0.01

S6.2. AZM vs AMX

S6.2.1. AmbEMR

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff	AZM	AMX	Std. diff
				%	%	
Age group						
20-24	0.8	0.7	0.01	0.8	0.7	0.01
25-29	1.2	1.3	-0.01	1.3	1.2	0.00
30-34	2.5	2.3	0.02	2.6	2.3	0.02
35-39	3.5	3.9	-0.02	3.7	3.7	0.00
40-44	5.8	5.1	0.03	5.8	5.4	0.02
45-49	7.5	7.3	0.01	7.7	7.3	0.01
50-54	10.1	10.4	-0.01	10.1	10.5	-0.01
55-59	13.4	13.7	-0.01	13.5	14.0	-0.01
60-64	14.1	14.4	-0.01	13.9	14.2	-0.01
65-69	13.8	14.1	-0.01	13.7	14.1	-0.01
70-74	12.7	12.1	0.02	12.2	11.9	0.01
75-79	10.6	10.1	0.02	10.6	10.3	0.01
80-84	3.9	4.5	-0.03	4.1	4.2	-0.01
Gender: female	83.2	82.5	0.02	83.2	82.9	0.01
Race						
race = Asian	1.5	1.1	0.03	1.4	1.1	0.02
race = White	75.6	75.3	0.01	75.7	75.6	0.00
race = African American	8.2	8.1	0.00	8.2	8.1	0.00
Ethnicity						
ethnicity = Hispanic or Latino	1.5	1.2	0.03	1.4	1.2	0.02
ethnicity = Not Hispanic or Latino	85.2	84.5	0.02	85.3	84.8	0.02
Medical history: General						
Acute respiratory disease	43.3	34.9	0.17	39.9	40.4	-0.01
Attention deficit hyperactivity disorder	0.7	0.9	-0.03	0.7	0.9	-0.03
Chronic liver disease	1.5	1.7	-0.02	1.5	1.7	-0.02
Chronic obstructive lung disease	10.6	8.4	0.07	9.2	10.4	-0.04
Crohn's disease	0.4	0.6	-0.02	0.4	0.5	-0.01
Dementia	0.7	0.9	-0.03	0.7	0.9	-0.02
Depressive disorder	19.4	19.5	0.00	19.8	19.7	0.00
Diabetes mellitus	14.0	15.1	-0.03	14.6	14.9	-0.01
Gastroesophageal reflux disease	20.6	21.1	-0.01	20.9	21.3	-0.01
Gastrointestinal hemorrhage	1.6	1.8	-0.01	1.7	1.7	0.00
Human immunodeficiency virus infection	0.1	0.1	0.00	0.1	0.1	0.00
Hyperlipidemia	33.2	32.8	0.01	33.2	32.8	0.01
Hypertensive disorder	41.4	42.2	-0.02	41.8	41.6	0.00
Lesion of liver	0.8	1.1	-0.03	0.9	1.1	-0.02
Obesity	11.7	11.6	0.00	12.0	11.8	0.00
Osteoarthritis	28.3	29.7	-0.03	28.8	28.8	0.00
Pneumonia	6.5	5.0	0.06	5.7	6.5	-0.03
Psoriasis	1.6	1.8	-0.02	1.6	1.7	-0.01
Renal impairment	6.5	7.3	-0.03	6.7	7.2	-0.02
Rheumatoid arthritis	80.0	78.7	0.03	79.5	79.2	0.01
Schizophrenia	0.1	0.1	0.01	0.1	0.1	0.01
Ulcerative colitis	0.5	0.4	0.02	0.6	0.4	0.04
Urinary tract infectious disease	9.5	11.9	-0.08	10.4	10.5	-0.01
Viral hepatitis C	0.8	1.1	-0.03	0.8	1.0	-0.02
Visual system disorder	12.0	12.4	-0.01	12.2	12.2	0.00
Medical history: Cardiovascular disease						
Atrial fibrillation	3.3	4.0	-0.04	3.4	3.9	-0.03
Cerebrovascular disease	3.5	3.7	-0.01	3.6	3.4	0.01
Heart disease	17.5	18.4	-0.02	17.7	18.2	-0.01
Heart failure	3.5	3.6	-0.01	3.4	3.7	-0.02
Ischemic heart disease	1.9	2.0	0.00	2.0	1.9	0.01
Peripheral vascular disease	2.0	2.2	-0.01	2.0	2.0	0.00
Pulmonary embolism	1.0	1.0	0.00	1.0	1.0	0.00
Venous thrombosis	1.6	1.9	-0.03	1.7	1.8	-0.01
Medical history: Neoplasms						
Hematologic neoplasm	0.6	0.4	0.02	0.5	0.5	0.00
Malignant neoplastic disease	7.4	7.7	-0.01	7.4	7.7	-0.01
Malignant tumor of breast	1.6	1.6	0.00	1.6	1.6	0.00
Malignant tumor of lung	0.5	0.4	0.02	0.4	0.5	-0.01
Malignant tumor of urinary bladder	0.2	0.3	-0.01	0.2	0.3	-0.01
Primary malignant neoplasm of prostate	0.3	0.2	0.03	0.3	0.2	0.02
Medication use						
Agents acting on the renin-angiotensin system	35.5	36.7	-0.02	35.8	36.0	0.00
Antibacterials for systemic use	41.3	44.0	-0.05	42.9	43.4	-0.01
Antidepressants	43.1	44.5	-0.03	44.2	44.2	0.00
Antiepileptics	28.9	30.3	-0.03	30.1	29.8	0.01
Antiinflammatory and antirheumatic products	46.2	47.0	-0.02	46.7	46.7	0.00

Antineoplastic agents	39.6	38.0	0.03	38.4	39.1	-0.02
Antipsoriatics	0.9	0.9	0.00	1.0	0.8	0.02
Antithrombotic agents	25.1	27.4	-0.05	25.9	26.1	0.00
Beta blocking agents	26.4	28.5	-0.05	27.4	27.6	0.00
Calcium channel blockers	19.5	20.2	-0.02	19.9	19.9	0.00
Diuretics	35.3	35.5	0.00	35.6	35.4	0.00
Drugs for acid related disorders	49.4	51.4	-0.04	50.5	50.9	-0.01
Drugs for obstructive airway diseases	53.3	45.1	0.16	49.3	50.8	-0.03
Drugs used in diabetes	14.6	15.9	-0.04	15.2	15.4	0.00
Immunosuppressants	55.9	54.7	0.02	55.1	55.5	-0.01
Lipid modifying agents	34.4	34.8	-0.01	34.9	34.5	0.01
Opioids	34.8	36.9	-0.04	36.1	35.4	0.02
Psychostimulants, agents used for adhd and nootropics	5.4	5.4	0.00	5.5	5.4	0.01

S6.2.2. CCAE

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff			
				%	%	Std. diff
Age group						
15-19	0.5	0.4	0.00	0.5	0.5	0.00
20-24	1.4	1.3	-0.01	1.4	1.4	0.00
25-29	2.2	2.1	0.01	2.2	2.2	0.00
30-34	4.0	3.7	0.02	4.0	3.9	0.01
35-39	6.8	6.5	0.02	6.8	6.7	0.00
40-44	9.5	8.9	0.02	9.3	9.3	0.00
45-49	13.1	13.2	0.00	13.2	13.3	0.00
50-54	18.3	17.9	0.01	18.1	18.0	0.00
55-59	21.5	22.0	-0.01	21.5	21.8	-0.01
60-64	20.6	21.8	-0.03	21.1	21.1	0.00
65-69	2.0	2.1	0.00	2.0	2.0	0.00
Medical history: General						
Acute respiratory disease	62.5	50.7	0.24	58.0	57.5	0.01
Attention deficit hyperactivity disorder	1.4	1.5	-0.01	1.4	1.5	0.00
Chronic liver disease	2.7	2.9	-0.01	2.7	2.8	-0.01
Chronic obstructive lung disease	5.6	4.4	0.06	5.0	5.2	-0.01
Dementia	0.3	0.2	0.01	0.3	0.2	0.01
Depressive disorder	14.7	14.7	0.00	14.7	14.8	0.00
Diabetes mellitus	12.7	13.3	-0.02	13.2	13.1	0.00
Gastroesophageal reflux disease	16.5	16.8	-0.01	16.7	16.8	0.00
Human immunodeficiency virus infection	0.1	0.1	0.01	0.1	0.1	0.01
Hyperlipidemia	30.4	30.4	0.00	30.4	30.3	0.00
Lesion of liver	0.8	0.8	-0.01	0.8	0.8	0.00
Obesity	9.4	10.8	-0.05	10.2	10.1	0.00
Osteoarthritis	40.1	42.2	-0.04	41.5	41.0	0.01
Pneumonia	6.8	4.3	0.11	5.7	5.5	0.01
Psoriasis	3.1	3.0	0.00	3.0	3.0	0.00
Renal impairment	3.9	4.3	-0.02	4.2	4.1	0.00
Rheumatoid arthritis	83.6	82.2	0.04	82.9	83.0	0.00
Ulcerative colitis	0.7	0.7	0.00	0.7	0.7	0.00
Urinary tract infectious disease	13.6	14.3	-0.02	14.0	13.9	0.00
Viral hepatitis C	0.7	0.9	-0.02	0.8	0.9	-0.01
Visual system disorder	36.8	37.0	0.00	36.9	37.1	0.00
Medical history: Cardiovascular disease						
Atrial fibrillation	1.5	1.9	-0.03	1.7	1.8	0.00
Cerebrovascular disease	3.2	3.1	0.00	3.1	3.2	-0.01
Coronary arteriosclerosis	4.8	5.0	-0.01	5.0	4.9	0.00
Heart disease	17.3	18.2	-0.02	17.8	17.9	0.00
Heart failure	2.5	2.3	0.01	2.5	2.4	0.01
Ischemic heart disease	3.2	3.2	0.00	3.3	3.1	0.01
Peripheral vascular disease	1.6	1.7	-0.01	1.6	1.7	-0.01
Pulmonary embolism	0.9	1.0	-0.01	0.9	1.0	-0.01
Venous thrombosis	1.6	1.8	-0.01	1.7	1.8	0.00
Medical history: Neoplasms						
Hematologic neoplasm	1.2	1.1	0.01	1.2	1.1	0.00
Malignant lymphoma	0.7	0.6	0.00	0.6	0.6	0.00
Malignant neoplastic disease	7.6	7.5	0.00	7.6	7.5	0.00
Malignant tumor of colon	0.2	0.2	-0.01	0.2	0.2	0.00
Malignant tumor of lung	0.2	0.2	0.01	0.2	0.2	0.01
Malignant tumor of urinary bladder	0.2	0.1	0.00	0.1	0.1	0.00
Primary malignant neoplasm of prostate	0.2	0.3	-0.02	0.2	0.3	-0.01
Medication use						
Agents acting on the renin-angiotensin system	26.6	27.2	-0.01	27.1	26.9	0.00
Antibacterials for systemic use	50.6	50.3	0.00	51.1	51.0	0.00
Antidepressants	43.3	42.0	0.02	43.0	42.8	0.00
Antinflammatory and antirheumatic products	51.0	53.1	-0.04	51.9	52.0	0.00
Antipsoriatics	0.9	0.9	-0.01	0.9	0.9	0.00
Antithrombotic agents	8.9	10.8	-0.06	9.8	9.9	0.00
Beta blocking agents	18.1	18.6	-0.01	18.7	18.4	0.01
Calcium channel blockers	13.8	14.0	-0.01	14.1	13.9	0.00
Diuretics	28.0	28.0	0.00	28.3	28.3	0.00
Drugs for acid related disorders	40.7	40.1	0.01	40.5	40.8	-0.01
Drugs for obstructive airway diseases	43.6	37.0	0.13	41.1	40.7	0.01
Drugs used in diabetes	9.8	10.4	-0.02	10.3	10.2	0.00
Immunosuppressants	52.5	49.8	0.05	51.1	51.2	0.00
Lipid modifying agents	22.5	22.9	-0.01	22.7	22.6	0.00
Opioids	40.1	42.0	-0.04	41.4	41.2	0.00
Psycholeptics	38.6	37.4	0.02	38.2	38.1	0.00
Psychostimulants, agents used for adhd and nootropics	7.3	7.1	0.01	7.3	7.4	0.00

S6.2.3. CPRD

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff	AZM	AMX	Std. diff
				%	%	
Age group						
20-24	<4.3	0.3	0.07	2.8	0.3	0.20
25-29	<4.3	1.0	-0.01	2.8	1.0	0.13
35-39	<4.3	3.4	0.00	9.4	3.4	0.24
40-44	<4.3	4.8	-0.07	8.9	4.8	0.16
45-49	7.0	7.2	-0.01	4.4	7.2	-0.12
50-54	5.2	10.1	-0.18	8.1	10.0	-0.07
55-59	13.9	12.9	0.03	9.4	12.9	-0.11
60-64	20.9	14.2	0.18	13.3	14.2	-0.03
65-69	13.0	14.3	-0.04	9.2	14.3	-0.16
70-74	14.8	12.2	0.08	13.3	12.2	0.03
75-79	8.7	9.6	-0.03	5.3	9.6	-0.17
80-84	6.1	5.6	0.02	10.3	5.6	0.17
85-89	<4.3	1.9	-0.09	<1.9	1.9	-0.16
90-94	<4.3	0.6	0.03	2.5	0.6	0.15
Gender: female	78.3	73.4	0.11	73.9	73.4	0.01
Medical history: General						
Acute respiratory disease	30.4	20.9	0.22	29.2	21.1	0.19
Chronic obstructive lung disease	13.0	3.7	0.34	6.7	3.8	0.13
Depressive disorder	<4.3	2.5	0.06	<1.9	2.5	-0.10
Diabetes mellitus	4.3	2.3	0.11	3.6	2.3	0.08
Gastroesophageal reflux disease	<4.3	0.7	0.02	<1.9	0.7	-0.06
Gastrointestinal hemorrhage	<4.3	1.6	-0.07	<1.9	1.6	-0.14
Hyperlipidemia	<4.3	0.9	-0.01	<1.9	0.9	-0.08
Hypertensive disorder	<4.3	2.7	-0.01	<1.9	2.7	-0.14
Lesion of liver	<4.3	0.1	0.11	<1.9	<0.1	0.04
Obesity	<4.3	0.3	0.07	<1.9	0.3	-0.01
Osteoarthritis	6.1	4.4	0.07	8.1	4.5	0.15
Pneumonia	<4.3	1.4	0.09	<1.9	1.4	-0.05
Renal impairment	<4.3	3.5	-0.18	2.5	3.5	-0.06
Rheumatoid arthritis	45.2	36.8	0.17	36.4	36.9	-0.01
Urinary tract infectious disease	<4.3	5.2	-0.25	<1.9	5.2	-0.30
Visual system disorder	7.0	8.3	-0.05	9.4	8.3	0.04
Medical history: Cardiovascular disease						
Atrial fibrillation	<4.3	1.1	0.12	<1.9	1.1	-0.03
Heart disease	<4.3	3.8	-0.02	<1.9	3.8	-0.18
Medical history: Neoplasms						
Hematologic neoplasm	<4.3	<0.1	0.12	<1.9	<0.1	0.05
Malignant lymphoma	<4.3	<0.1	0.12	<1.9	<0.1	0.05
Malignant neoplastic disease	<4.3	1.8	0.11	3.3	1.8	0.10
Malignant tumor of breast	<4.3	0.1	0.10	2.5	0.1	0.20
Medication use						
Agents acting on the renin-angiotensin system	28.7	26.5	0.05	22.2	26.5	-0.10
Antibacterials for systemic use	73.9	44.5	0.63	49.2	45.0	0.08
Antidepressants	38.3	31.8	0.14	29.7	31.9	-0.05
Antiepileptics	15.7	8.7	0.21	5.0	8.8	-0.15
Antiinflammatory and antirheumatic products	53.0	52.1	0.02	50.3	52.2	-0.04
Antineoplastic agents	37.4	52.7	-0.31	45.3	52.5	-0.14
Antipsoritacs	<4.3	0.9	-0.01	2.5	0.9	0.12
Antithrombotic agents	27.0	23.8	0.07	15.8	23.9	-0.20
Beta blocking agents	10.4	16.7	-0.18	7.8	16.7	-0.27
Calcium channel blockers	18.3	18.8	-0.02	11.9	18.8	-0.19
Diuretics	18.3	23.3	-0.12	15.0	23.3	-0.21
Drugs for acid related disorders	74.8	63.9	0.24	64.7	64.1	0.01
Drugs for obstructive airway diseases	69.6	32.3	0.80	29.2	33.0	-0.08
Drugs used in diabetes	10.4	8.8	0.06	10.3	8.8	0.05
Immunosuppressants	47.0	58.1	-0.22	50.6	57.9	-0.15
Lipid modifying agents	32.2	28.3	0.08	16.9	28.4	-0.27
Opioids	46.1	39.2	0.14	45.3	39.3	0.12
Psycholeptics	20.9	19.9	0.02	15.6	19.9	-0.11

S6.2.4. DAGermany

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff	AZM	AMX	Std. diff
				%	%	
Age group						
20-24	<5.6	<2.5	0.02	<5.6	<2.5	0.02
30-34	<5.6	4.0	-0.10	<5.6	4.0	-0.10
35-39	6.7	4.5	0.10	6.7	4.5	0.10
40-44	12.4	4.0	0.31	12.4	4.0	0.31
45-49	7.9	9.4	-0.06	7.9	9.4	-0.06
50-54	13.5	9.4	0.13	13.5	9.4	0.13
55-59	16.9	13.4	0.10	16.9	13.4	0.10
60-64	12.4	10.9	0.05	12.4	10.9	0.05
65-69	10.1	12.4	-0.07	10.1	12.4	-0.07
70-74	7.9	9.4	-0.06	7.9	9.4	-0.06
75-79	5.6	6.9	-0.05	5.6	6.9	-0.05
80-84	<5.6	6.9	-0.22	<5.6	6.9	-0.22
Gender: female	89.9	79.2	0.30	89.9	79.2	0.30
Medical history: General						
Acute respiratory disease	61.8	55.4	0.13	61.8	55.4	0.13
Chronic liver disease	<5.6	<2.5	-0.07	<5.6	<2.5	-0.07
Chronic obstructive lung disease	6.7	11.4	-0.16	6.7	11.4	-0.16
Depressive disorder	14.6	10.4	0.13	14.6	10.4	0.13
Diabetes mellitus	5.6	13.4	-0.27	5.6	13.4	-0.27
Hyperlipidemia	9.0	13.4	-0.14	9.0	13.4	-0.14
Hypertensive disorder	28.1	40.1	-0.26	28.1	40.1	-0.25
Obesity	<5.6	5.0	-0.02	<5.6	5.0	-0.02
Osteoarthritis	11.2	13.4	-0.06	11.2	13.4	-0.06
Pneumonia	<5.6	6.9	-0.22	<5.6	6.9	-0.22
Psoriasis	<5.6	<2.5	0.15	<5.6	<2.5	0.15
Renal impairment	<5.6	4.5	-0.06	<5.6	4.5	-0.06
Rheumatoid arthritis	56.2	57.9	-0.04	56.2	57.9	-0.04
Urinary tract infectious disease	5.6	9.9	-0.16	5.6	9.9	-0.16
Visual system disorder	11.2	16.8	-0.16	11.2	16.8	-0.16
Medical history: Cardiovascular disease						
Cerebrovascular disease	<5.6	<2.5	0.14	<5.6	<2.5	0.14
Coronary arteriosclerosis	<5.6	<2.5	0.06	<5.6	<2.5	0.06
Heart disease	11.2	21.8	-0.29	11.2	21.8	-0.29
Heart failure	<5.6	6.9	-0.30	<5.6	6.9	-0.30
Ischemic heart disease	<5.6	7.9	-0.14	<5.6	7.9	-0.14
Peripheral vascular disease	<5.6	2.5	-0.10	<5.6	2.5	-0.10
Venous thrombosis	<5.6	5.9	-0.12	<5.6	5.9	-0.12
Medical history: Neoplasms						
Malignant neoplastic disease	<5.6	6.4	-0.08	<5.6	6.4	-0.08
Medication use						
Agents acting on the renin-angiotensin system	29.2	39.6	-0.22	29.2	39.6	-0.22
Antibacterials for systemic use	29.2	37.6	-0.18	29.2	37.6	-0.18
Antidepressants	16.9	18.8	-0.05	16.9	18.8	-0.05
Antiepileptics	<5.6	7.9	-0.14	<5.6	7.9	-0.14
Antiinflammatory and antirheumatic products	43.8	46.5	-0.06	43.8	46.5	-0.05
Antineoplastic agents	29.2	27.2	0.04	29.2	27.2	0.04
Antithrombotic agents	13.5	26.2	-0.32	13.5	26.2	-0.32
Beta blocking agents	25.8	35.6	-0.21	25.8	35.6	-0.21
Calcium channel blockers	16.9	18.3	-0.04	16.9	18.3	-0.04
Diuretics	19.1	39.1	-0.45	19.1	39.1	-0.45
Drugs for acid related disorders	65.2	69.8	-0.10	65.2	69.8	-0.10
Drugs for obstructive airway diseases	19.1	21.8	-0.07	19.1	21.8	-0.07
Drugs used in diabetes	6.7	12.9	-0.21	6.7	12.9	-0.21
Immunosuppressants	37.1	32.7	0.09	37.1	32.7	0.09
Lipid modifying agents	5.6	17.8	-0.39	5.6	17.8	-0.38
Opioids	20.2	27.2	-0.16	20.2	27.2	-0.16
Psycholeptics	16.9	10.4	0.19	16.9	10.4	0.19

S6.2.5. IMRD

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff			
				%	%	Std. diff
Age group						
25-29	<4.5	0.9	0.13	3.6	0.9	0.18
30-34	<4.5	1.7	-0.07	6.7	1.7	0.25
35-39	4.5	3.1	0.07	10.0	3.1	0.28
40-44	<4.5	4.3	-0.09	3.3	4.3	-0.05
45-49	5.4	7.3	-0.08	4.0	7.2	-0.14
50-54	<4.5	10.1	-0.26	3.8	10.1	-0.25
55-59	9.8	12.4	-0.08	2.6	12.4	-0.38
60-64	17.9	14.6	0.09	16.6	14.5	0.06
65-69	13.4	14.6	-0.04	19.7	14.7	0.13
70-74	19.6	12.7	0.19	14.2	12.7	0.04
75-79	9.8	9.5	0.01	6.9	9.5	-0.10
80-84	8.0	5.7	0.09	8.3	5.7	0.10
85-89	<4.5	2.0	-0.10	<1.6	2.1	-0.17
90-94	<4.5	0.5	0.04	<1.6	0.5	-0.05
Gender: female	78.6	73.8	0.11	74.1	73.8	0.01
Race						
race = White	30.4	30.8	-0.01	48.2	30.7	0.36
race = Asian Indian	<4.5	0.6	0.03	2.9	0.6	0.17
race = Pakistani	<4.5	0.4	0.07	1.7	0.4	0.13
Medical history: General						
Acute respiratory disease	29.5	20.8	0.20	20.6	20.9	-0.01
Chronic obstructive lung disease	17.0	3.7	0.45	5.9	3.9	0.09
Depressive disorder	4.5	2.5	0.11	2.6	2.5	0.00
Diabetes mellitus	8.0	2.1	0.27	8.3	2.1	0.28
Gastroesophageal reflux disease	<4.5	0.6	0.03	<1.6	0.6	-0.06
Gastrointestinal hemorrhage	<4.5	1.4	-0.05	<1.6	1.4	-0.13
Hyperlipidemia	<4.5	1.0	-0.01	<1.6	1.0	-0.10
Hypertensive disorder	<4.5	2.6	0.00	<1.6	2.6	-0.15
Obesity	<4.5	0.4	0.14	3.1	0.4	0.21
Osteoarthritis	<4.5	4.6	-0.05	7.4	4.6	0.12
Pneumonia	<4.5	1.1	0.17	<1.6	1.1	-0.02
Renal impairment	<4.5	3.1	-0.03	<1.6	3.2	-0.18
Rheumatoid arthritis	33.9	37.3	-0.07	42.0	37.4	0.09
Urinary tract infectious disease	<4.5	4.5	-0.16	5.2	4.6	0.03
Visual system disorder	9.8	8.3	0.05	10.2	8.3	0.06
Medical history: Cardiovascular disease						
Atrial fibrillation	<4.5	1.1	-0.02	<1.6	1.1	-0.11
Cerebrovascular disease	<4.5	0.6	0.11	<1.6	0.6	-0.02
Heart disease	<4.5	3.8	-0.12	<1.6	3.8	-0.23
Venous thrombosis	<4.5	0.8	0.01	6.7	0.8	0.31
Medical history: Neoplasms						
Malignant lymphoma	<4.5	0.1	0.11	<1.6	0.1	0.03
Malignant neoplastic disease	<4.5	1.9	0.06	5.5	1.9	0.19
Malignant tumor of breast	<4.5	0.2	0.09	5.0	0.2	0.30
Medication use						
Antibacterials for systemic use	9.8	4.6	0.20	2.6	4.6	-0.11
Antidepressants	<4.5	1.1	0.16	<1.6	1.1	-0.02
Antiinflammatory and antirheumatic products	<4.5	1.2	-0.03	<1.6	1.2	-0.11
Antineoplastic agents	<4.5	1.6	-0.06	<1.6	1.6	-0.14
Antithrombotic agents	<4.5	1.4	0.10	3.3	1.4	0.13
Beta blocking agents	<4.5	0.5	0.05	<1.6	0.5	-0.04
Diuretics	<4.5	1.0	-0.01	<1.6	1.0	-0.10
Drugs for acid related disorders	<4.5	1.8	-0.08	<1.6	1.8	-0.16
Drugs for obstructive airway diseases	<4.5	0.7	0.02	<1.6	0.7	-0.07
Immunosuppressants	<4.5	1.8	-0.08	<1.6	1.8	-0.16
Lipid modifying agents	<4.5	1.3	0.10	3.3	1.3	0.13

S6.2.6 IPCI

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff			
				%	%	Std. diff
Age group						
20-24	<4.1	<1.0	0.05	<4.1	<1.0	0.05
35-39	<4.1	<1.0	0.19	<4.1	<1.0	0.19
40-44	6.6	4.6	0.09	6.6	4.6	0.09
45-49	9.1	6.6	0.09	9.1	6.6	0.09
50-54	7.4	6.8	0.02	7.4	6.8	0.02
55-59	8.3	11.0	-0.09	8.3	11.0	-0.09
60-64	13.2	14.9	-0.05	13.2	14.9	-0.05
65-69	16.5	10.6	0.18	16.5	10.6	0.18
70-74	12.4	13.5	-0.03	12.4	13.5	-0.03
75-79	9.9	11.8	-0.06	9.9	11.8	-0.06
80-84	8.3	8.9	-0.02	8.3	8.9	-0.02
85-89	<4.1	6.8	-0.16	<4.1	6.8	-0.16
Gender: female	65.3	72.0	-0.15	65.3	72.0	-0.15
Medical history: General						
Acute respiratory disease	37.2	31.9	0.11	37.2	31.9	0.11
Depressive disorder	<4.1	3.7	-0.02	<4.1	3.7	-0.02
Diabetes mellitus	6.6	8.3	-0.06	6.6	8.3	-0.06
Gastrointestinal hemorrhage	<4.1	1.7	0.06	<4.1	1.7	0.06
Hyperlipidemia	<4.1	2.7	-0.14	<4.1	2.7	-0.14
Hypertensive disorder	19.0	17.6	0.04	19.0	17.6	0.04
Obesity	<4.1	1.4	0.12	<4.1	1.4	0.12
Osteoarthritis	4.1	7.0	-0.13	4.1	7.0	-0.13
Pneumonia	14.9	14.9	0.00	14.9	14.9	0.00
Renal impairment	<4.1	3.5	-0.06	<4.1	3.5	-0.06
Ulcerative colitis	<4.1	<1.0	0.15	<4.1	<1.0	0.15
Urinary tract infectious disease	9.9	18.8	-0.26	9.9	18.8	-0.26
Visual system disorder	21.5	15.9	0.14	21.5	15.9	0.14
Medical history: Cardiovascular disease						
Atrial fibrillation	<4.1	4.1	-0.04	<4.1	4.1	-0.04
Cerebrovascular disease	<4.1	2.7	-0.01	<4.1	2.7	-0.01
Heart disease	12.4	14.5	-0.06	12.4	14.5	-0.06
Heart failure	4.1	3.5	0.03	4.1	3.5	0.03
Ischemic heart disease	4.1	6.0	-0.08	4.1	6.0	-0.08
Peripheral vascular disease	<4.1	5.0	-0.25	<4.1	5.0	-0.25
Venous thrombosis	<4.1	1.0	-0.02	<4.1	<1.0	-0.02
Medical history: Neoplasms						
Malignant neoplastic disease	7.4	7.7	-0.01	7.4	7.7	-0.01
Medication use						
Agents acting on the renin-angiotensin system	34.7	35.4	-0.02	34.7	35.4	-0.01
Antibacterials for systemic use	48.8	47.0	0.04	48.8	47.0	0.04
Antidepressants	18.2	19.9	-0.04	18.2	19.9	-0.04
Antiepileptics	9.1	8.9	0.01	9.1	8.9	0.01
Antinflammatory and antirheumatic products	36.4	41.8	-0.11	36.4	41.8	-0.11
Antineoplastic agents	46.3	48.4	-0.04	46.3	48.4	-0.04
Antipsoriatcs	<4.1	1.9	-0.09	<4.1	1.9	-0.09
Antithrombotic agents	30.6	32.5	-0.04	30.6	32.5	-0.04
Beta blocking agents	27.3	31.9	-0.10	27.3	31.9	-0.10
Calcium channel blockers	19.8	20.3	-0.01	19.8	20.3	-0.01
Diuretics	32.2	32.9	-0.02	32.2	32.9	-0.02
Drugs for acid related disorders	77.7	80.3	-0.06	77.7	80.3	-0.06
Drugs for obstructive airway diseases	54.5	42.0	0.25	54.5	42.0	0.25
Drugs used in diabetes	13.2	12.0	0.04	13.2	12.0	0.04
Immunosuppressants	53.7	52.4	0.03	53.7	52.4	0.03
Lipid modifying agents	34.7	38.1	-0.07	34.7	38.1	-0.07
Opioids	24.8	28.8	-0.09	24.8	28.8	-0.09
Psycholeptics	33.9	27.3	0.14	33.9	27.3	0.14
Psychostimulants, agents used for adhd and nootropics	<4.1	<1.0	0.15	<4.1	<1.0	0.15

S6.2.7. MDCD

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff			
				%	%	Std. diff
Age group						
15-19	1.3	1.5	-0.02	1.2	1.5	-0.02
20-24	2.4	2.3	0.01	2.7	2.3	0.03
25-29	4.5	4.9	-0.02	5.1	4.5	0.03
30-34	6.1	7.4	-0.05	6.9	7.0	-0.01
35-39	9.1	10.2	-0.04	9.0	9.5	-0.02
40-44	10.5	11.1	-0.02	10.8	10.7	0.00
45-49	13.1	13.6	-0.02	12.8	13.7	-0.03
50-54	16.5	15.3	0.03	16.3	16.0	0.01
55-59	15.6	15.8	-0.01	15.5	16.2	-0.02
60-64	12.3	10.8	0.05	11.8	11.0	0.02
65-69	4.3	3.2	0.06	4.1	3.5	0.03
70-74	2.2	1.7	0.04	2.0	1.8	0.02
85-89	0.3	0.4	0.00	0.3	0.4	-0.02
Gender: female	89.1	89.7	-0.02	89.3	89.9	-0.02
Race						
race = Black or African American	27.4	29.9	-0.06	27.5	28.0	-0.01
race = White	57.3	54.2	0.06	56.9	56.3	0.01
Medical history: General						
Acute respiratory disease	69.7	54.0	0.33	61.4	63.4	-0.04
Attention deficit hyperactivity disorder	2.6	2.6	0.00	2.7	2.7	0.00
Chronic liver disease	6.5	6.8	-0.01	6.8	6.8	0.00
Chronic obstructive lung disease	28.0	20.4	0.18	22.3	25.6	-0.08
Crohn's disease	1.1	0.7	0.04	1.1	0.7	0.04
Dementia	1.2	1.5	-0.03	1.2	1.6	-0.03
Depressive disorder	39.9	41.4	-0.03	40.9	41.1	0.00
Diabetes mellitus	26.6	25.6	0.02	26.3	26.1	0.00
Gastroesophageal reflux disease	35.4	33.9	0.03	34.5	34.6	0.00
Gastrointestinal hemorrhage	5.0	5.8	-0.04	5.1	5.8	-0.03
Human immunodeficiency virus infection	0.3	0.7	-0.06	0.5	0.6	-0.02
Hyperlipidemia	38.8	35.6	0.07	37.9	37.0	0.02
Hypertensive disorder	59.2	58.0	0.03	59.0	59.4	-0.01
Lesion of liver	1.3	1.7	-0.03	1.5	1.9	-0.03
Obesity	23.3	24.8	-0.04	23.6	24.0	-0.01
Osteoarthritis	55.2	55.1	0.00	54.6	55.7	-0.02
Pneumonia	15.9	9.1	0.21	12.1	12.4	-0.01
Psoriasis	2.1	1.9	0.01	2.2	2.1	0.00
Renal impairment	11.6	12.0	-0.01	10.8	12.0	-0.04
Rheumatoid arthritis	81.8	83.1	-0.03	82.4	83.2	-0.02
Schizophrenia	1.6	1.7	-0.01	1.7	1.7	0.00
Ulcerative colitis	0.5	0.6	-0.01	0.7	0.6	0.01
Urinary tract infectious disease	20.6	22.1	-0.04	21.3	21.2	0.00
Viral hepatitis C	4.8	5.5	-0.03	5.5	5.6	0.00
Visual system disorder	50.0	50.4	-0.01	50.1	51.1	-0.02
Medical history: Cardiovascular disease						
Atrial fibrillation	3.1	2.8	0.02	2.8	3.0	-0.01
Cerebrovascular disease	5.9	5.8	0.00	6.2	6.1	0.00
Coronary arteriosclerosis	11.3	9.0	0.08	9.8	10.0	0.00
Heart disease	35.0	31.0	0.09	32.2	33.2	-0.02
Heart failure	10.9	9.2	0.06	9.4	10.5	-0.04
Ischemic heart disease	9.4	6.9	0.09	8.4	7.5	0.04
Peripheral vascular disease	4.6	5.2	-0.03	4.3	5.2	-0.04
Pulmonary embolism	2.6	2.8	-0.01	2.4	2.9	-0.04
Venous thrombosis	3.5	3.9	-0.02	3.6	4.0	-0.02
Medical history: Neoplasms						
Hematologic neoplasm	1.4	1.5	0.00	1.5	1.5	-0.01
Malignant lymphoma	0.5	0.5	0.01	0.6	0.4	0.03
Malignant neoplasm of anorectum	<0.1	0.2	-0.03	0.1	0.2	-0.02
Malignant neoplastic disease	7.2	7.0	0.01	7.1	6.9	0.01
Malignant tumor of lung	0.5	0.6	-0.01	0.4	0.6	-0.03
Malignant tumor of urinary bladder	<0.1	<0.1	0.02	<0.1	<0.1	0.02
Primary malignant neoplasm of prostate	<0.1	0.2	-0.02	<0.1	0.1	-0.01
Medication use						
Agents acting on the renin-angiotensin system	36.3	34.4	0.04	35.0	35.0	0.00
Antibacterials for systemic use	60.5	59.7	0.02	60.1	59.8	0.00
Antidepressants	62.3	61.3	0.02	62.3	62.4	0.00
Antiepileptics	51.0	49.8	0.02	51.1	50.2	0.02
Antiinflammatory and antirheumatic products	56.8	59.4	-0.05	59.3	58.0	0.03
Antineoplastic agents	36.9	34.2	0.06	36.0	35.6	0.01
Antipsoriatics	0.7	1.0	-0.03	0.6	1.1	-0.05
Antithrombotic agents	22.8	22.6	0.00	22.1	22.9	-0.02
Beta blocking agents	28.6	27.3	0.03	27.7	28.3	-0.01
Calcium channel blockers	23.4	22.0	0.03	22.3	22.7	-0.01
Diuretics	40.4	37.6	0.06	39.1	39.2	0.00

Drugs for acid related disorders	61.7	59.8	0.04	60.3	61.6	-0.03
Drugs for obstructive airway diseases	65.5	53.5	0.25	59.0	60.3	-0.03
Drugs used in diabetes	19.8	18.8	0.02	19.5	18.9	0.02
Immunosuppressants	53.1	49.4	0.07	51.5	51.8	0.00
Lipid modifying agents	32.0	30.2	0.04	31.0	31.3	-0.01
Opioids	66.6	68.3	-0.04	67.6	68.7	-0.02
Psycholeptics	58.0	56.7	0.03	57.4	57.6	0.00
Psychostimulants, agents used for adhd and nootropics	8.3	7.7	0.02	8.2	7.7	0.02

S6.2.8. MDCR

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff	AZM	AMX	Std. diff
				%	%	
Age group						
45-49	0.1	0.1	0.02	0.1	0.1	0.02
55-59	1.0	1.1	0.00	1.0	1.2	-0.02
60-64	2.1	2.2	-0.01	2.2	2.3	-0.01
65-69	29.2	28.1	0.03	29.0	28.7	0.01
70-74	27.7	28.2	-0.01	27.8	28.0	0.00
75-79	19.6	20.2	-0.01	19.8	20.0	0.00
80-84	12.3	13.0	-0.02	12.4	12.6	-0.01
85-89	5.8	5.3	0.02	5.7	5.3	0.02
90-94	1.4	1.4	0.00	1.4	1.3	0.01
95-99	0.1	0.2	-0.01	0.1	0.2	-0.02
Gender: female	78.1	74.0	0.10	75.7	75.7	0.00
Medical history: General						
Acute respiratory disease	53.3	34.2	0.39	42.5	44.4	-0.04
Attention deficit hyperactivity disorder	0.1	0.2	-0.01	0.1	0.2	-0.01
Chronic liver disease	1.7	2.0	-0.03	1.7	2.1	-0.03
Chronic obstructive lung disease	20.3	14.7	0.15	16.7	18.1	-0.04
Crohn's disease	0.6	0.5	0.02	0.7	0.5	0.03
Dementia	2.1	2.3	-0.02	2.2	2.3	0.00
Depressive disorder	10.4	11.0	-0.02	10.3	11.0	-0.02
Diabetes mellitus	20.7	20.7	0.00	20.6	20.4	0.00
Gastroesophageal reflux disease	19.4	18.8	0.02	19.2	19.7	-0.01
Gastrointestinal hemorrhage	4.4	5.1	-0.03	4.6	5.0	-0.02
Human immunodeficiency virus infection	<0.1	0.1	-0.02	<0.1	0.1	-0.02
Hyperlipidemia	39.1	40.0	-0.02	39.8	39.7	0.00
Hypertensive disorder	62.2	61.6	0.01	61.9	61.4	0.01
Lesion of liver	0.9	1.1	-0.02	0.9	1.1	-0.02
Obesity	5.5	6.3	-0.04	5.8	6.2	-0.02
Osteoarthritis	53.3	57.7	-0.09	56.1	55.5	0.01
Pneumonia	14.3	9.2	0.16	11.6	12.0	-0.01
Psoriasis	2.0	2.4	-0.03	2.2	2.4	-0.02
Renal impairment	12.6	12.5	0.00	12.7	12.5	0.01
Rheumatoid arthritis	87.0	86.5	0.02	86.7	86.6	0.00
Schizophrenia	<0.1	0.1	-0.01	<0.1	0.1	-0.01
Ulcerative colitis	0.7	0.7	-0.01	0.6	0.7	-0.01
Urinary tract infectious disease	15.2	17.1	-0.05	15.6	16.1	-0.01
Viral hepatitis C	0.4	0.5	-0.02	0.4	0.5	-0.01
Visual system disorder	61.5	61.0	0.01	61.3	60.8	0.01
Medical history: Cardiovascular disease						
Atrial fibrillation	9.6	11.3	-0.06	10.3	10.6	-0.01
Cerebrovascular disease	12.0	11.3	0.02	11.8	11.3	0.02
Coronary arteriosclerosis	19.8	20.3	-0.01	20.7	20.5	0.01
Heart disease	44.9	46.4	-0.03	45.7	46.0	-0.01
Heart failure	11.9	10.5	0.04	11.4	11.2	0.01
Ischemic heart disease	10.5	10.0	0.02	10.7	10.2	0.02
Peripheral vascular disease	6.3	6.4	0.00	6.5	6.0	0.02
Pulmonary embolism	1.4	1.4	0.01	1.5	1.3	0.02
Venous thrombosis	3.2	3.8	-0.04	3.5	3.7	-0.02
Medical history: Neoplasms						
Hematologic neoplasm	2.0	2.3	-0.02	2.1	2.2	-0.01
Malignant lymphoma	1.5	1.4	0.01	1.6	1.4	0.02
Malignant neoplasm of anorectum	0.3	0.4	-0.02	0.3	0.4	-0.02
Malignant neoplastic disease	18.8	19.7	-0.02	19.4	19.1	0.01
Malignant tumor of breast	4.1	3.9	0.01	4.3	3.9	0.02
Malignant tumor of colon	0.6	0.8	-0.02	0.7	0.8	-0.01
Malignant tumor of lung	0.8	0.9	-0.01	0.8	1.0	-0.03
Malignant tumor of urinary bladder	0.9	0.9	0.00	0.9	0.9	0.00
Primary malignant neoplasm of prostate	1.9	2.4	-0.03	2.2	2.1	0.01
Medication use						
Agents acting on the renin-angiotensin system	48.0	47.7	0.00	47.7	48.3	-0.01
Antibacterials for systemic use	53.1	51.8	0.03	52.4	52.7	-0.01
Antidepressants	36.6	35.7	0.02	36.2	37.1	-0.02
Antiepileptics	23.7	23.4	0.01	23.9	23.7	0.01
Antiinflammatory and antirheumatic products	37.0	41.3	-0.09	40.3	39.5	0.02
Antineoplastic agents	37.1	36.1	0.02	36.5	37.2	-0.02
Antipsoriatics	1.3	1.2	0.01	1.3	1.3	0.00
Antithrombotic agents	23.3	26.2	-0.07	24.7	24.6	0.00
Beta blocking agents	40.3	41.7	-0.03	41.4	41.0	0.01
Calcium channel blockers	30.5	29.5	0.02	30.2	29.9	0.01
Diuretics	48.1	47.5	0.01	47.6	48.4	-0.02
Drugs for acid related disorders	52.0	49.7	0.05	51.2	51.6	-0.01
Drugs for obstructive airway diseases	49.3	36.0	0.27	41.8	43.0	-0.02
Drugs used in diabetes	15.5	15.1	0.01	15.5	15.1	0.01
Immunosuppressants	49.6	47.6	0.04	48.5	49.3	-0.02
Lipid modifying agents	47.4	47.6	0.00	48.0	47.9	0.00

Opioids	41.9	44.9	-0.06	42.9	43.2	0.00
Psycholeptics	38.7	37.1	0.03	37.9	38.2	-0.01
Psychostimulants, agents used for adhd and nootropics	2.3	2.6	-0.02	2.4	2.7	-0.02

S6.2.9. OpenClaims

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff			
				%	%	Std. diff
Age group						
15-19	0.3	0.3	0.00	0.3	0.3	0.00
20-24	1.0	1.0	0.00	1.0	1.0	0.00
25-29	1.8	1.7	0.00	1.8	1.8	0.00
30-34	3.0	2.9	0.01	3.0	2.9	0.00
40-44	6.1	5.7	0.02	6.0	5.9	0.00
50-54	11.7	11.1	0.02	11.5	11.5	0.00
55-59	14.0	13.9	0.00	14.0	14.0	0.00
60-64	13.8	14.1	-0.01	13.9	14.1	0.00
65-69	12.4	13.0	-0.02	12.7	12.7	0.00
80-84	4.0	4.6	-0.03	4.3	4.2	0.00
85-89	0.2	0.2	0.00	0.2	0.2	0.01
Gender: female	84.7	82.1	0.07	83.5	83.5	0.00
Medical history: General						
Acute respiratory disease	36.6	27.3	0.20	33.1	31.5	0.03
Attention deficit hyperactivity disorder	0.9	0.8	0.00	0.9	0.8	0.00
Chronic liver disease	2.1	2.2	-0.01	2.2	2.2	0.00
Chronic obstructive lung disease	10.6	8.0	0.09	9.4	9.3	0.00
Crohn's disease	0.5	0.5	0.00	0.5	0.5	0.00
Dementia	0.9	1.0	-0.01	0.9	0.9	0.00
Depressive disorder	11.3	11.6	-0.01	11.7	11.5	0.01
Diabetes mellitus	16.5	16.9	-0.01	16.8	16.7	0.00
Gastroesophageal reflux disease	5.5	6.4	-0.04	6.0	5.9	0.00
Gastrointestinal hemorrhage	2.5	2.7	-0.01	2.6	2.6	0.00
Hyperlipidemia	26.6	27.3	-0.02	27.1	26.8	0.01
Hypertensive disorder	37.0	38.1	-0.02	37.9	37.4	0.01
Lesion of liver	0.8	0.9	-0.01	0.9	0.9	0.00
Obesity	7.6	7.8	-0.01	7.8	7.7	0.00
Osteoarthritis	35.5	38.0	-0.05	37.0	36.6	0.01
Pneumonia	7.1	4.8	0.10	6.1	5.8	0.01
Psoriasis	1.9	1.9	0.00	2.0	1.9	0.00
Renal impairment	7.2	7.7	-0.02	7.5	7.5	0.00
Rheumatoid arthritis	68.4	67.8	0.01	68.1	68.0	0.00
Schizophrenia	0.2	0.2	0.01	0.2	0.2	0.01
Ulcerative colitis	0.5	0.5	0.00	0.5	0.5	0.00
Urinary tract infectious disease	10.0	11.0	-0.03	10.6	10.5	0.00
Viral hepatitis C	1.0	1.1	-0.01	1.0	1.0	0.00
Visual system disorder	26.7	27.3	-0.01	27.1	27.0	0.00
Medical history: Cardiovascular disease						
Atrial fibrillation	3.5	4.4	-0.05	4.0	4.0	0.00
Cerebrovascular disease	3.5	3.5	0.00	3.6	3.5	0.00
Coronary arteriosclerosis	7.3	7.7	-0.02	7.7	7.6	0.00
Heart disease	19.8	20.8	-0.02	20.4	20.3	0.00
Ischemic heart disease	3.9	3.9	0.00	4.0	3.9	0.00
Peripheral vascular disease	10.4	11.2	-0.03	11.0	10.8	0.00
Pulmonary embolism	0.9	1.0	-0.01	1.0	1.0	0.00
Venous thrombosis	1.6	1.8	-0.01	1.7	1.7	0.00
Medical history: Neoplasms						
Hematologic neoplasm	1.0	1.1	-0.01	1.1	1.1	0.00
Malignant lymphoma	0.7	0.7	0.00	0.7	0.7	0.00
Malignant neoplasm of anorectum	0.1	0.1	0.00	0.1	0.1	0.00
Malignant neoplastic disease	8.0	8.4	-0.01	8.3	8.2	0.00
Malignant tumor of breast	2.1	2.1	0.00	2.2	2.1	0.00
Malignant tumor of colon	0.3	0.3	-0.01	0.3	0.3	0.00
Malignant tumor of lung	0.4	0.3	0.01	0.4	0.4	0.00
Malignant tumor of urinary bladder	0.2	0.3	-0.01	0.2	0.3	0.00
Primary malignant neoplasm of prostate	0.6	0.7	-0.01	0.6	0.6	0.00
Medication use						
Agents acting on the renin-angiotensin system	37.3	38.2	-0.02	38.0	37.9	0.00
Antibacterials for systemic use	49.3	49.7	-0.01	49.9	49.9	0.00
Antidepressants	45.6	45.4	0.00	46.0	45.8	0.00
Antiepileptics	32.9	33.3	-0.01	33.5	33.3	0.00
Antinflammatory and antirheumatic products	45.3	47.7	-0.05	46.8	46.6	0.00
Antineoplastic agents	38.6	35.9	0.06	37.0	37.3	0.00
Antithrombotic agents	15.7	18.3	-0.07	17.2	17.0	0.00
Beta blocking agents	28.8	30.2	-0.03	29.7	29.6	0.00
Calcium channel blockers	21.7	22.0	-0.01	22.0	21.9	0.00
Diuretics	35.6	35.8	0.00	35.9	35.9	0.00
Drugs for acid related disorders	47.6	47.4	0.00	47.7	47.8	0.00
Drugs for obstructive airway diseases	50.2	40.6	0.19	45.8	45.5	0.01
Immunosuppressants	52.8	50.2	0.05	51.4	51.5	0.00
Lipid modifying agents	34.8	35.9	-0.02	35.6	35.5	0.00
Opioids	41.8	44.3	-0.05	43.5	43.2	0.01
Psycholeptics	39.2	38.4	0.02	39.3	39.2	0.00
Psychostimulants, agents used for adhd and nootropics	6.7	6.5	0.01	6.8	6.7	0.00

S6.2.10. Optum

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff	AZM	AMX	Std. diff
				%	%	
Age group						
15-19	0.3	0.2	0.00	0.2	0.3	0.00
20-24	0.8	0.8	0.00	0.9	1.0	-0.01
25-29	1.5	1.4	0.01	1.5	1.4	0.01
30-34	3.1	2.7	0.02	3.0	2.8	0.01
35-39	4.4	4.2	0.01	4.3	4.4	-0.01
40-44	6.8	6.0	0.03	6.6	6.4	0.01
45-49	8.6	8.6	0.00	8.6	8.9	-0.01
55-59	14.0	13.5	0.01	13.9	13.6	0.01
60-64	13.3	13.2	0.00	13.3	13.0	0.01
65-69	12.1	12.8	-0.02	12.4	12.6	-0.01
70-74	10.2	10.8	-0.02	10.2	10.3	0.00
75-79	7.2	7.8	-0.02	7.2	7.4	-0.01
80-84	4.4	4.8	-0.02	4.4	4.5	-0.01
85-89	1.7	1.9	-0.02	1.8	1.8	0.00
Gender: female	84.9	82.9	0.06	84.0	83.9	0.00
Medical history: General						
Acute respiratory disease	64.9	48.7	0.33	57.7	57.7	0.00
Chronic obstructive lung disease	14.8	11.0	0.11	13.0	13.1	0.00
Crohn's disease	0.7	0.7	0.01	0.8	0.6	0.02
Dementia	1.5	1.9	-0.03	1.7	1.9	-0.02
Depressive disorder	20.7	21.4	-0.02	21.3	21.2	0.00
Diabetes mellitus	20.4	20.7	-0.01	20.4	20.7	-0.01
Gastroesophageal reflux disease	25.6	26.1	-0.01	26.1	25.8	0.01
Gastrointestinal hemorrhage	4.2	4.5	-0.02	4.4	4.5	0.00
Human immunodeficiency virus infection	0.2	0.2	0.00	0.2	0.2	0.00
Hyperlipidemia	46.3	46.7	-0.01	46.4	46.3	0.00
Hypertensive disorder	53.9	55.5	-0.03	54.6	54.8	0.00
Lesion of liver	1.1	1.3	-0.02	1.1	1.3	-0.02
Osteoarthritis	52.5	56.2	-0.07	54.5	54.5	0.00
Pneumonia	10.7	7.2	0.12	9.0	9.0	0.00
Psoriasis	3.3	3.0	0.01	3.2	3.1	0.01
Renal impairment	11.1	12.4	-0.04	11.5	11.7	-0.01
Rheumatoid arthritis	84.5	83.3	0.03	84.0	84.0	0.00
Schizophrenia	0.2	0.2	-0.01	0.2	0.2	0.00
Ulcerative colitis	0.7	0.8	-0.01	0.8	0.8	0.00
Urinary tract infectious disease	17.6	19.3	-0.04	18.6	18.5	0.00
Viral hepatitis C	1.1	1.4	-0.03	1.2	1.3	-0.01
Medical history: Cardiovascular disease						
Atrial fibrillation	4.7	6.0	-0.06	5.2	5.5	-0.01
Cerebrovascular disease	6.5	7.0	-0.02	6.6	6.8	-0.01
Coronary arteriosclerosis	11.4	12.1	-0.02	11.6	11.8	0.00
Heart disease	29.8	31.2	-0.03	30.4	30.6	0.00
Heart failure	7.5	7.4	0.00	7.6	7.4	0.01
Ischemic heart disease	7.0	7.3	-0.01	7.1	7.3	0.00
Peripheral vascular disease	4.9	5.2	-0.02	5.1	5.0	0.01
Pulmonary embolism	1.3	1.4	-0.01	1.3	1.4	0.00
Venous thrombosis	2.5	2.9	-0.02	2.6	2.8	-0.01
Medical history: Neoplasms						
Hematologic neoplasm	1.6	1.5	0.01	1.7	1.5	0.01
Malignant lymphoma	0.9	0.9	0.00	0.9	0.9	0.01
Malignant neoplasm of anorectum	0.1	0.2	-0.02	0.1	0.2	-0.01
Malignant neoplastic disease	11.3	11.9	-0.02	11.4	11.6	-0.01
Malignant tumor of breast	2.7	2.7	0.00	2.6	2.7	0.00
Malignant tumor of colon	0.4	0.4	-0.01	0.3	0.4	-0.01
Malignant tumor of lung	0.6	0.4	0.02	0.5	0.5	-0.01
Malignant tumor of urinary bladder	0.3	0.4	-0.03	0.3	0.4	-0.01
Primary malignant neoplasm of prostate	0.8	0.9	-0.02	0.8	0.8	0.00
Medication use						
Antidepressants	42.5	42.6	0.00	43.0	42.8	0.00
Antiepileptics	27.7	28.2	-0.01	28.4	27.9	0.01
Antiinflammatory and antirheumatic products	44.2	45.7	-0.03	45.5	45.2	0.01
Antineoplastic agents	35.2	33.1	0.04	33.4	34.2	-0.02
Antipsoratics	1.1	1.0	0.01	1.1	1.1	0.01
Antithrombotic agents	13.1	15.4	-0.07	14.0	14.2	0.00
Beta blocking agents	25.8	27.1	-0.03	26.5	26.4	0.00
Drugs for acid related disorders	41.8	41.9	0.00	41.9	41.8	0.00
Drugs for obstructive airway diseases	45.4	36.4	0.18	41.2	41.1	0.00
Immunosuppressants	49.8	47.4	0.05	48.3	48.4	0.00
Lipid modifying agents	32.4	33.2	-0.02	32.6	32.6	0.00
Opioids	41.0	43.3	-0.05	42.7	42.0	0.01
Psycholeptics	35.8	36.3	-0.01	36.5	36.6	0.00
Psychostimulants, agents used for adhd and nootropics	5.2	4.8	0.02	5.3	5.0	0.02

S6.2.11. PanTher

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff			
				%	%	Std. diff
Age group						
15-19	0.2	0.3	-0.02	0.2	0.3	-0.02
20-24	0.9	0.9	0.00	1.1	0.8	0.03
25-29	1.6	1.7	0.00	1.9	1.6	0.02
30-34	2.7	3.1	-0.03	2.9	2.9	0.00
35-39	3.7	4.5	-0.04	4.1	4.1	0.00
40-44	5.3	5.9	-0.03	5.7	6.0	-0.01
45-49	7.1	7.4	-0.01	7.3	7.4	0.00
50-54	10.5	10.5	0.00	10.5	10.3	0.01
55-59	13.1	13.8	-0.02	13.2	13.9	-0.02
60-64	13.7	13.6	0.00	13.9	13.8	0.00
65-69	12.6	12.2	0.01	12.4	12.5	0.00
70-74	10.9	10.5	0.01	10.5	10.6	0.00
75-79	8.6	7.6	0.04	8.2	7.9	0.01
80-84	6.4	6.0	0.02	5.9	5.8	0.00
85-89	2.6	2.1	0.04	2.3	2.0	0.02
Gender: female	82.3	82.1	0.00	82.9	82.7	0.01
Race						
race = Asian	1.1	1.0	0.01	1.0	1.0	0.01
race = Black or African American	10.5	9.4	0.04	10.0	9.4	0.02
race = White	83.4	84.3	-0.02	84.1	84.4	-0.01
Ethnicity						
ethnicity = Hispanic or Latino	4.6	4.4	0.01	4.5	4.5	0.00
Medical history: General						
Acute respiratory disease	57.2	43.2	0.28	52.6	51.8	0.02
Attention deficit hyperactivity disorder	1.0	1.5	-0.04	1.1	1.4	-0.03
Chronic liver disease	3.3	3.4	-0.01	3.4	3.4	0.00
Chronic obstructive lung disease	19.5	11.0	0.24	15.2	15.1	0.00
Crohn's disease	0.6	0.6	0.00	0.7	0.5	0.02
Dementia	2.2	1.9	0.02	1.9	1.9	0.00
Depressive disorder	23.7	23.4	0.01	23.9	23.4	0.01
Diabetes mellitus	19.3	18.3	0.03	18.8	18.4	0.01
Gastroesophageal reflux disease	29.6	28.1	0.03	29.2	28.8	0.01
Human immunodeficiency virus infection	0.2	0.1	0.01	0.2	0.2	0.00
Hyperlipidemia	40.8	38.8	0.04	39.7	39.4	0.01
Hypertensive disorder	51.4	49.7	0.03	50.4	50.4	0.00
Lesion of liver	1.5	1.5	0.00	1.6	1.4	0.01
Obesity	17.5	18.1	-0.02	17.6	17.8	-0.01
Osteoarthritis	41.1	42.2	-0.02	41.4	41.0	0.01
Pneumonia	20.6	7.6	0.38	14.7	12.4	0.07
Psoriasis	2.1	2.1	0.00	2.2	2.1	0.01
Renal impairment	14.7	12.8	0.06	13.2	12.6	0.02
Rheumatoid arthritis	84.8	83.4	0.04	84.0	84.3	-0.01
Schizophrenia	0.3	0.3	-0.01	0.2	0.3	-0.01
Ulcerative colitis	0.5	0.7	-0.03	0.6	0.6	0.00
Urinary tract infectious disease	13.1	14.1	-0.03	13.7	13.2	0.02
Viral hepatitis C	1.3	1.1	0.02	1.3	1.1	0.01
Visual system disorder	21.4	22.6	-0.03	21.5	21.6	0.00
Medical history: Cardiovascular disease						
Atrial fibrillation	7.5	6.9	0.02	6.9	7.1	-0.01
Cerebrovascular disease	5.1	4.5	0.03	4.8	4.5	0.01
Coronary arteriosclerosis	13.4	12.1	0.04	12.5	12.5	0.00
Heart disease	33.3	29.6	0.08	31.1	30.3	0.02
Heart failure	11.3	8.0	0.12	9.4	8.6	0.03
Ischemic heart disease	8.0	6.7	0.05	7.2	7.0	0.01
Pulmonary embolism	1.7	1.8	-0.01	1.7	1.7	0.00
Venous thrombosis	3.3	3.4	-0.01	3.3	3.1	0.01
Medical history: Neoplasms						
Hematologic neoplasm	1.7	1.7	0.00	1.8	1.6	0.01
Malignant lymphoma	0.8	1.0	-0.02	0.8	0.9	-0.02
Malignant neoplasm of anorectum	0.4	0.5	-0.02	0.3	0.4	0.00
Malignant neoplastic disease	11.8	13.3	-0.05	12.2	12.5	-0.01
Malignant tumor of breast	2.5	3.1	-0.03	2.7	2.8	-0.01
Malignant tumor of colon	0.5	0.6	-0.01	0.5	0.5	0.01
Malignant tumor of lung	1.0	0.7	0.04	0.9	0.9	-0.01
Malignant tumor of urinary bladder	0.3	0.4	-0.02	0.3	0.3	-0.01
Primary malignant neoplasm of prostate	0.8	0.8	0.00	0.9	0.7	0.02
Medication use						
Agents acting on the renin-angiotensin system	37.6	36.5	0.02	36.9	36.5	0.01
Antibacterials for systemic use	53.0	51.6	0.03	52.1	50.8	0.03
Antidepressants	47.6	48.1	-0.01	48.1	48.3	0.00
Antiepileptics	33.3	34.7	-0.03	33.8	34.1	0.00
Antiinflammatory and antirheumatic products	47.1	50.6	-0.07	48.8	49.7	-0.02

Antineoplastic agents	39.5	36.8	0.06	38.1	38.6	-0.01
Antithrombotic agents	47.7	44.7	0.06	45.4	44.1	0.03
Beta blocking agents	35.2	35.8	-0.01	35.0	34.9	0.00
Calcium channel blockers	24.0	22.2	0.04	22.9	22.8	0.00
Diuretics	40.3	38.3	0.04	39.3	38.9	0.01
Drugs for acid related disorders	61.8	61.0	0.02	61.0	61.0	0.00
Drugs for obstructive airway diseases	64.7	52.3	0.25	58.6	59.1	-0.01
Drugs used in diabetes	19.7	19.2	0.02	19.1	19.1	0.00
Immunosuppressants	56.0	53.6	0.05	55.1	55.5	-0.01
Lipid modifying agents	37.0	36.1	0.02	36.2	35.9	0.01
Opioids	52.5	53.9	-0.03	52.3	52.2	0.00
Psycholeptics	49.8	49.6	0.00	49.2	49.5	-0.01
Psychostimulants, agents used for adhd and nootropics	5.6	6.6	-0.04	6.0	6.3	-0.01

S6.2.12. SIDIAP

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff	AZM	AMX	Std. diff
				%	%	
Age group						
20-24	<3.8	<0.7	0.09	<2.8	<0.7	0.07
30-34	<3.8	4.1	-0.10	<2.8	4.0	-0.12
35-39	3.8	5.5	-0.08	6.1	5.4	0.03
40-44	6.2	6.3	0.00	3.3	6.1	-0.13
45-49	4.6	6.0	-0.06	5.7	5.8	-0.01
50-54	13.1	8.3	0.16	17.6	8.3	0.28
55-59	15.4	10.3	0.15	17.5	10.5	0.20
60-64	10.8	12.7	-0.06	12.9	12.9	0.00
65-69	7.7	12.2	-0.15	5.0	12.5	-0.27
70-74	12.3	11.1	0.04	10.0	11.0	-0.03
75-79	7.7	8.9	-0.04	4.5	8.6	-0.17
80-84	7.7	8.2	-0.02	9.0	8.3	0.03
85-89	6.2	3.1	0.15	4.0	3.3	0.03
90-94	<3.8	<0.7	0.09	<2.8	<0.7	0.12
Gender: female	80.0	77.6	0.06	79.9	77.9	0.05
Medical history: General						
Acute respiratory disease	26.9	20.1	0.16	29.4	20.6	0.20
Chronic liver disease	<3.8	1.2	-0.04	<2.8	1.2	-0.09
Chronic obstructive lung disease	4.6	2.6	0.11	3.7	2.7	0.05
Dementia	<3.8	0.9	-0.01	<2.8	0.9	-0.06
Depressive disorder	<3.8	4.7	-0.08	<2.8	4.9	-0.11
Diabetes mellitus	<3.8	3.6	-0.13	<2.8	3.5	-0.10
Gastroesophageal reflux disease	<3.8	1.3	0.02	<2.8	1.3	-0.04
Gastrointestinal hemorrhage	5.4	2.0	0.18	5.5	2.1	0.18
Hyperlipidemia	4.6	6.4	-0.08	3.8	6.3	-0.12
Hypertensive disorder	6.2	7.1	-0.04	6.3	7.0	-0.03
Obesity	7.7	8.0	-0.01	9.8	7.9	0.07
Osteoarthritis	4.6	3.8	0.04	5.2	3.7	0.07
Pneumonia	<3.8	3.4	-0.06	<2.8	3.4	-0.14
Renal impairment	<3.8	2.9	-0.04	<2.8	2.8	-0.03
Rheumatoid arthritis	20.8	29.3	-0.20	22.9	28.8	-0.13
Urinary tract infectious disease	8.5	10.8	-0.08	5.5	10.8	-0.19
Viral hepatitis C	<3.8	<0.7	0.02	<2.8	<0.7	-0.04
Visual system disorder	17.7	20.8	-0.08	14.6	20.9	-0.16
Medical history: Cardiovascular disease						
Cerebrovascular disease	4.6	4.1	0.03	5.5	4.3	0.06
Heart disease	6.9	10.1	-0.11	6.9	10.0	-0.11
Heart failure	<3.8	1.5	-0.07	<2.8	1.5	-0.10
Ischemic heart disease	<3.8	3.4	-0.02	<2.8	3.4	-0.09
Peripheral vascular disease	8.5	6.4	0.08	5.8	6.4	-0.02
Venous thrombosis	<3.8	<0.7	0.04	<2.8	<0.7	-0.01
Medical history: Neoplasms						
Malignant neoplastic disease	<3.8	4.7	-0.13	<2.8	4.8	-0.18
Medication use						
Agents acting on the renin-angiotensin system	26.9	31.2	-0.09	21.0	31.1	-0.23
Antibacterials for systemic use	27.7	27.1	0.01	23.2	27.6	-0.10
Antidepressants	30.8	28.9	0.04	33.8	29.2	0.10
Antiepileptics	16.2	14.0	0.06	14.3	14.2	0.00
Antiinflammatory and antirheumatic products	62.3	64.4	-0.04	55.1	64.6	-0.20
Antineoplastic agents	27.7	17.6	0.24	18.1	19.1	-0.03
Antipsoriatics	<3.8	1.2	-0.04	<2.8	1.1	0.08
Antithrombotic agents	20.8	25.2	-0.11	22.5	25.0	-0.06
Beta blocking agents	15.4	15.0	0.01	15.3	14.9	0.01
Calcium channel blockers	9.2	9.8	-0.02	10.1	9.5	0.02
Diuretics	30.0	29.3	0.02	30.3	29.3	0.02
Drugs for acid related disorders	89.2	83.2	0.18	82.0	83.9	-0.05
Drugs for obstructive airway diseases	48.5	38.9	0.19	34.3	41.2	-0.14
Drugs used in diabetes	11.5	14.7	-0.09	11.8	14.5	-0.08
Immunosuppressants	37.7	29.4	0.18	26.9	30.8	-0.08
Lipid modifying agents	26.9	27.4	-0.01	27.1	27.4	-0.01
Opioids	16.2	22.2	-0.15	13.2	22.5	-0.24
Psycholeptics	43.8	41.3	0.05	41.1	41.6	-0.01
Psychostimulants, agents used for adhd and nootropics	5.4	2.5	0.15	3.6	2.5	0.06

S6.2.13. VA

Characteristic	Before stratification			After stratification		
	AZM	AMX	Std. diff	AZM	AMX	Std. diff
				%	%	
Age group						
20-24	<0.1	0.1	0.00	<0.1	0.1	0.00
25-29	0.4	0.2	0.03	0.4	0.3	0.03
30-34	1.0	1.0	0.00	1.2	1.1	0.02
35-39	1.3	1.5	-0.02	1.3	1.4	-0.01
40-44	2.5	2.8	-0.02	3.1	2.7	0.02
45-49	4.9	5.5	-0.03	5.9	5.4	0.02
50-54	8.8	9.1	-0.01	9.6	9.0	0.02
55-59	13.4	14.6	-0.03	12.9	14.3	-0.04
60-64	17.6	17.2	0.01	17.1	18.0	-0.02
65-69	18.2	17.5	0.02	17.2	17.0	0.00
70-74	13.7	13.9	-0.01	14.5	14.2	0.01
75-79	8.9	8.6	0.01	8.2	8.6	-0.01
80-84	5.7	5.4	0.02	5.4	5.2	0.00
85-89	2.9	2.0	0.05	2.5	2.0	0.03
90-94	0.6	0.5	0.02	0.5	0.6	-0.01
95-99	<0.1	<0.1	0.01	<0.1	<0.1	0.00
Gender: female	18.6	16.7	0.05	18.7	17.5	0.03
Race						
race = Asian	0.4	0.3	0.01	0.3	0.3	0.01
race = Black or African American	16.5	17.8	-0.04	17.0	17.7	-0.02
race = White	74.0	71.1	0.06	73.2	71.8	0.03
race = Unknown	7.7	8.9	-0.04	8.0	8.4	-0.02
race = Native Hawaiian or Other Pacific Islander	0.6	0.8	-0.02	0.7	0.8	-0.01
race = American Indian or Alaska Native	0.8	1.1	-0.02	0.8	1.0	-0.02
Ethnicity						
ethnicity = Hispanic or Latino	4.7	5.2	-0.02	3.9	4.8	-0.04
ethnicity = Not Hispanic or Latino	91.1	89.3	0.06	91.6	89.9	0.06
Medical history: General						
Acute respiratory disease	48.2	29.9	0.38	40.3	40.4	0.00
Attention deficit hyperactivity disorder	0.4	0.6	-0.04	0.4	0.6	-0.03
Chronic liver disease	3.7	4.6	-0.04	3.7	4.2	-0.03
Chronic obstructive lung disease	33.7	22.5	0.25	26.1	27.6	-0.03
Crohn's disease	0.4	0.4	0.00	0.4	0.3	0.02
Depressive disorder	28.4	27.9	0.01	29.5	28.5	0.02
Diabetes mellitus	27.4	29.5	-0.05	28.0	28.2	0.00
Gastroesophageal reflux disease	7.2	8.0	-0.03	7.4	7.7	-0.01
Gastrointestinal hemorrhage	3.2	3.7	-0.03	3.8	3.2	0.03
Human immunodeficiency virus infection	0.3	0.4	-0.02	0.3	0.4	-0.02
Hyperlipidemia	48.8	46.6	0.04	47.0	47.0	0.00
Hypertensive disorder	64.7	63.3	0.03	63.8	63.3	0.01
Lesion of liver	1.5	1.9	-0.03	1.7	1.9	-0.02
Obesity	18.4	18.4	0.00	17.8	18.5	-0.02
Osteoarthritis	42.8	43.8	-0.02	42.6	42.9	0.00
Pneumonia	18.2	7.9	0.31	12.9	11.4	0.04
Psoriasis	2.4	2.5	0.00	2.5	2.2	0.02
Renal impairment	11.9	11.8	0.00	11.4	11.2	0.01
Rheumatoid arthritis	87.3	86.0	0.04	86.0	86.7	-0.02
Schizophrenia	0.7	1.1	-0.04	1.1	1.1	0.00
Ulcerative colitis	0.4	0.5	-0.02	0.5	0.4	0.01
Urinary tract infectious disease	5.9	8.3	-0.09	7.4	7.2	0.01
Visual system disorder	65.7	65.2	0.01	65.2	64.9	0.01
Medical history: Cardiovascular disease						
Atrial fibrillation	7.4	8.3	-0.03	7.9	8.1	-0.01
Cerebrovascular disease	6.1	5.6	0.02	6.1	5.4	0.03
Coronary arteriosclerosis	19.5	18.3	0.03	18.6	18.0	0.02
Heart disease	39.8	38.2	0.03	38.7	37.7	0.02
Heart failure	11.8	9.9	0.06	11.3	10.2	0.04
Ischemic heart disease	15.7	15.2	0.01	15.2	15.1	0.00
Peripheral vascular disease	17.6	18.4	-0.02	18.1	18.0	0.00
Pulmonary embolism	1.5	1.6	-0.01	1.7	1.5	0.02
Venous thrombosis	2.3	2.5	-0.01	2.4	2.2	0.01
Medical history: Neoplasms						
Hematologic neoplasm	1.8	2.2	-0.03	1.9	2.2	-0.02
Malignant lymphoma	1.2	1.3	-0.01	1.2	1.2	0.00
Malignant neoplasm of anorectum	0.2	0.2	0.00	0.1	0.1	0.00
Malignant neoplastic disease	16.3	16.4	0.00	17.1	16.0	0.03
Malignant tumor of breast	0.8	0.4	0.06	0.8	0.4	0.05
Malignant tumor of colon	0.6	0.8	-0.03	0.5	0.7	-0.03
Malignant tumor of lung	1.1	1.0	0.00	1.0	1.2	-0.02
Malignant tumor of urinary bladder	1.2	1.1	0.00	1.3	1.1	0.02
Primary malignant neoplasm of prostate	4.6	5.0	-0.02	5.0	4.9	0.01
Medication use						

Agents acting on the renin-angiotensin system	45.4	45.3	0.00	44.8	44.9	0.00
Antiepileptics	29.8	31.3	-0.03	32.1	30.4	0.04
Antinflammatory and antirheumatic products	49.5	51.7	-0.04	51.6	51.5	0.00
Antineoplastic agents	45.5	39.0	0.13	41.5	42.1	-0.01
Antipsoriatrics	1.8	1.6	0.02	2.2	1.4	0.06
Antithrombotic agents	45.3	45.3	0.00	45.7	43.9	0.04
Beta blocking agents	40.4	41.4	-0.02	41.0	40.2	0.02
Calcium channel blockers	27.4	27.6	-0.01	28.2	27.0	0.03
Diuretics	42.4	41.4	0.02	42.3	41.3	0.02
Drugs for acid related disorders	71.1	70.4	0.01	71.1	70.3	0.02
Drugs for obstructive airway diseases	57.5	41.7	0.32	48.3	49.0	-0.01
Drugs used in diabetes	23.1	25.1	-0.05	24.4	23.9	0.01
Immunosuppressants	58.8	52.8	0.12	54.7	55.5	-0.02
Lipid modifying agents	51.9	49.9	0.04	50.4	49.7	0.01
Opioids	43.7	46.6	-0.06	45.3	44.1	0.02
Psycholeptics	35.3	36.3	-0.02	36.2	35.7	0.01
Psychostimulants, agents used for adhd and nootropics	2.7	2.9	-0.02	2.9	2.9	0.00

S7. Patient counts, events, incident rates

After-stratification patient counts, event counts, and incidence rates per 1,000 person-years are reported below for hydroxychloroquine vs sulfasalazine and hydroxychloroquine+azithromycin vs hydroxychloroquine+amoxicillin during 30-day and on-treatment follow-up periods.

Comparison	Outcome	Database	30-day follow-up						On-treatment follow-up					
			Patients		Events		IR		Patients		Events		IR	
			T	C	T	C	T	C	T	C	T	C	T	C
All-cause mortality		CPRD	9,127	11,398	6	5	8.03	5.35	9,127	11,398	253	386	14.02	14.56
		IMRD	8,851	8,460	<5	6	<6.91	8.66	8,851	8,460	214	241	12.32	12.72
		Optum	51,280	17,389	20	10	4.81	7.09	51,280	17,389	527	66	9.88	5.29
		VA	32,028	14,349	45	17	17.13	14.45	32,028	14,349	1,356	327	24.51	18.65
		Meta-analysis	101,286	51,596	<76	38	<9.20	9.02						
Myocardial infarction		CCAE	66,630	22,374	29	11	5.36	6.05	66,630	22,374	240	48	3.64	3.28
		MDCD	8,079	2,196	13	5	19.75	27.98	8,079	2,196	83	14	14.32	11.39
		MDCR	15,827	5,190	26	10	20.17	23.68	15,827	5,190	287	70	15.93	17.55
		OpenClaims	620,751	183,482	369	89	7.24	5.91	620,751	183,482	5,396	956	6.25	5.57
		Optum	51,244	17,380	51	20	12.27	14.19	51,244	17,380	517	121	9.79	9.81
HCQ vs SSZ	Cardiovascular events	PanTher	78,424	21,885	59	12	9.29	6.77						
		VA	32,009	14,342	30	9	11.43	7.65	32,009	14,342	395	137	7.22	7.89
		Meta-analysis	872,964	266,849	577	156	8.08	7.14	794,540	244,964	6,918	1,346	6.52	6.08
		CCAE	66,533	22,357	97	36	17.96	19.83	66,533	22,357	839	197	12.86	13.6
		MDCD	8,041	2,186	35	11	53.5	61.95	8,041	2,186	388	78	70.54	66.08
Cardiac arrhythmia		MDCR	15,759	5,167	117	39	91.39	93.05	15,759	5,167	1,295	310	76.12	82.67
		OpenClaims	619,493	183,209	1,636	470	32.2	31.28	619,493	183,209	22,657	4,394	26.94	26.16
		Optum	51,095	17,340	215	76	51.96	54.11	51,095	17,340	2,232	490	43.8	40.92
		PanTher	77,825	21,752	294	70	46.7	39.79						
		VA	31,913	14,300	120	46	45.92	39.28	31,913	14,300	1,577	546	29.84	32.57
	Bradycardia	Meta-analysis	870,659	266,311	2,514	748	35.31	34.35	792,834	244,559	28,988	6,015	28.07	27.83
		AmbEMR	56,743	15,208	147	43	31.61	34.5	56,743	15,208	467	163	25.54	29.19
		CCAE	66,430	22,337	153	58	28.38	32	66,430	22,337	1,301	348	20.3	24.42
		CPRD	9,120	11,390	7	14	9.38	15	9,120	11,390	113	180	6.37	6.95
		DAGermany	3,883	5,040	<5	5	<15.70	12.09	3,883	5,040	22	38	8.68	10.82
		IMRD	8,847	8,452	8	12	11.06	17.35	8,847	8,452	101	123	5.9	6.64
		MDCD	8,051	2,191	37	10	56.48	56.15	8,051	2,191	232	40	41.47	33.06
		MDCR	15,763	5,165	73	24	56.93	57.2	15,763	5,165	726	183	42.35	48.33
		OpenClaims	619,285	183,147	1,505	490	29.63	32.62	619,285	183,147	19,445	4,134	23.37	24.86
		Optum	51,069	17,320	159	61	38.43	43.46	51,069	17,320	1,557	461	30.64	39.13
		PanTher	77,008	21,581	472	115	75.89	65.97						
		VA	31,766	14,275	107	45	41.12	38.48	31,766	14,275	1,391	508	26.84	30.95
		Meta-analysis	947,965	306,106	<2,673	877	<34.48	35.03						
		AmbEMR	57,594	15,350	17	<5	3.6	<3.97	57,594	15,350	60	15	3.2	2.63
		CCAE	66,640	22,373	5	<5	0.92	<2.75	66,640	22,373	69	13	1.04	0.89

	CPRD							9,127	11,398	<5	<5	<0.28	<0.19
	IMRD							8,852	8,460	<5	<5	<0.29	<0.26
	MDCD	8,085	2,197	6	<5	9.1	<27.96	8,085	2,197	30	<5	5.14	<4.02
	MDCR							15,830	5,190	106	25	5.84	6.21
	OpenClaims	620,919	183,510	155	56	3.04	3.72	620,919	183,510	2,791	507	3.22	2.95
	Optum	51,259	17,386	23	<5	5.53	<3.54	51,259	17,386	256	55	4.83	4.43
	PanTher	78,425	21,911	62	16	9.76	9.02						
	VA	32,018	14,345	9	<5	3.43	<4.25	32,018	14,345	231	62	4.21	3.56
	Meta-analysis	914,940	277,072	277	<97	3.7	<4.28	870,324	280,209	<3,553	<692	<3.18	<2.53
Transient ischemic attack	CCAE	66,617	22,372	23	6	4.25	3.3	66,617	22,372	187	35	2.84	2.39
	MDCD	8,078	2,198	7	<5	10.63	<27.96	8,078	2,198	58	10	9.97	8.08
	MDCR	15,821	5,187	17	7	13.19	16.59	15,821	5,187	202	47	11.18	11.74
	OpenClaims	620,812	183,511	261	56	5.12	3.72	620,812	183,511	3,381	615	3.91	3.58
	Optum	51,235	17,377	38	9	9.14	6.38	51,235	17,377	375	75	7.09	6.06
	PanTher	78,520	21,921	26	7	4.09	3.94						
	VA	32,010	14,346	10	5	3.81	4.25	32,010	14,346	153	49	2.78	2.81
	Meta-analysis	873,093	266,912	382	<95	5.34	<4.35	794,573	244,991	4,356	831	4.1	3.75
Stroke	CCAE	66,619	22,374	26	8	4.8	4.4	66,619	22,374	221	41	3.35	2.81
	MDCD	8,073	2,196	13	<5	19.76	<27.98	8,073	2,196	103	15	17.82	12.13
	MDCR	15,825	5,186	29	9	22.5	21.34	15,825	5,186	300	66	16.64	16.53
	OpenClaims	620,748	183,482	383	98	7.52	6.51	620,748	183,482	5,413	1,122	6.27	6.54
	Optum	51,239	17,376	41	12	9.86	8.51	51,239	17,376	562	106	10.66	8.56
	PanTher	78,442	21,897	52	10	8.18	5.64						
	VA	32,008	14,341	19	8	7.24	6.8	32,008	14,341	241	70	4.38	4.01
	Meta-analysis	872,954	266,852	563	<150	7.88	<6.87						
Venous thromboembolism	AmbEMR	57,262	15,281	52	17	11.07	13.56	57,262	15,281	201	68	10.81	12.05
	CCAE	66,528	22,358	70	23	12.96	12.67	66,528	22,358	650	152	9.96	10.48
	CPRD	9,118	11,390	<5	11	<6.70	11.79	9,118	11,390	130	177	7.35	6.79
	DAGermany	3,881	5,033	<5	6	<15.70	14.53	3,881	5,033	34	47	13.56	13.43
	IMRD	8,841	8,455	5	10	6.92	14.45	8,841	8,455	116	123	6.79	6.59
	MDCD	8,059	2,196	24	<5	36.57	<27.98	8,059	2,196	157	19	27.6	15.47
	MDCR	15,780	5,176	41	8	31.9	18.99	15,780	5,176	442	89	24.86	22.63
	OpenClaims	620,093	183,330	788	237	15.48	15.75	620,093	183,330	10,006	2,001	11.74	11.77
Gastrointestinal bleeding	Optum	51,153	17,355	104	31	25.08	22.03	51,153	17,355	949	207	18.23	16.87
	PanTher	78,092	21,804	241	52	38.15	29.47						
	VA	31,962	14,328	42	22	16.03	18.73	31,962	14,328	583	208	10.76	12.09
	Meta-analysis	950,769	306,706	<1,377	<422	<17.70	<16.81	872,677	284,902	13,268	3,091	12.03	11.32
	CCAE	66,621	22,357	40	12	7.39	6.61	66,621	22,357	332	54	5.05	3.69
	MDCD	8,071	2,191	16	<5	24.33	<28.05	8,071	2,191	109	13	18.9	10.51
	MDCR	15,813	5,177	31	7	24.06	16.62	15,813	5,177	350	62	19.49	15.49
	OpenClaims	620,631	183,371	438	126	8.6	8.37	620,631	183,371	6,086	1,108	7.06	6.46
	Optum	51,218	17,345	68	13	16.37	9.24	51,218	17,345	658	118	12.51	9.53
	PanTher	78,411	21,890	78	18	12.28	10.15						
	VA	31,993	14,334	26	16	9.91	13.62	31,993	14,334	390	143	7.12	8.23
	Meta-analysis	872,758	266,665	697	<197	9.76	<9.03						

Acute rel failure	CCAE	66,584	22,362	72	27	13.32	14.87	66,584	22,362	526	96	8.01	6.59
	MDCD	8,051	2,189	41	13	62.61	73.1	8,051	2,189	256	44	45.23	36.48
	MDCR	15,797	5,181	60	17	46.67	40.37	15,797	5,181	608	133	34.22	33.69
	OpenClaims	620,101	183,354	1,061	308	20.85	20.47	620,101	183,354	13,812	2,404	16.18	14.1
	Optum	51,166	17,353	163	54	39.32	38.39	51,166	17,353	1,377	298	26.47	24.32
	PanTher	78,010	21,797	186	42	29.45	23.81						
	VA	31,947	14,317	102	35	38.98	29.84	31,947	14,317	1,214	307	22.63	17.85
	Meta-analysis	871,656	266,553	1,685	496	23.63	22.75	793,646	244,756	17,793	3,282	16.97	14.94
End stage rel disease	AmbEMR							57,647	15,355	12	<5	0.64	<0.88
	CCAE	66,641	22,378	<5	<5	<0.92	<2.75	66,641	22,378	48	8	0.73	0.55
	MDCD							8,087	2,198	15	<5	2.56	<4.01
	MDCR	15,838	5,191	<5	<5	<3.87	<11.83	15,838	5,191	56	7	3.07	1.73
	OpenClaims	621,009	183,543	70	8	1.37	0.53	621,009	183,543	1,298	174	1.49	1.01
	Optum	51,271	17,389	7	<5	1.68	<3.54	51,271	17,389	118	19	2.22	1.52
	PanTher	78,526	21,924	27	<5	4.24	<2.82						
	VA	32,020	14,348	5	<5	1.9	<4.25	32,020	14,348	86	27	1.56	1.54
Hepatic failure	Meta-analysis	865,305	264,773	<119	<33	<1.68	<1.52	852,513	260,402	1,633	<245	1.5	<1.07
	CCAE	66,638	22,378	6	<5	1.11	<2.75	66,638	22,378	50	11	0.76	0.75
	DAGermany							3,887	5,047	<5	<5	<1.95	<1.40
	MDCD	8,085	2,198	<5	<5	<7.58	<27.95	8,085	2,198	25	6	4.26	4.82
	MDCR							15,841	5,189	32	5	1.75	1.23
	OpenClaims	621,042	183,551	42	23	0.82	1.53	621,042	183,551	729	151	0.84	0.87
	Optum	51,267	17,387	13	<5	3.13	<3.54	51,267	17,387	102	26	1.92	2.09
	PanTher	78,529	21,916	32	9	5.03	5.07						
Acute pancreatitis	VA	32,025	14,348	5	<5	1.9	<4.25	32,025	14,348	61	14	1.1	0.8
	Meta-analysis	857,586	261,778	<103	<52	<1.47	<2.43	798,785	250,098	<1,004	<218	<0.94	<0.96
	CCAE	66,637	22,374	22	7	4.06	3.85	66,637	22,374	143	34	2.17	2.32
	MDCD	8,077	2,196	10	<5	15.19	<27.97	8,077	2,196	55	8	9.47	6.45
	MDCR	15,833	5,188	6	<5	4.65	<11.84	15,833	5,188	62	15	3.4	3.7
	OpenClaims	620,956	183,525	155	50	3.04	3.32	620,956	183,525	1,881	390	2.17	2.26
	Optum	51,259	17,384	21	9	5.05	6.38	51,259	17,384	171	50	3.22	4.02
	PanTher	78,522	21,921	21	5	3.3	2.82						
All-cause mortality	VA	32,023	14,347	12	<5	4.57	<4.25	32,023	14,347	106	46	1.92	2.63
	Meta-analysis	873,307	266,935	247	<86	3.45	<3.94	794,785	245,014	2,418	543	2.27	2.44
	Optum	23,597	24,521	17	17	8.88	8.55	23,597	24,521	268	276	15.56	18.85
	VA	6,234	8,005	91	52	179.23	79.42	6,234	8,005	550	518	51.16	45.97
	Meta-analysis	29,831	32,526	108	69	44.58	26.12	29,831	32,526	818	794	29.24	30.64
	CCAE	32,610	32,507	13	11	4.92	4.17	32,610	32,507	117	94	4.33	4.33
	MDCD	3,803	3,808	<5	6	<16.21	19.4	3,803	3,808	29	27	11.46	13.46
	MDCR	8,119	9,254	16	9	24.33	11.96	8,119	9,254	166	140	20.41	17.34
AZM vs AMX	OpenClaims	216,028	232,938	182	173	10.26	9.05	216,028	232,938	2,065	1,732	8.11	7.94
	Optum	23,565	24,484	30	29	15.7	14.62	23,565	24,484	179	147	10.6	10.19
	PanTher	18,477	16,424	26	20	17.35	15.01						
	VA	6,203	7,978	33	19	65.53	29.15	6,203	7,978	154	127	14.79	11.59

	Meta-analysis	308,805	327,393	<305	267	<12.08	9.97	290,328	310,969	2,710	2,267	8.48	8.24
Cardiovascular events	CCAE	32,540	32,453	68	57	25.8	21.67	32,540	32,453	467	351	17.73	16.54
	MDCD	3,759	3,781	31	30	102.07	97.98	3,759	3,781	157	122	69.38	67.74
	MDCR	8,030	9,188	93	59	143.76	79.2	8,030	9,188	657	573	92.6	78.6
	OpenClaims	215,278	232,274	901	784	51.08	41.18	215,278	232,274	7,835	6,884	32.54	33.34
	Optum	23,434	24,361	147	137	77.54	69.59	23,434	24,361	723	669	45.56	49.38
	PanTher	17,963	16,221	123	80	84.71	60.92						
	VA	6,047	7,866	183	87	378.81	136.03	6,047	7,866	544	445	58.44	44.08
	Meta-analysis						289,088	309,923	10,383	9,044	34.42	34.73	
	AmbEMR	13,076	11,977	27	25	25.18	25.46	13,076	11,977	116	90	20.7	18.79
Cardiac arrhythmia	CCAE	32,510	32,423	113	67	42.94	25.5	32,510	32,423	711	486	28.53	23.76
	MDCD	3,781	3,787	14	18	45.72	58.59	3,781	3,787	88	77	37.42	41.8
	MDCR	8,084	9,210	45	48	68.86	64.24	8,084	9,210	354	361	47.87	49.98
	OpenClaims	215,473	232,391	568	589	32.15	30.91	215,473	232,391	5,724	4,989	23.82	24.22
	Optum	23,475	24,403	90	76	47.34	38.49	23,475	24,403	556	482	35.52	36.2
	PanTher	18,022	16,138	153	111	105.13	85.09						
	VA	6,168	7,935	58	47	116.1	72.64	6,168	7,935	297	289	31.93	29.25
Bradycardia	AmbEMR						13,193	12,080	14	14	2.36	2.81	
	CCAE	32,619	32,516	<5	<5	<1.89	<1.90	32,619	32,516	43	50	1.58	2.29
	MDCD	3,807	3,810	<5	<5	<16.19	<16.15	3,807	3,810	19	11	7.41	5.42
	MDCR	8,124	9,268	5	<5	7.59	<6.63	8,124	9,268	70	86	8.51	10.63
	OpenClaims	216,124	233,035	72	78	4.06	4.08	216,124	233,035	1,115	1,069	4.35	4.88
	Optum	23,580	24,509	10	17	5.23	8.56	23,580	24,509	108	96	6.34	6.61
	PanTher	18,546	16,432	15	23	9.97	17.26						
Transient ischemic attack	VA	6,227	8,000	<5	<5	<9.86	<7.64	6,227	8,000	64	60	6.1	5.42
	Meta-analysis	309,027	327,570	<117	<138	<4.63	<5.15	303,674	323,218	1,433	1,386	4.37	4.93
	CCAE	32,609	32,505	5	11	1.89	4.17	32,609	32,505	111	77	4.11	3.55
	MDCD	3,802	3,808	7	<5	22.72	<16.16	3,802	3,808	27	15	10.62	7.51
	MDCR	8,121	9,259	9	10	13.67	13.28	8,121	9,259	118	102	14.53	12.6
	OpenClaims	216,102	232,985	96	102	5.41	5.33	216,102	232,985	1,306	1,102	5.11	5.04
	Optum	23,577	24,501	20	24	10.46	12.09	23,577	24,501	122	120	7.18	8.32
Stroke	PanTher	18,563	16,456	9	5	5.98	3.74						
	VA	6,231	8,000	12	5	23.67	7.64	6,231	8,000	54	41	5.11	3.69
	Meta-analysis	309,005	327,514	158	<162	6.25	<6.05	290,442	311,058	1,738	1,457	5.42	5.28
	CCAE	32,609	32,508	12	11	4.54	4.17	32,609	32,508	131	94	4.85	4.33
	MDCD	3,803	3,808	7	7	22.71	22.63	3,803	3,808	36	29	14.16	14.55
	MDCR	8,118	9,257	17	13	25.85	17.27	8,118	9,257	156	173	19.33	21.57
	OpenClaims	216,089	232,948	155	159	8.74	8.32	216,089	232,948	2,063	1,858	8.12	8.55
Venous thromboembolism	Optum	23,572	24,490	33	34	17.26	17.14	23,572	24,490	174	157	10.28	10.87
	PanTher	18,538	16,433	25	9	16.63	6.75						
	VA	6,215	7,995	10	15	19.77	22.96	6,215	7,995	76	83	7.23	7.5
	Meta-analysis	308,944	327,439	259	248	10.25	9.26	290,406	311,006	2,636	2,394	8.26	8.72
	AmbEMR	13,133	12,024	11	19	10.21	19.27	13,133	12,024	51	57	8.71	11.72
	CCAE	32,559	32,467	40	40	15.16	15.2	32,559	32,467	339	227	12.8	10.59
	MDCD	3,793	3,797	8	18	26.03	58.49	3,793	3,797	81	61	33.31	31.49

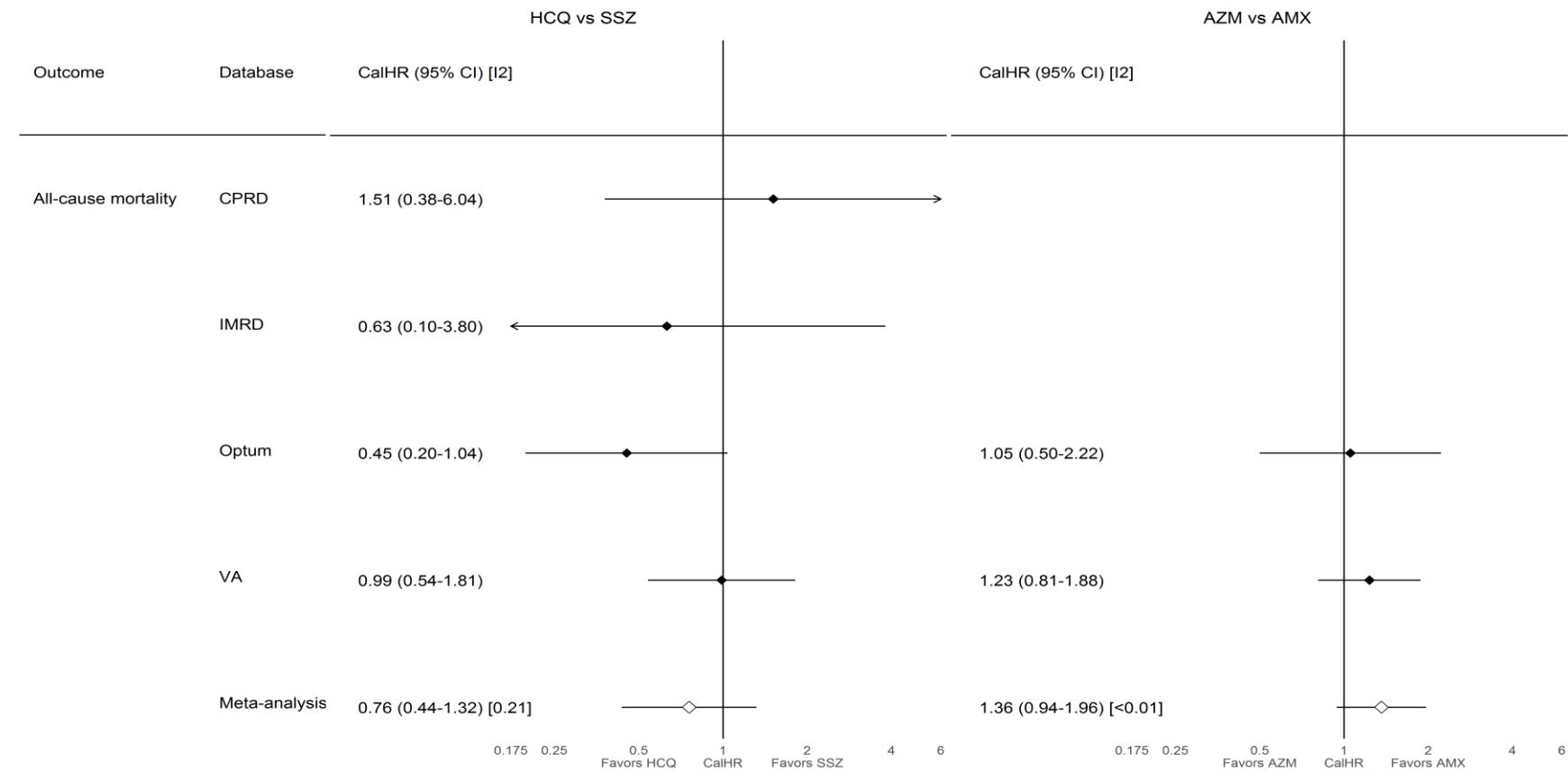
	MDCR	8,104	9,239	23	24	35.04	31.96	8,104	9,239	228	204	28.93	26.03
	OpenClaims	215,805	232,676	320	357	18.07	18.7	215,805	232,676	3,662	3,137	14.74	14.73
	Optum	23,540	24,459	54	63	28.3	31.82	23,540	24,459	330	303	20.08	21.49
	Panther	18,394	16,335	112	57	75.28	43.08						
	VA	6,203	7,977	32	23	63.53	35.31	6,203	7,977	175	165	17.32	15.45
	Meta-analysis	321,531	338,974	600	601	22.82	21.68	303,137	322,639	4,866	4,154	15.32	15.17
Gastrointestinal bleeding	CCAE	32,609	32,486	20	31	7.56	11.77	32,609	32,486	137	128	5.08	5.9
	MDCD	3,805	3,797	8	11	25.93	35.67	3,805	3,797	58	35	23.17	17.82
	MDCR	8,118	9,231	16	28	24.33	37.34	8,118	9,231	172	170	21.23	21.34
	OpenClaims	216,032	232,795	213	220	12.01	11.52	216,032	232,795	2,245	2,009	8.85	9.26
	Optum	23,568	24,453	39	37	20.41	18.68	23,568	24,453	227	189	13.45	13.14
	Panther	18,530	16,391	37	22	24.62	16.54						
	VA	6,211	7,952	31	31	61.43	47.76	6,211	7,952	122	125	11.67	11.44
	Meta-analysis	308,873	327,105	364	380	14.41	14.2	290,343	310,714	2,961	2,656	9.3	9.69
Acute rel failure	CCAE	32,576	32,451	50	36	18.94	13.68	32,576	32,451	286	220	10.67	10.23
	MDCD	3,774	3,789	21	27	68.81	87.98	3,774	3,789	110	77	46.36	40.34
	MDCR	8,091	9,224	47	31	71.85	41.38	8,091	9,224	348	311	44.2	40.07
	OpenClaims	215,716	232,429	500	603	28.26	31.64	215,716	232,429	4,977	4,565	20.04	21.49
	Optum	23,534	24,413	104	87	54.57	44.05	23,534	24,413	476	444	28.9	31.72
	Panther	18,134	16,262	86	70	58.59	53.16						
	VA	6,133	7,907	146	117	296.69	182.62	6,133	7,907	416	410	42.7	39.97
	Meta-analysis							289,824	310,213	6,613	6,027	21.22	22.5
End stage rel disease	AmbEMR							13,197	12,079	7	5	1.18	1
	CCAE	32,620	32,518	<5	<5	<1.89	<1.90	32,620	32,518	30	20	1.1	0.91
	MDCD	3,806	3,809	<5	<5	<16.20	<16.15	3,806	3,809	18	10	6.96	4.96
	MDCR	8,130	9,270	7	<5	10.62	<6.63	8,130	9,270	23	28	2.75	3.4
	OpenClaims	216,166	233,078	36	41	2.03	2.14	216,166	233,078	558	507	2.16	2.3
	Optum	23,594	24,521	<5	6	<2.61	3.02	23,594	24,521	31	36	1.8	2.46
	Panther	18,557	16,465	9	5	5.98	3.74						
	VA	6,232	8,003	8	<5	15.77	<7.64	6,232	8,003	37	38	3.48	3.39
Hepatic failure	Meta-analysis	309,105	327,664	<75	<72	<2.97	<2.69	303,745	323,278	704	644	2.13	2.27
	CCAE	32,621	32,519	<5	5	<1.89	1.9	32,621	32,519	30	28	1.1	1.28
	MDCD	3,807	3,809	<5	<5	<16.19	<16.15	3,807	3,809	6	6	2.3	2.94
	MDCR	8,130	9,269	<5	<5	<7.58	<6.63	8,130	9,269	18	15	2.15	1.81
	OpenClaims	216,181	233,088	22	27	1.24	1.41	216,181	233,088	306	311	1.18	1.41
	Optum	23,592	24,516	<5	<5	<2.61	<2.52	23,592	24,516	38	27	2.2	1.84
	Panther	18,548	16,466	15	11	9.97	8.23						
	VA	6,233	8,005	6	<5	11.82	<7.64	6,233	8,005	26	19	2.42	1.69
Acute pancreatitis	Meta-analysis	309,112	327,672	<63	<63	<2.49	<2.35	290,564	311,206	424	406	1.31	1.45
	CCAE	32,611	32,513	6	8	2.27	3.03	32,611	32,513	70	55	2.58	2.52
	MDCD	3,800	3,808	<5	5	<16.22	16.16	3,800	3,808	23	21	9.06	10.48
	MDCR	8,129	9,268	<5	<5	<7.59	<6.63	8,129	9,268	32	32	3.84	3.89
	OpenClaims	216,145	232,998	64	80	3.61	4.18	216,145	232,998	713	595	2.77	2.7
	Optum	23,590	24,511	11	10	5.75	5.03	23,590	24,511	62	49	3.62	3.36
	Panther	18,572	16,463	7	9	4.65	6.74						

VA Meta- analysis	6,232	7,995	7	6	13.8	9.18	6,232	7,995	39	41	3.68	3.68
	309,079	327,556	<105	<123	<4.15	<4.59	290,507	311,093	939	793	2.91	2.85

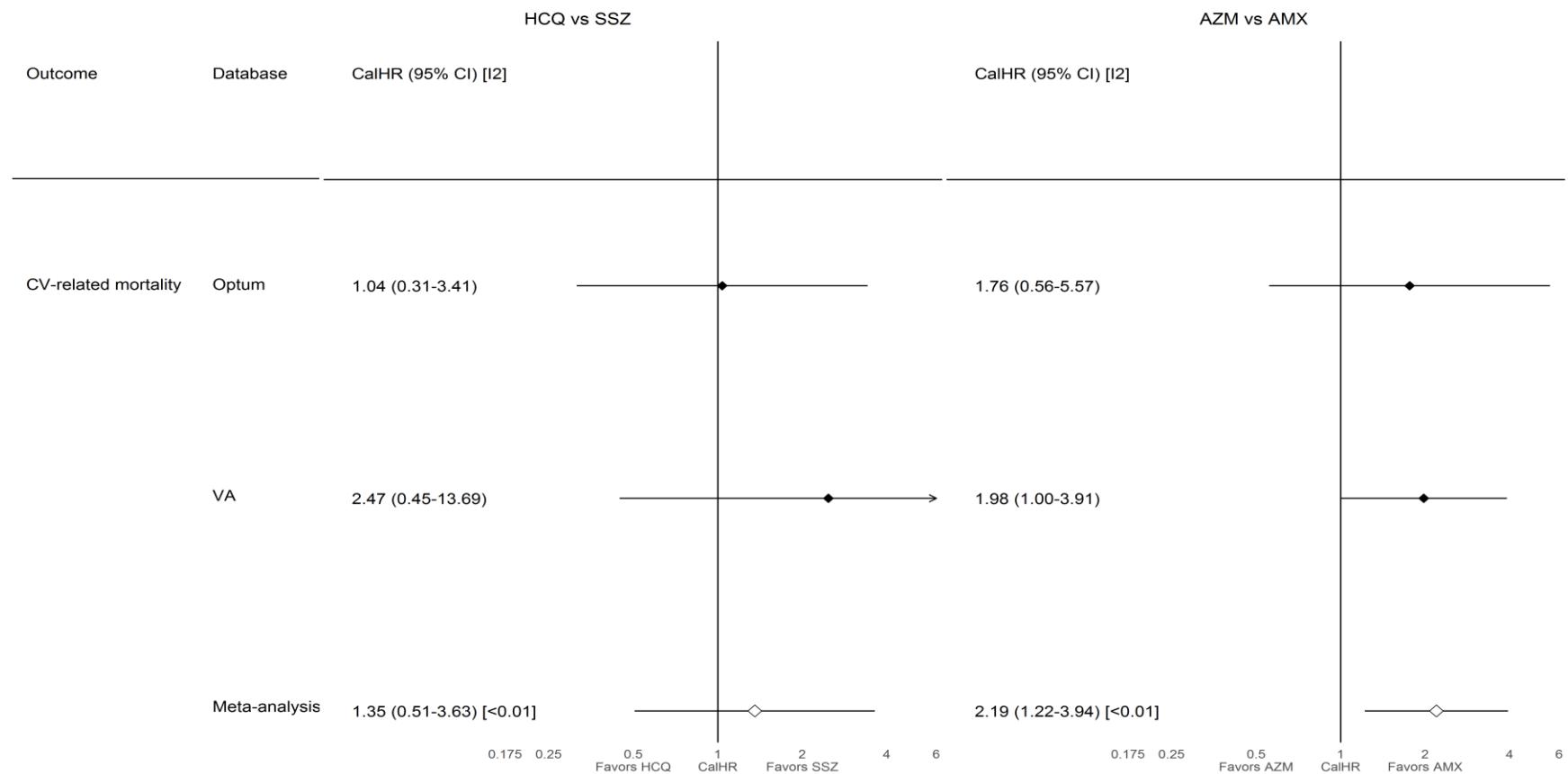
S8. Calibrated hazard ratio forest plots

S8.1. 30-day follow-up

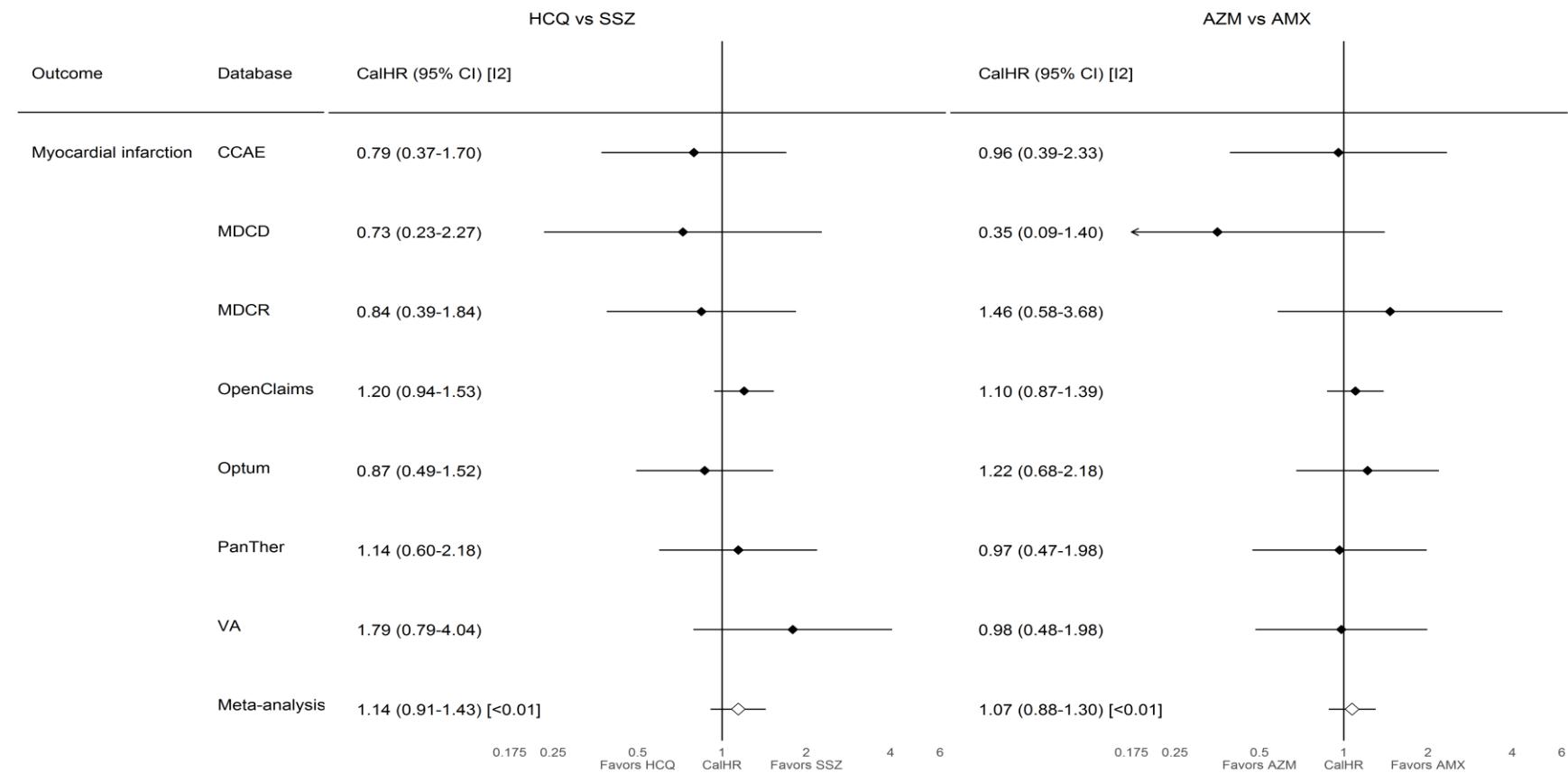
S8.1.1. All-cause mortality



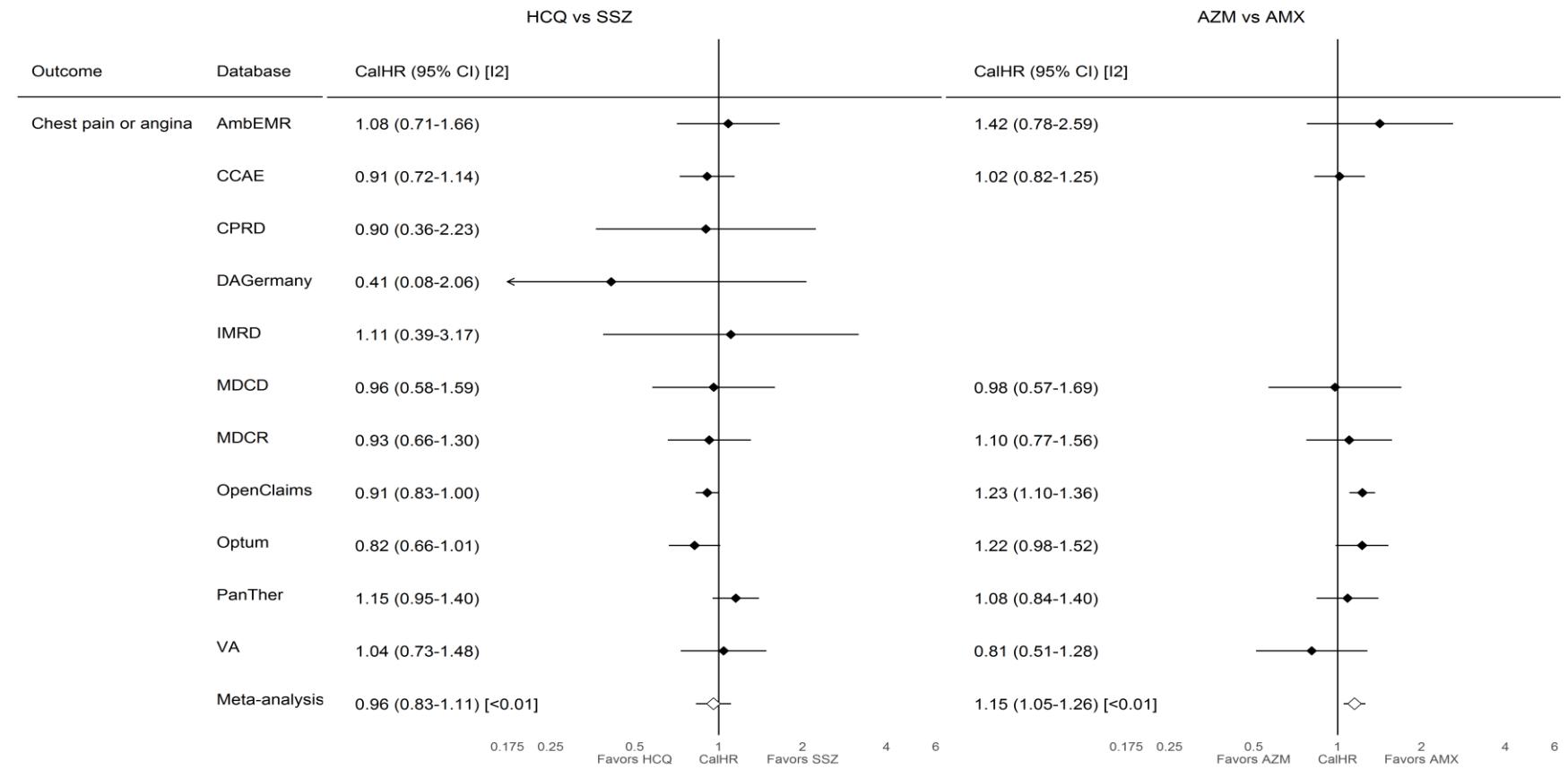
S8.1.2. CV-related mortality



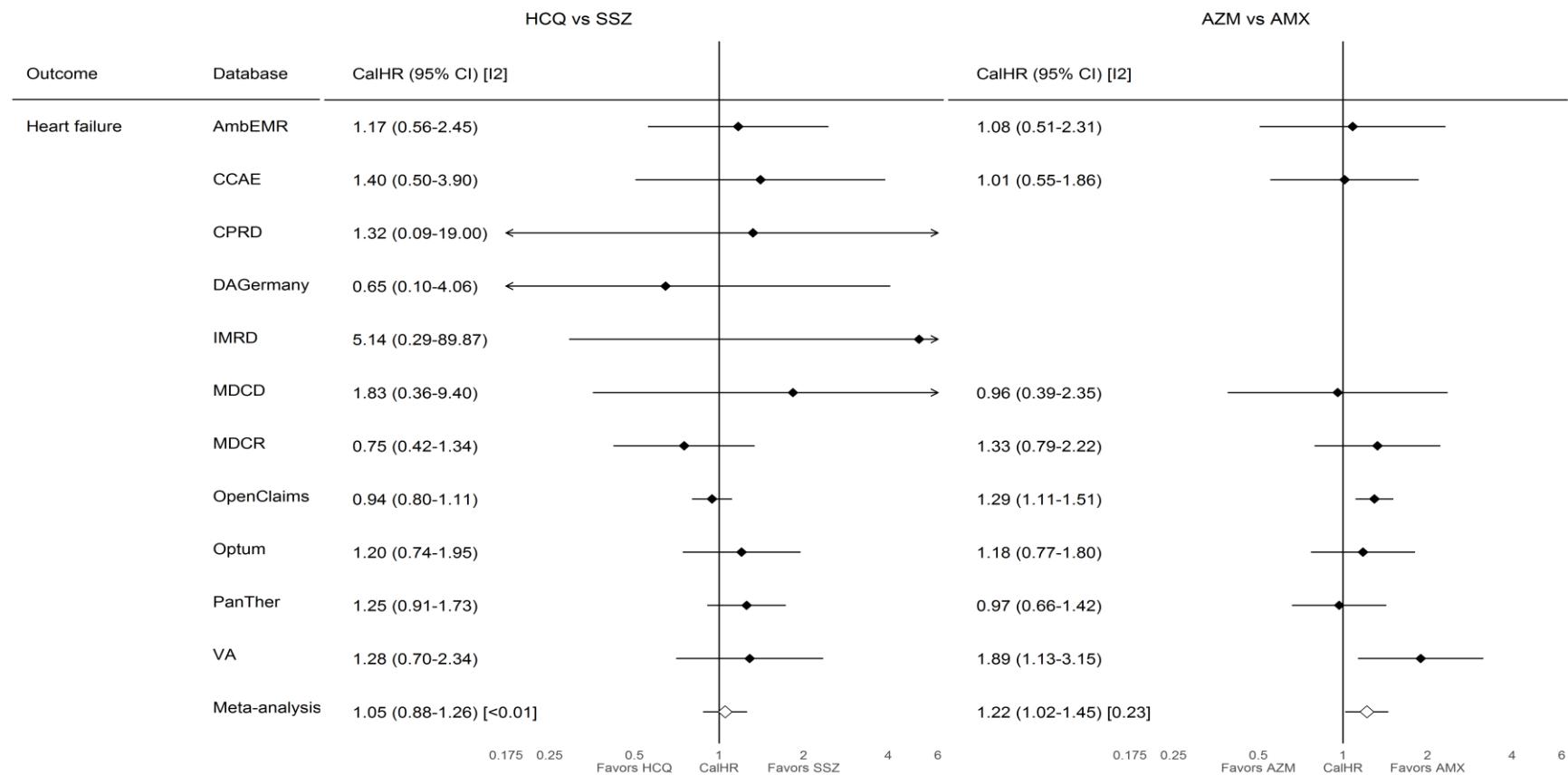
S8.1.3. Myocardial infarction



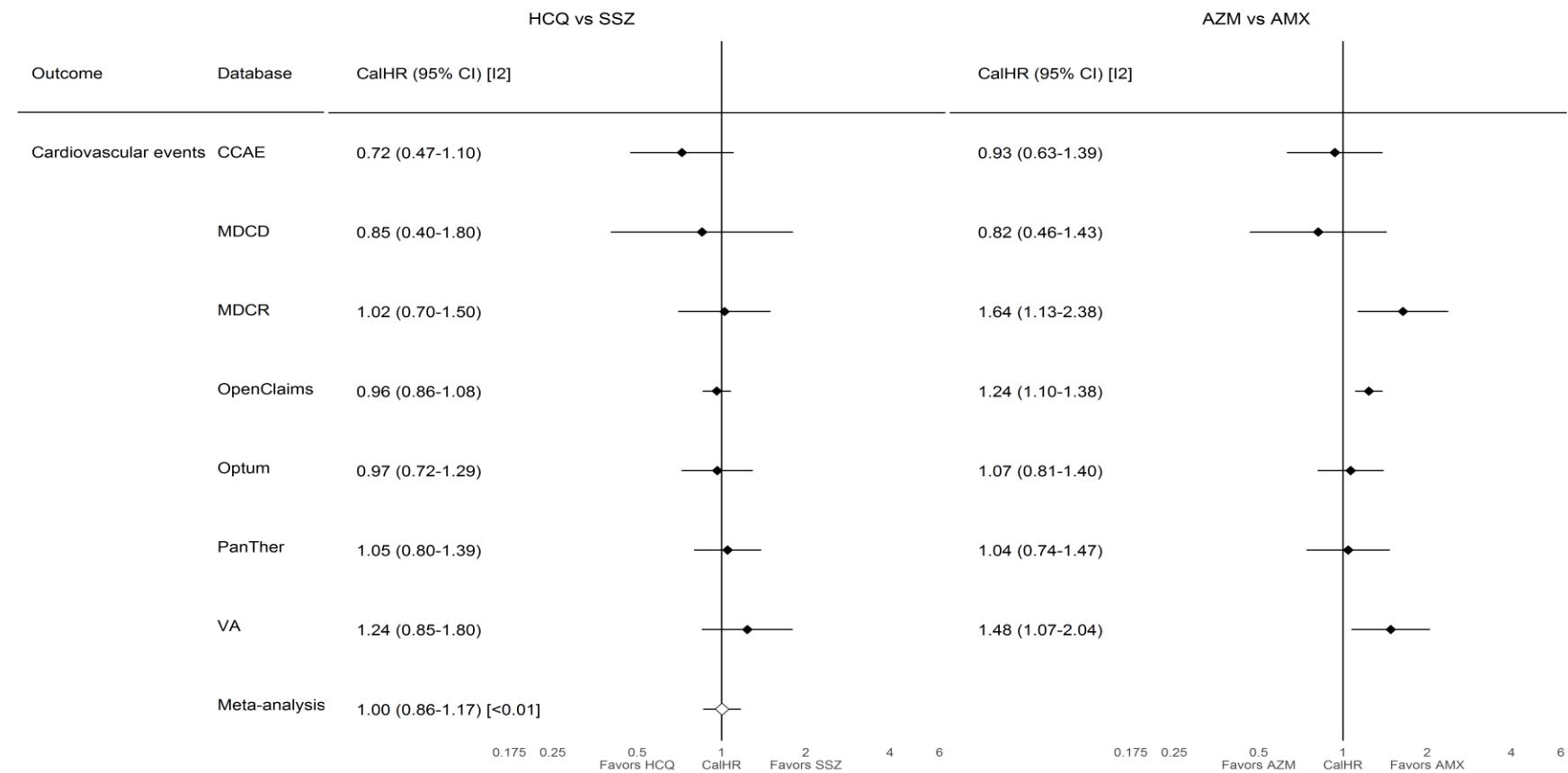
S8.1.4. Chest pain or angina



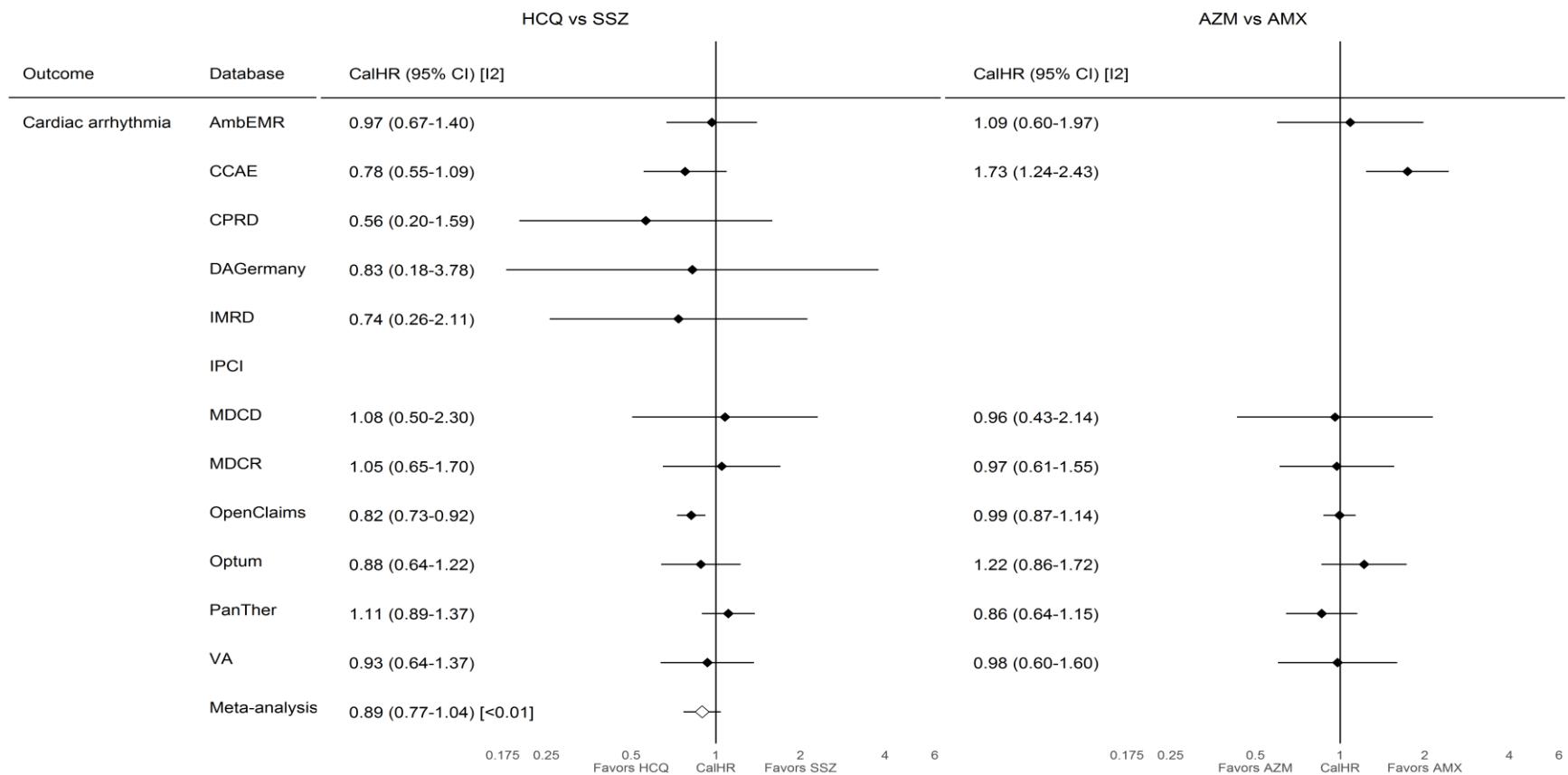
S8.1.5. Heart failure



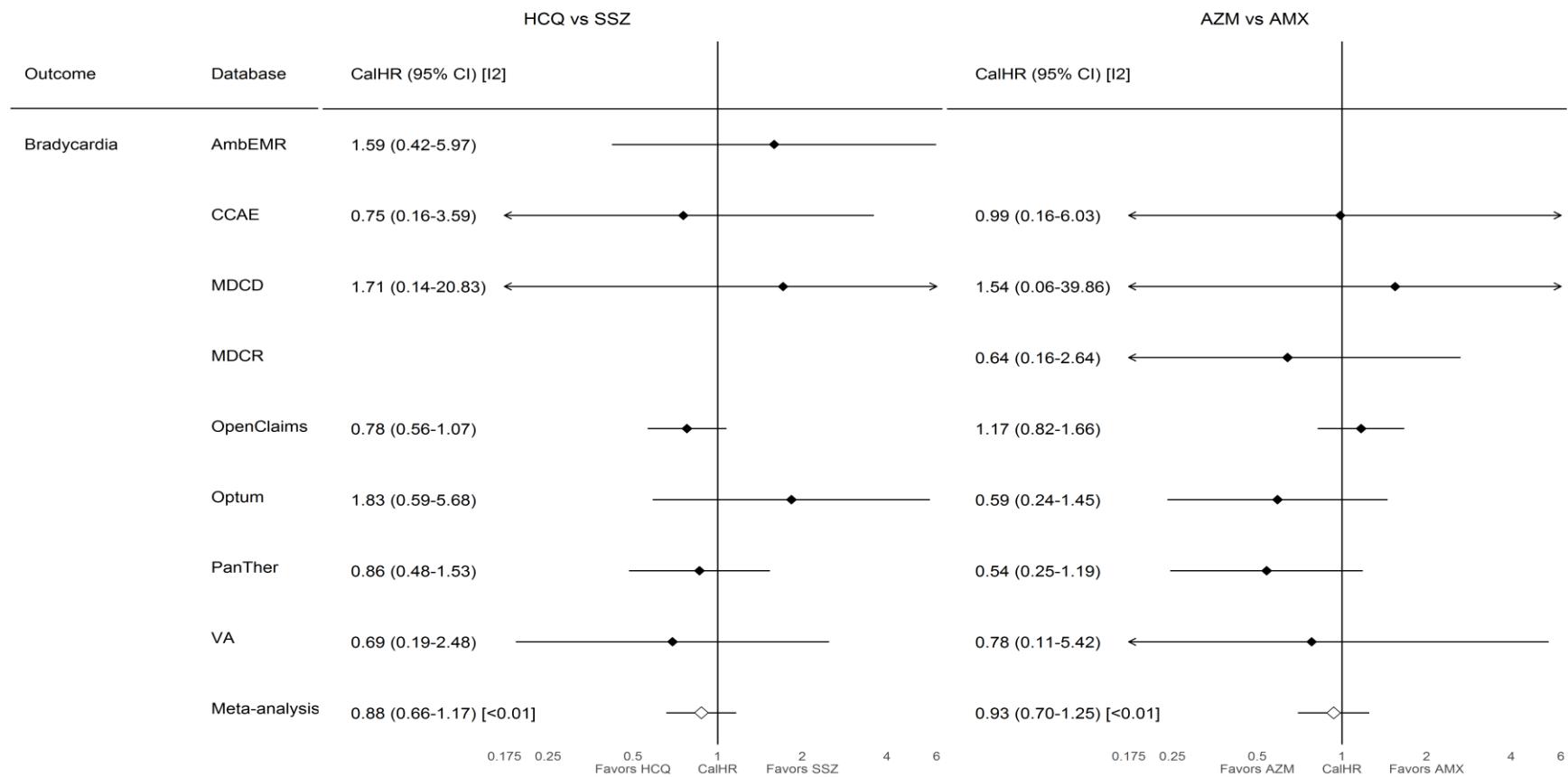
S8.1.6. Cardiovascular events



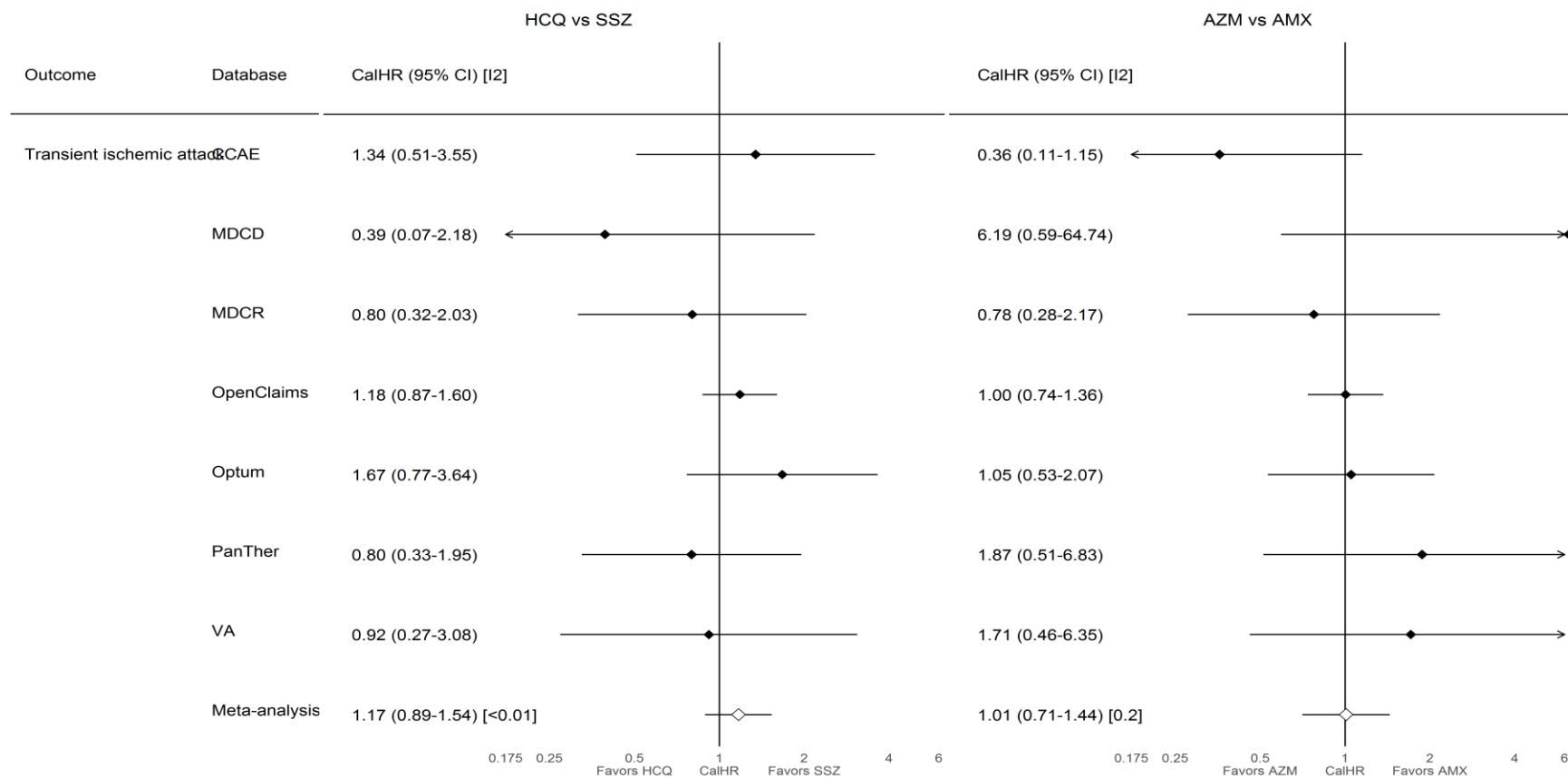
S8.1.7. Cardiac arrhythmia



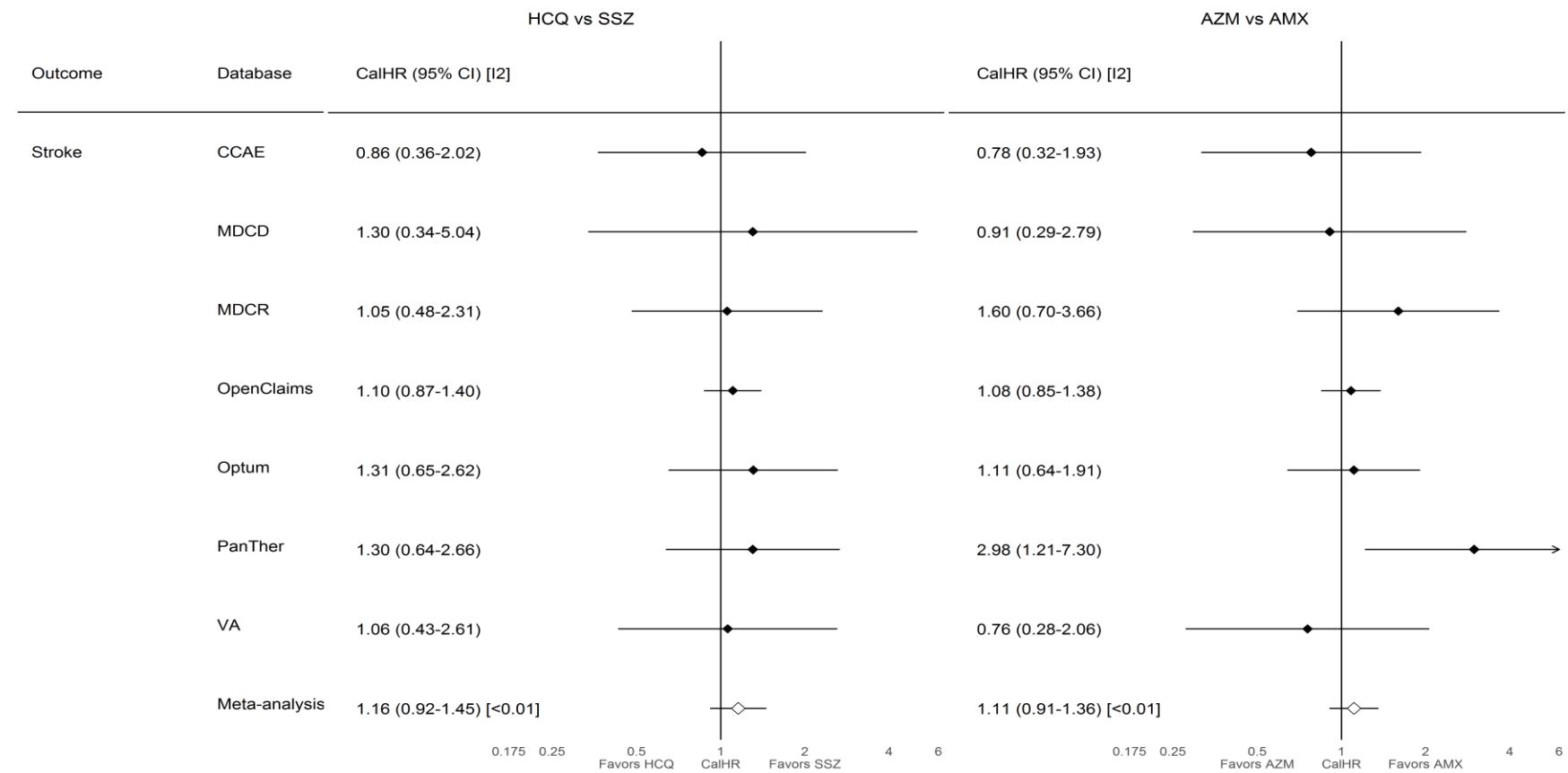
S8.1.8. Bradycardia



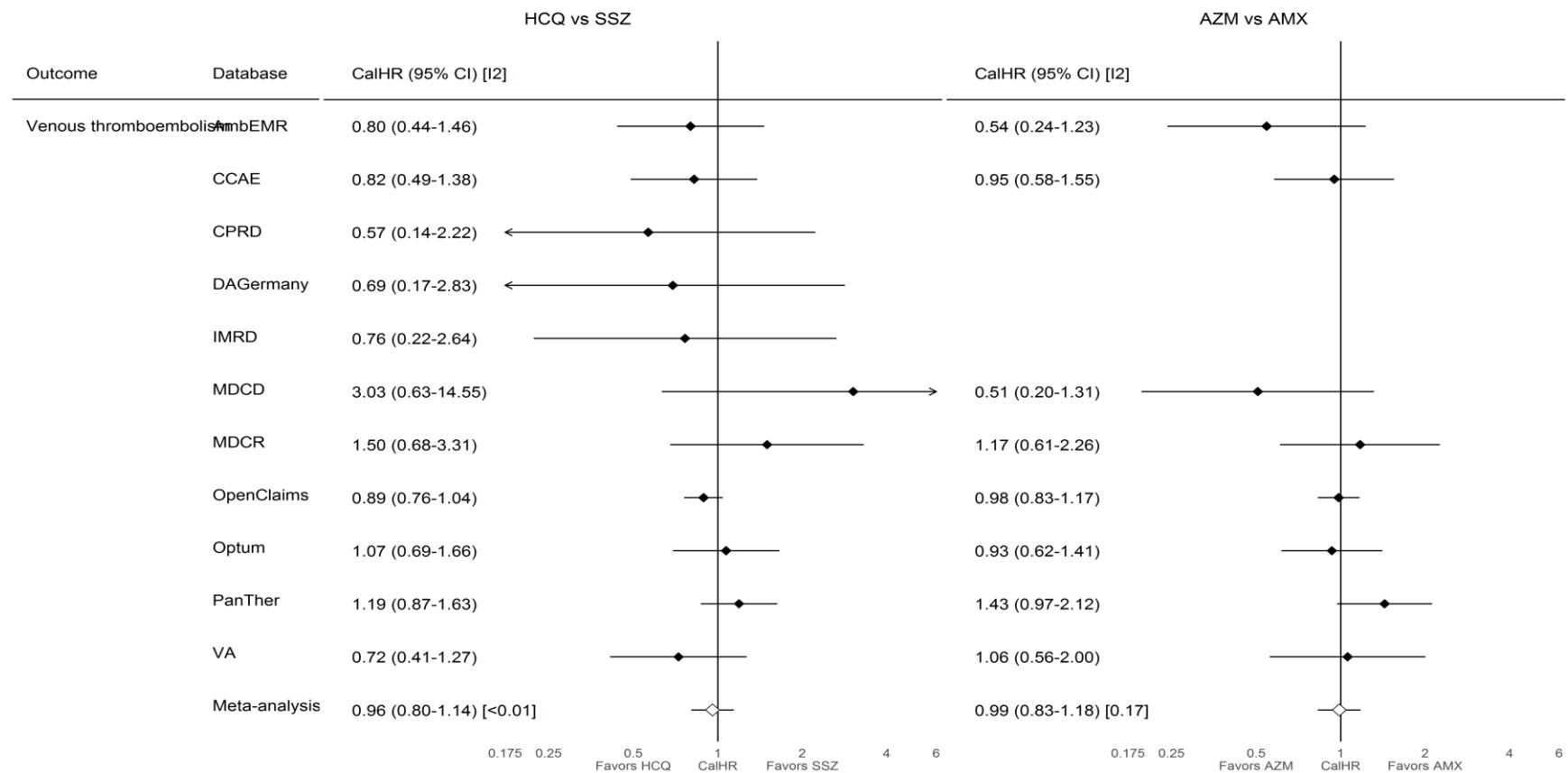
S8.1.9. Transient ischemic attack



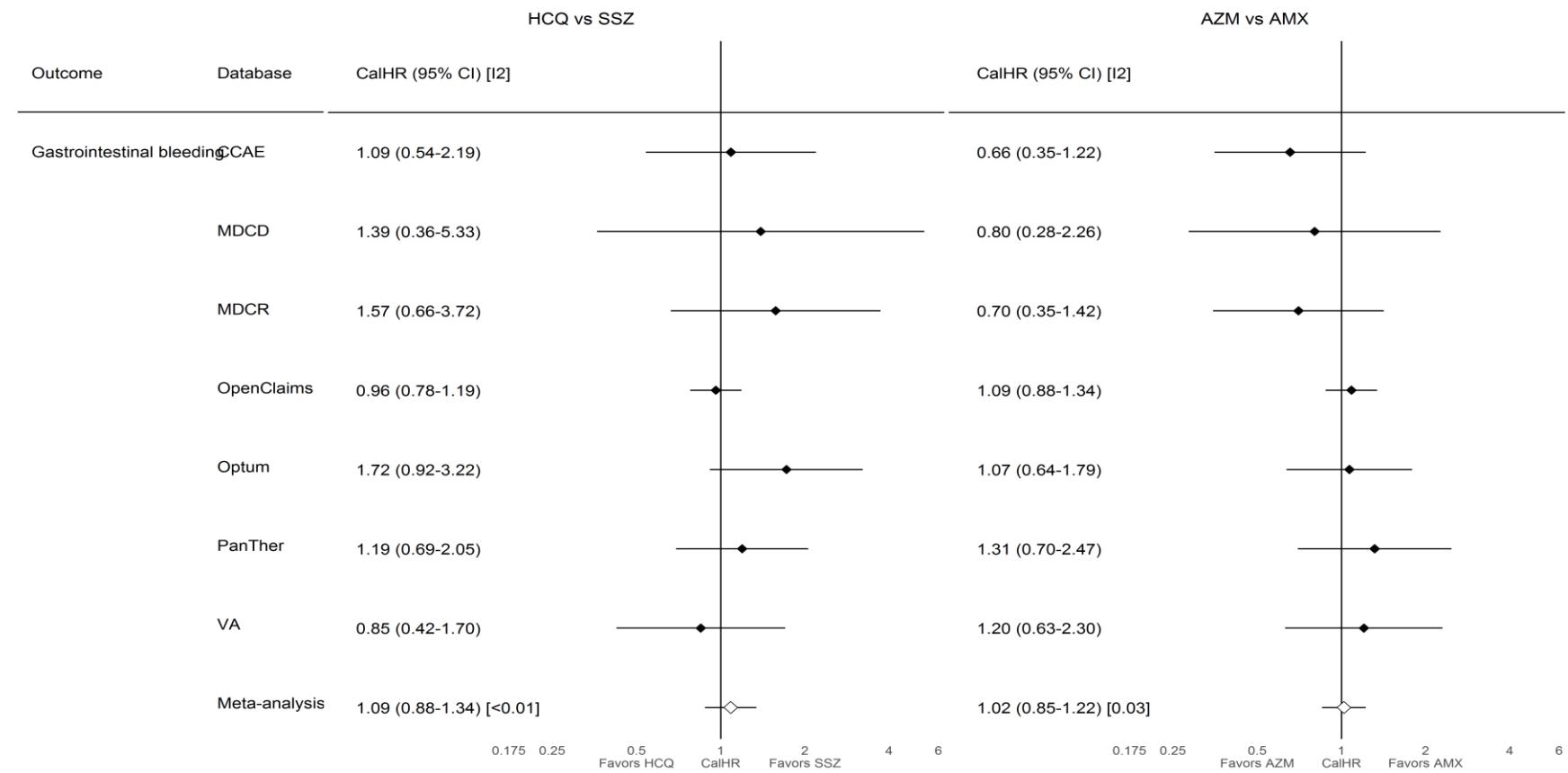
S8.1.10.Stroke



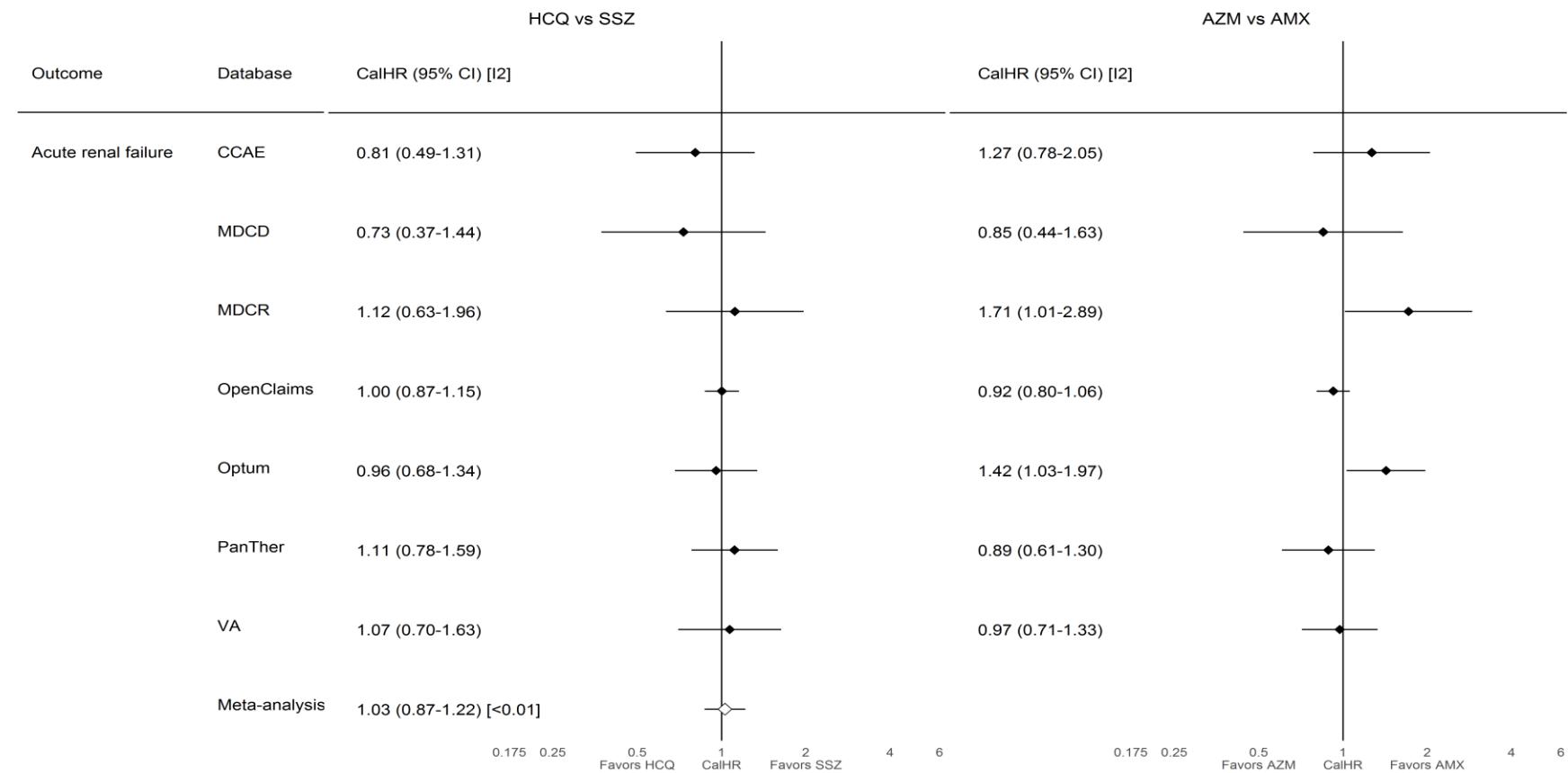
S8.1.11. Venous thromboembolism



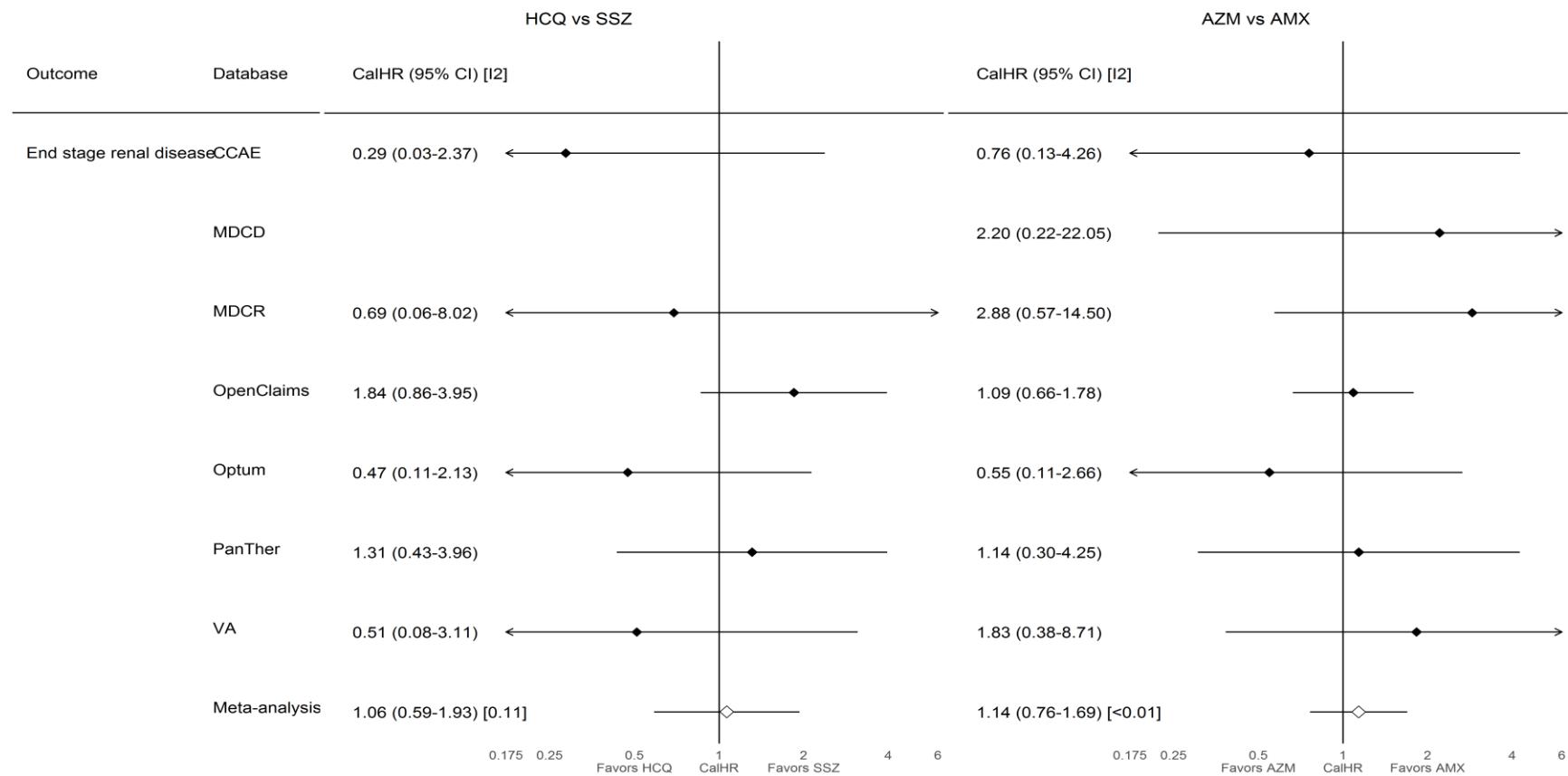
S8.1.12. Gastrointestinal bleeding



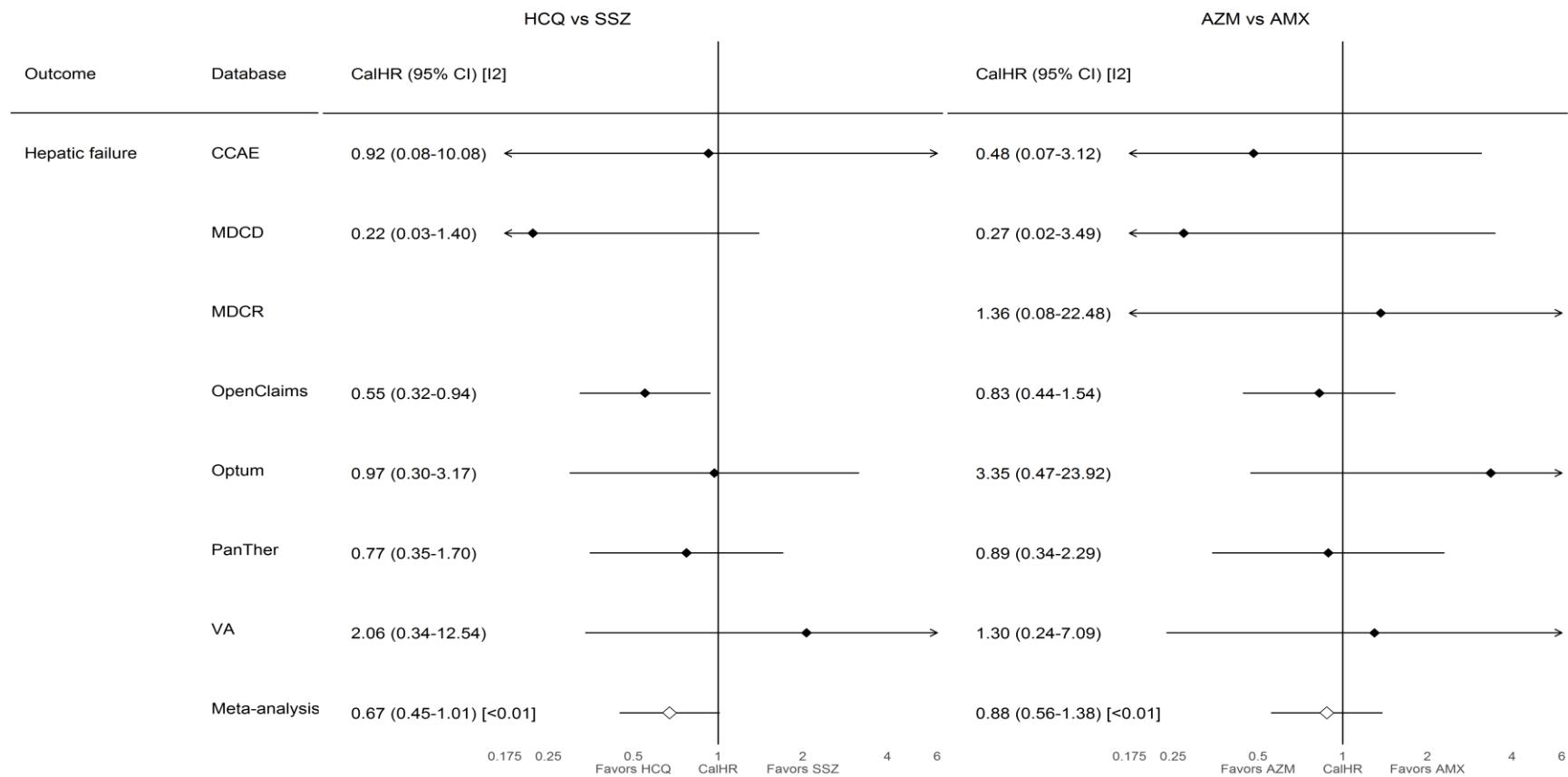
S8.1.13. Acute renal failure



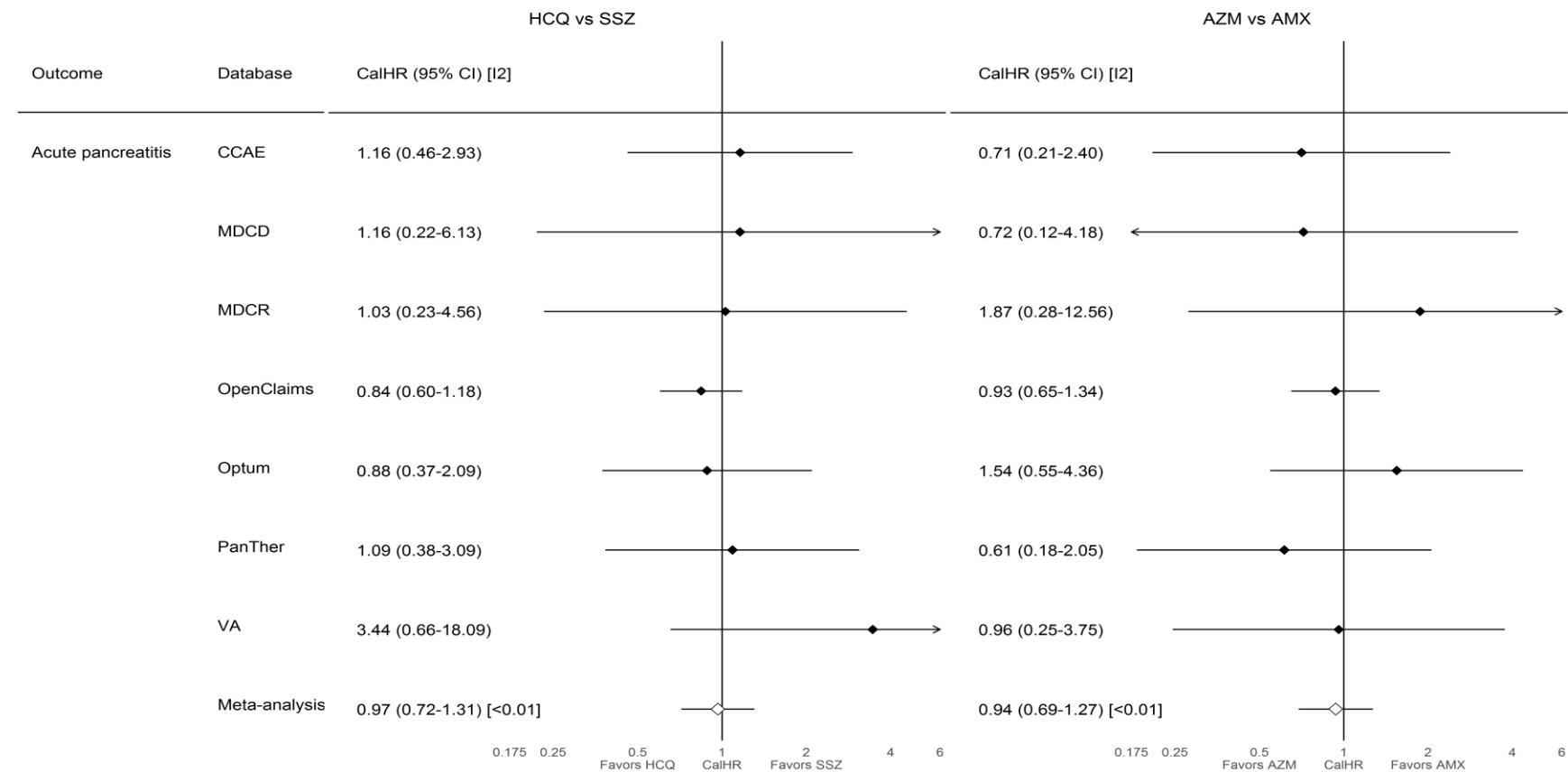
S8.1.14. End stage renal disease



S8.1.15. Hepatic failure

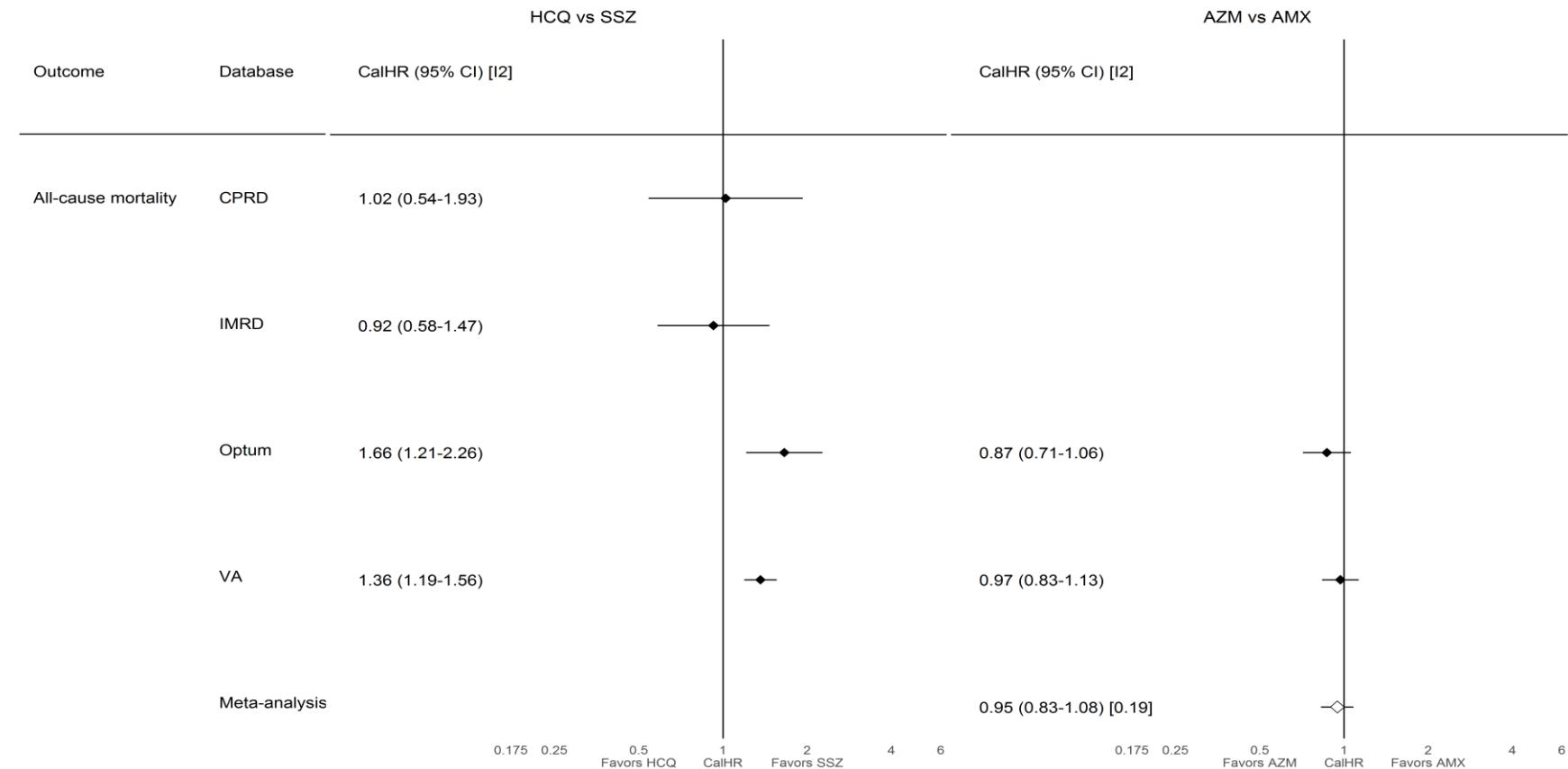


S8.1.16. Acute pancreatitis

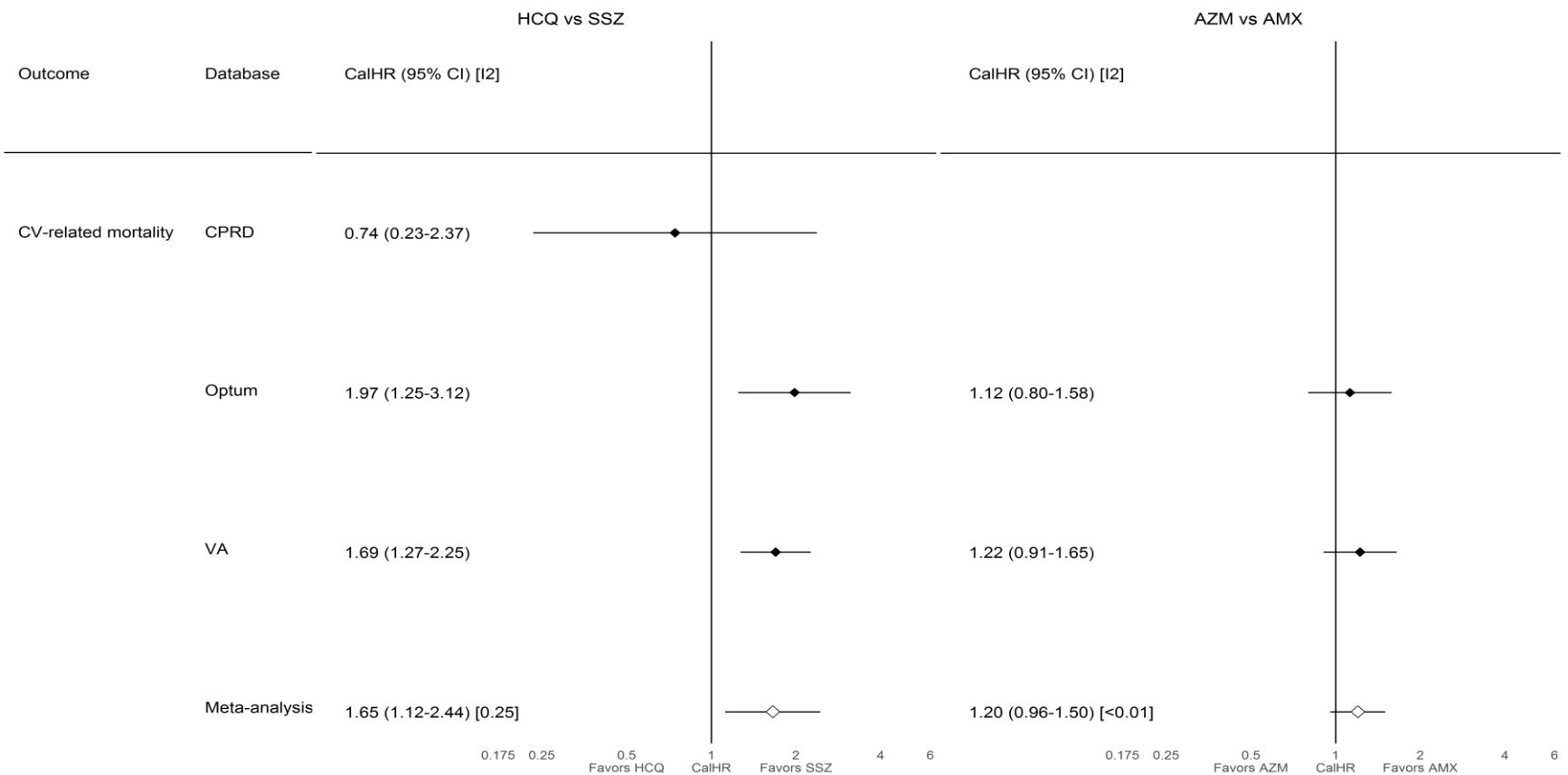


S8.2. On-treatment follow-up

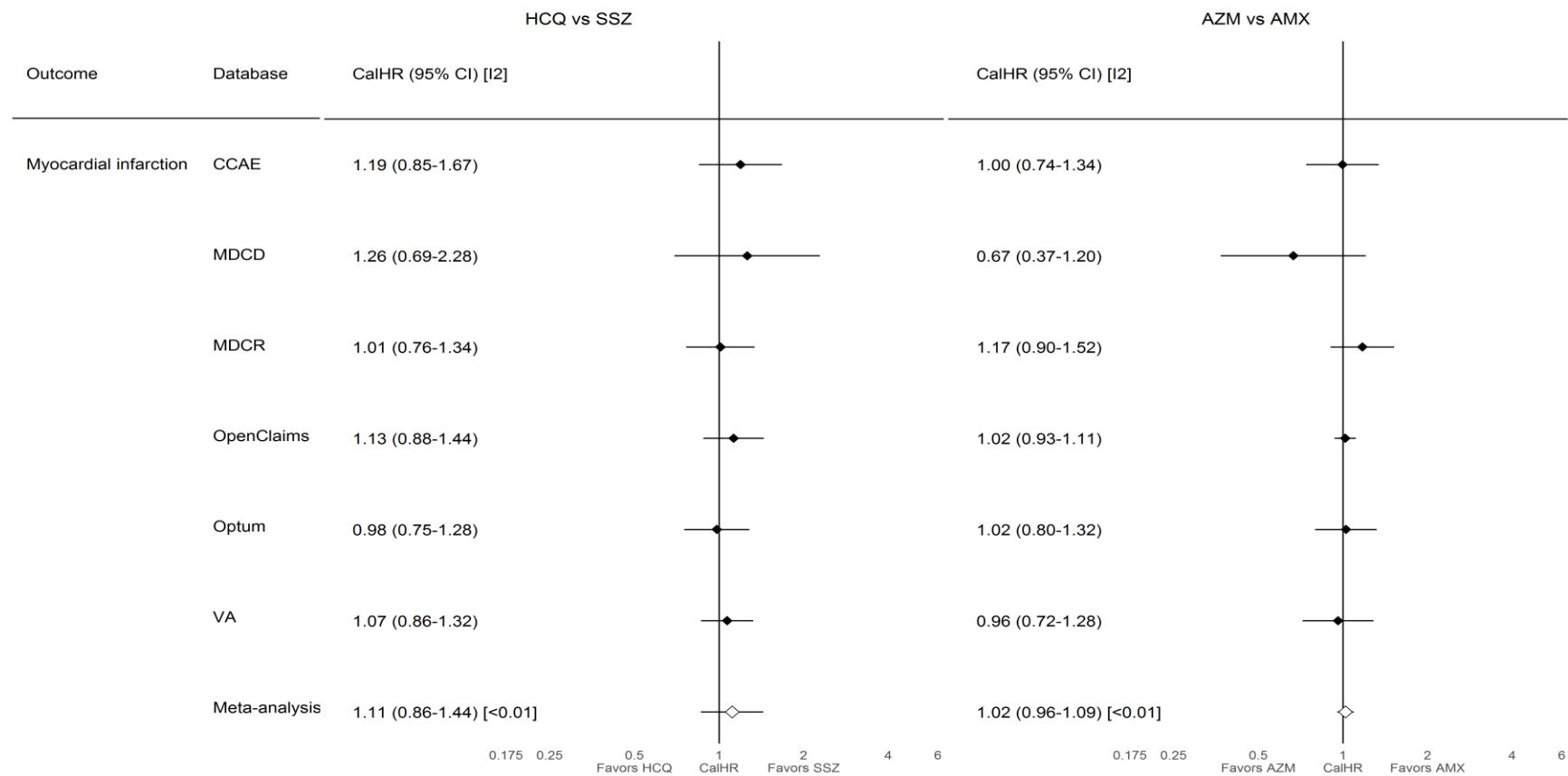
S8.2.1. All-cause mortality



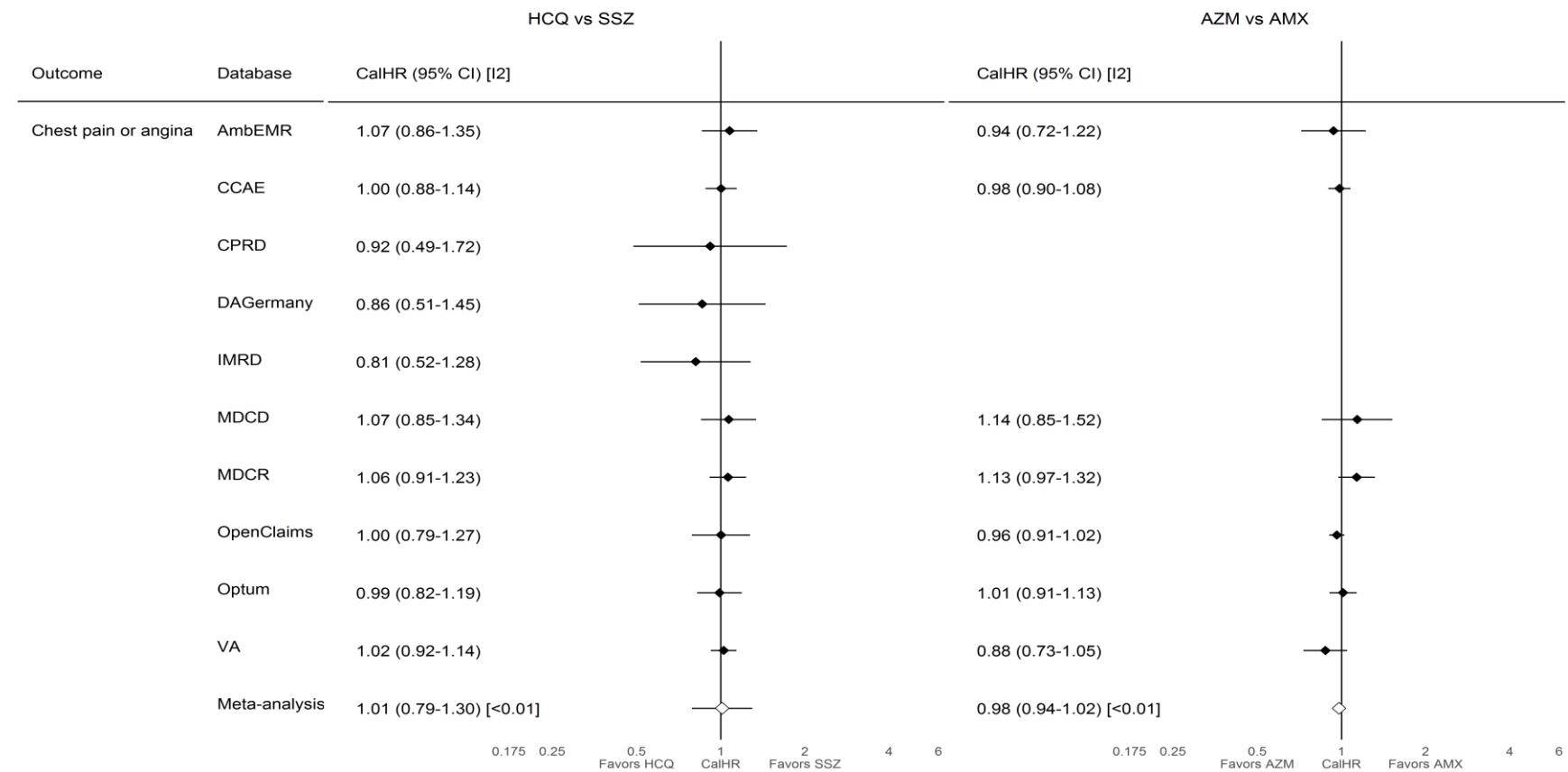
S8.2.2. CV-related mortality



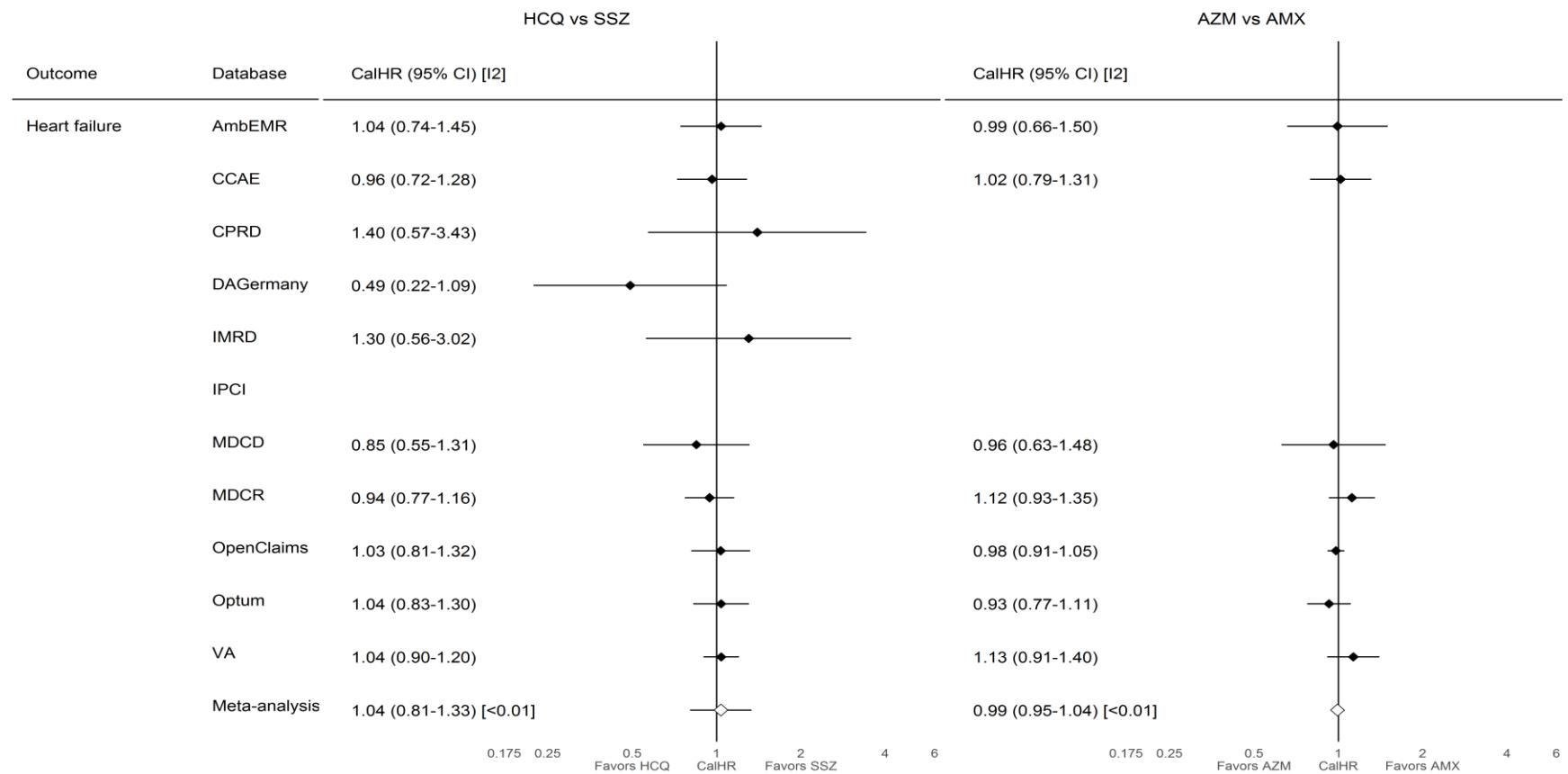
S8.2.3. Myocardial infarction



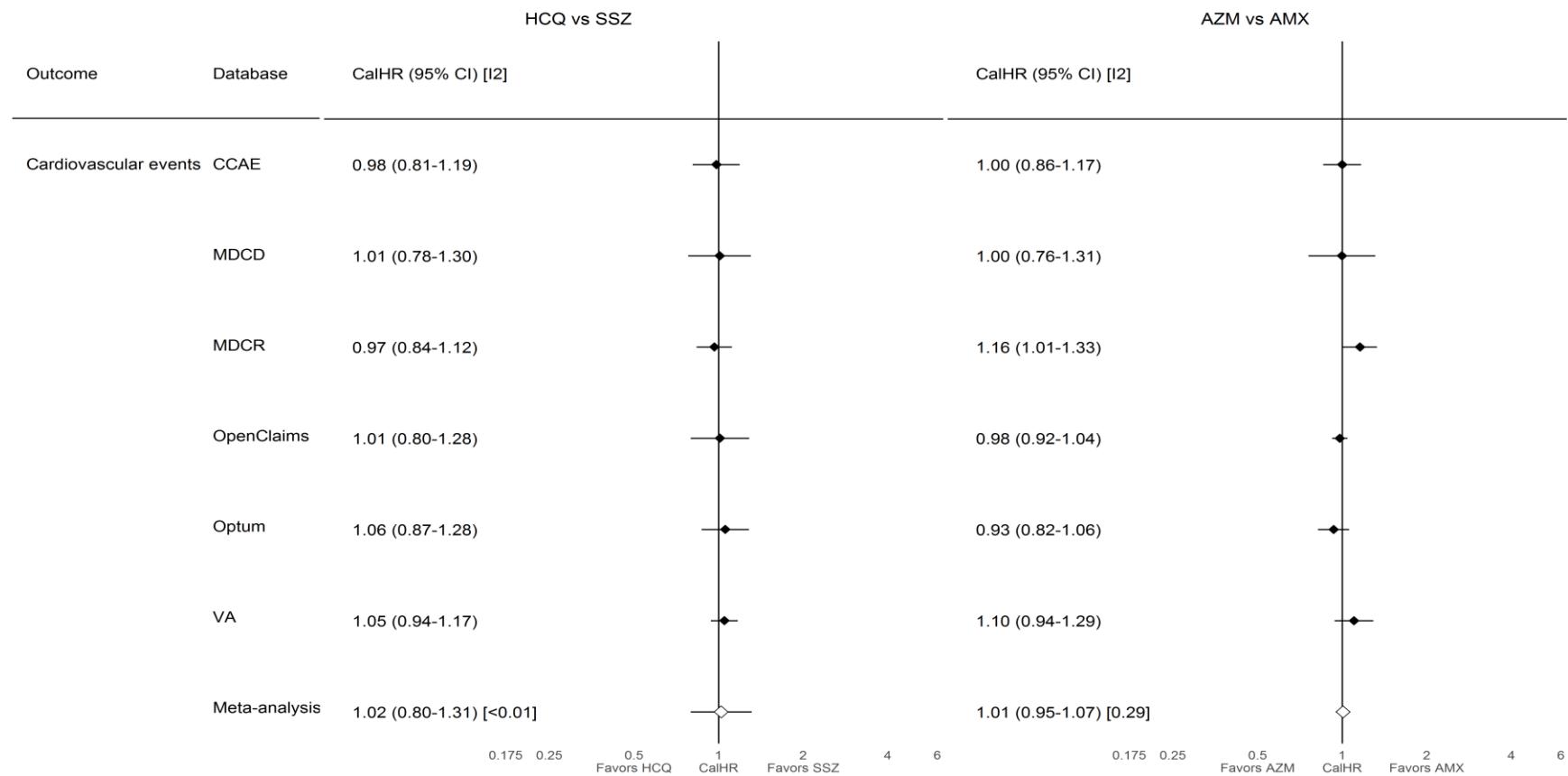
S8.2.4. Chest pain or angina



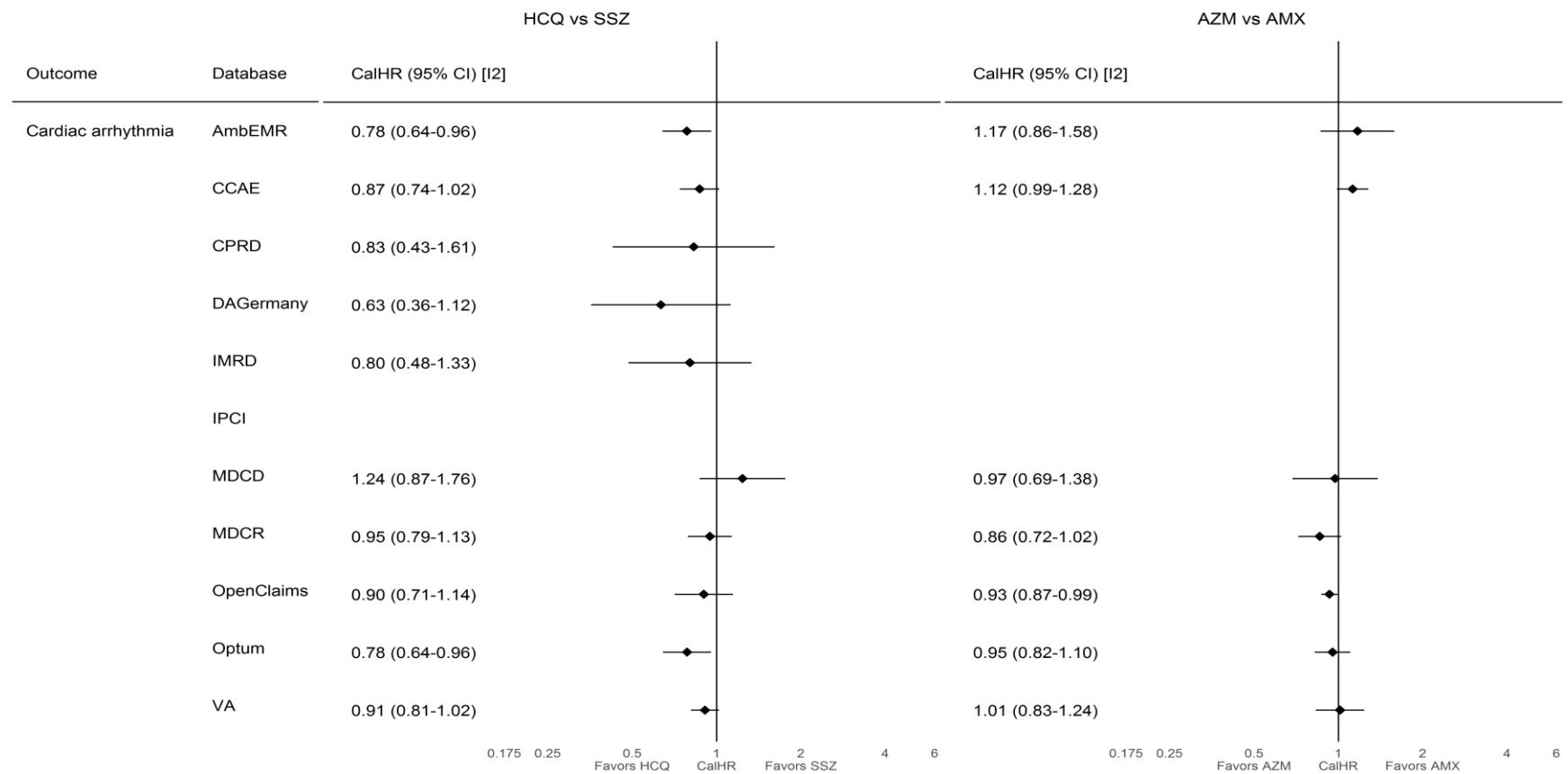
S8.2.5. Heart failure



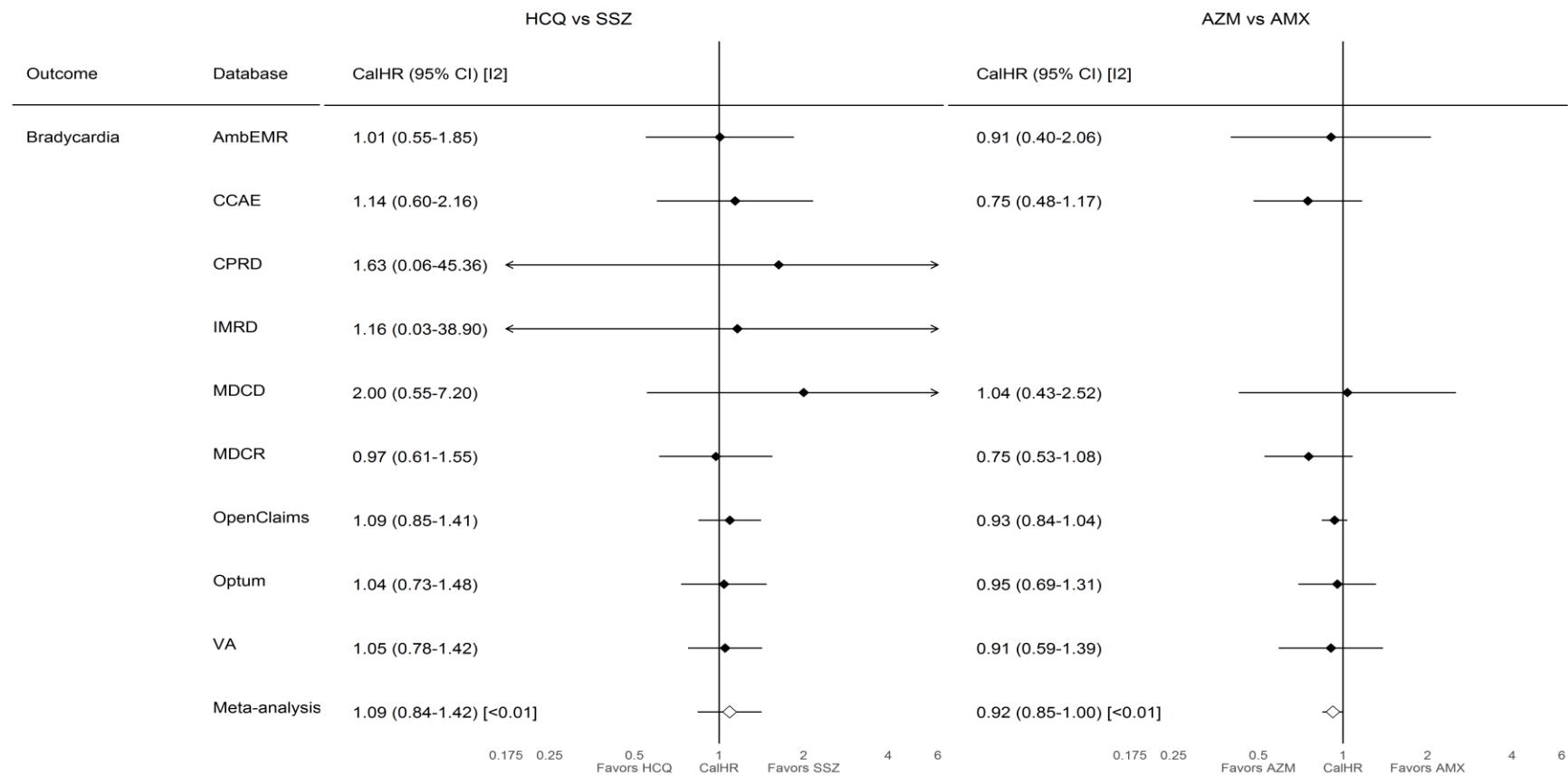
S8.2.6. Cardiovascular events



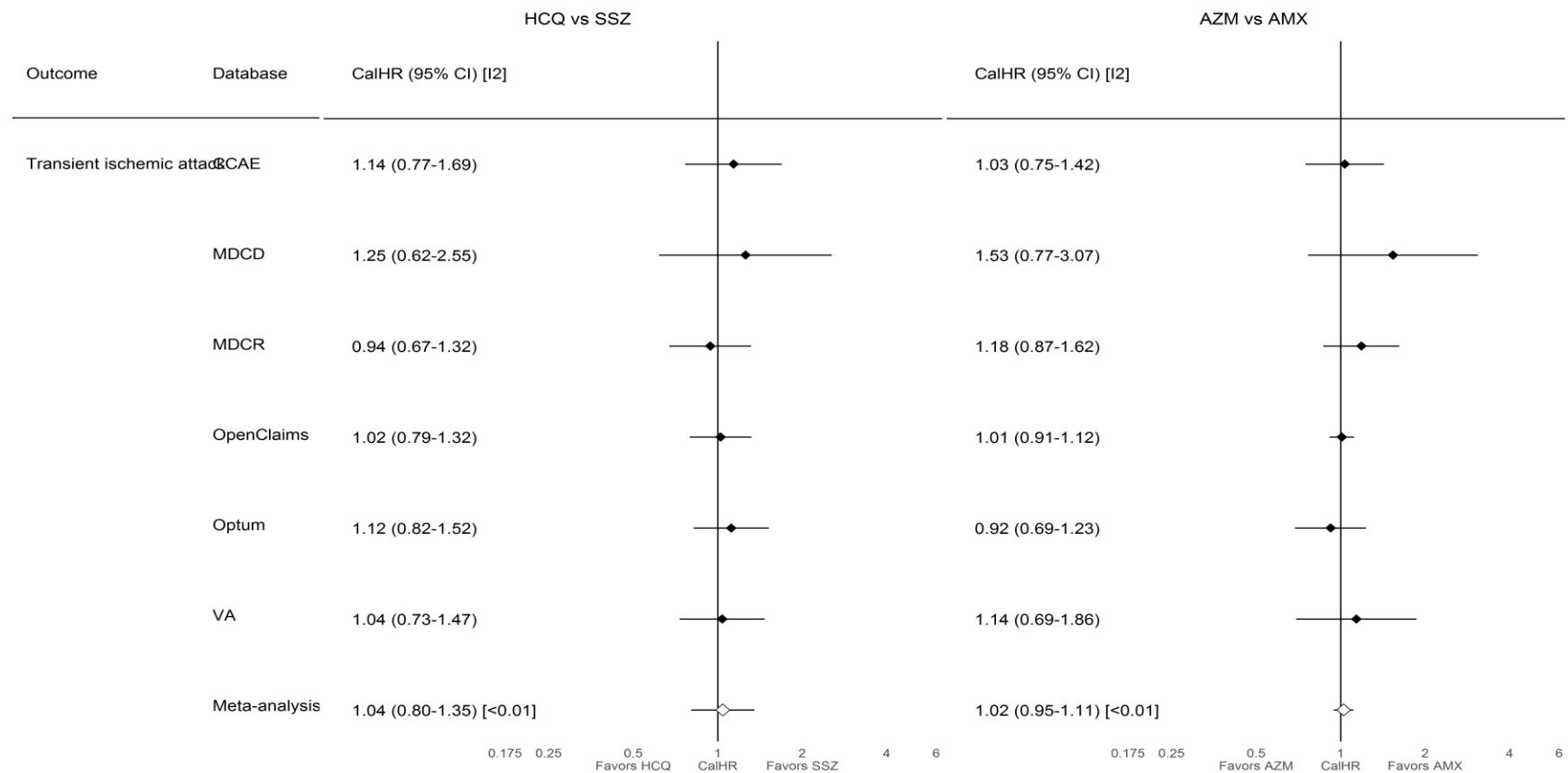
S8.2.7. Cardiac arrhythmia



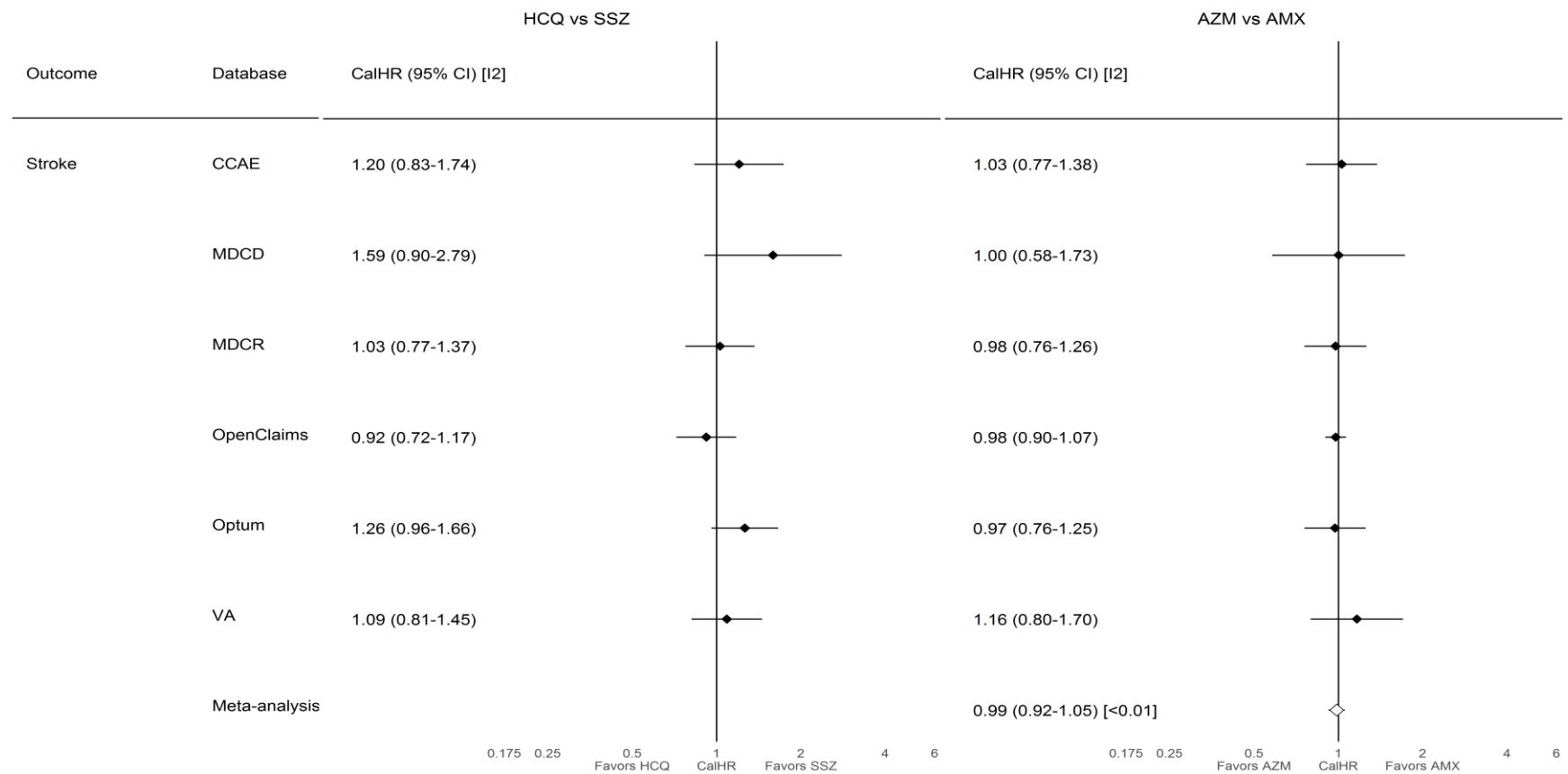
S8.2.8. Bradycardia



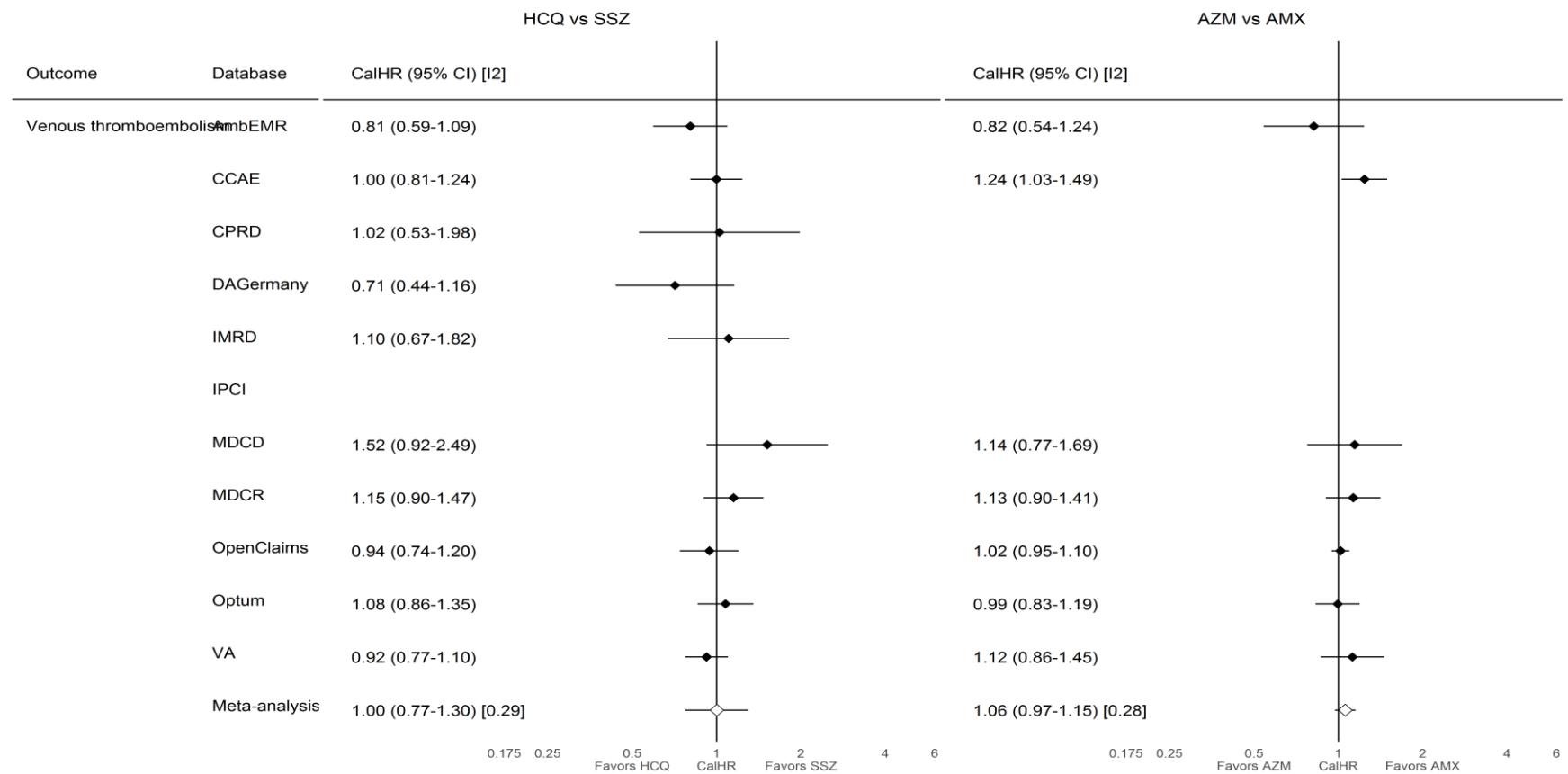
S8.2.9. Transient ischemic attack



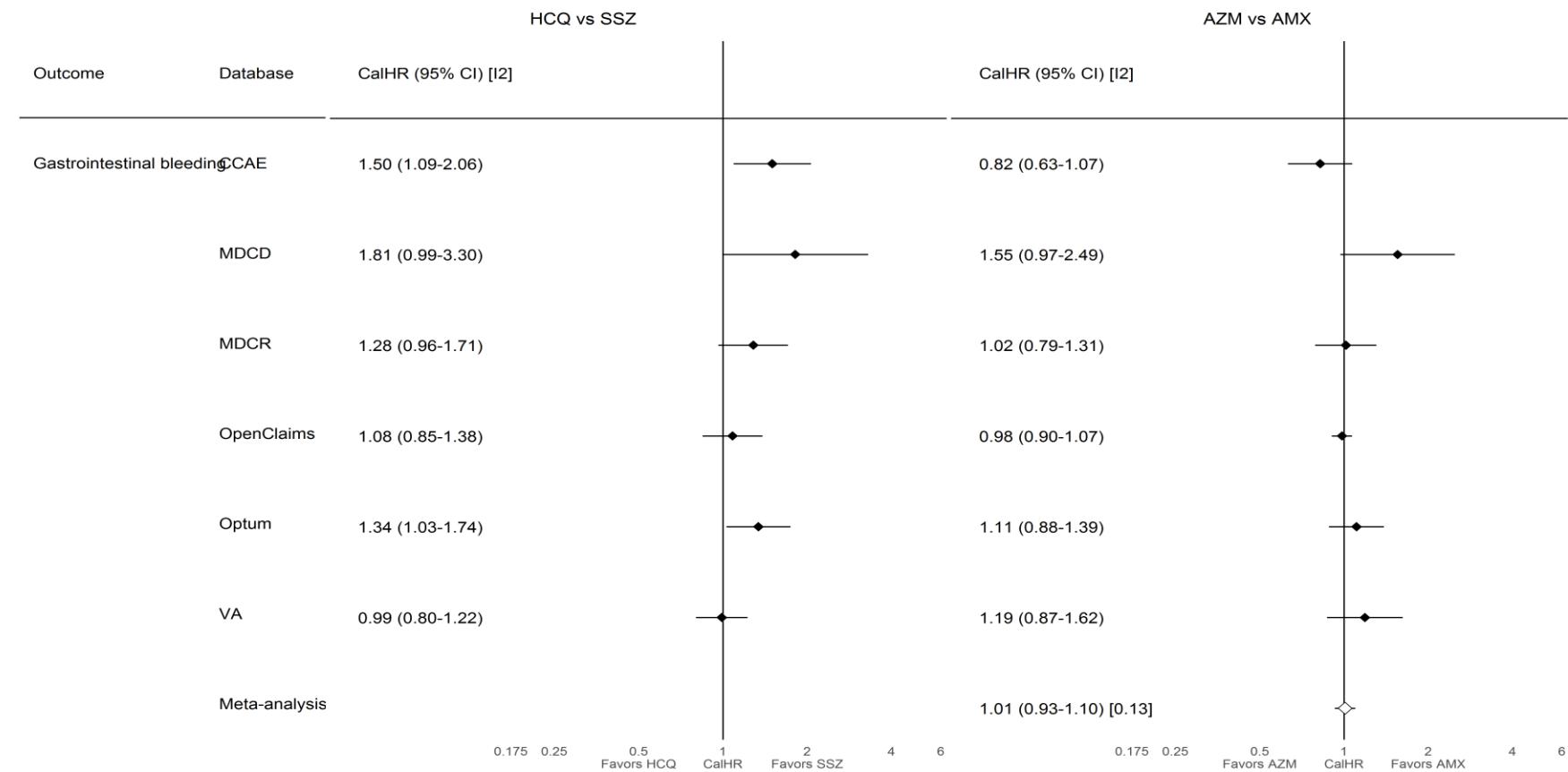
S8.2.10. Stroke



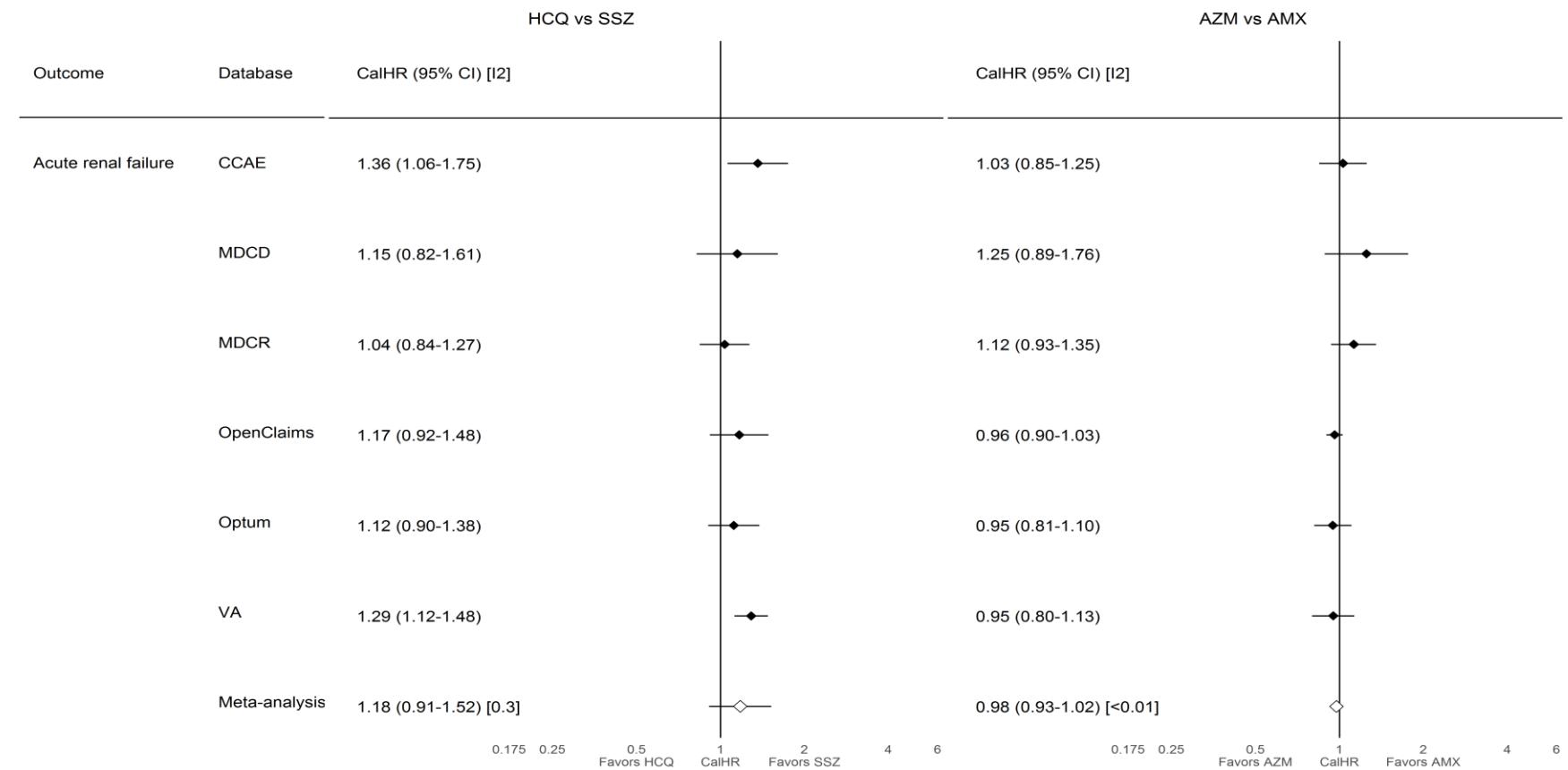
S8.2.11. Venous thromboembolism



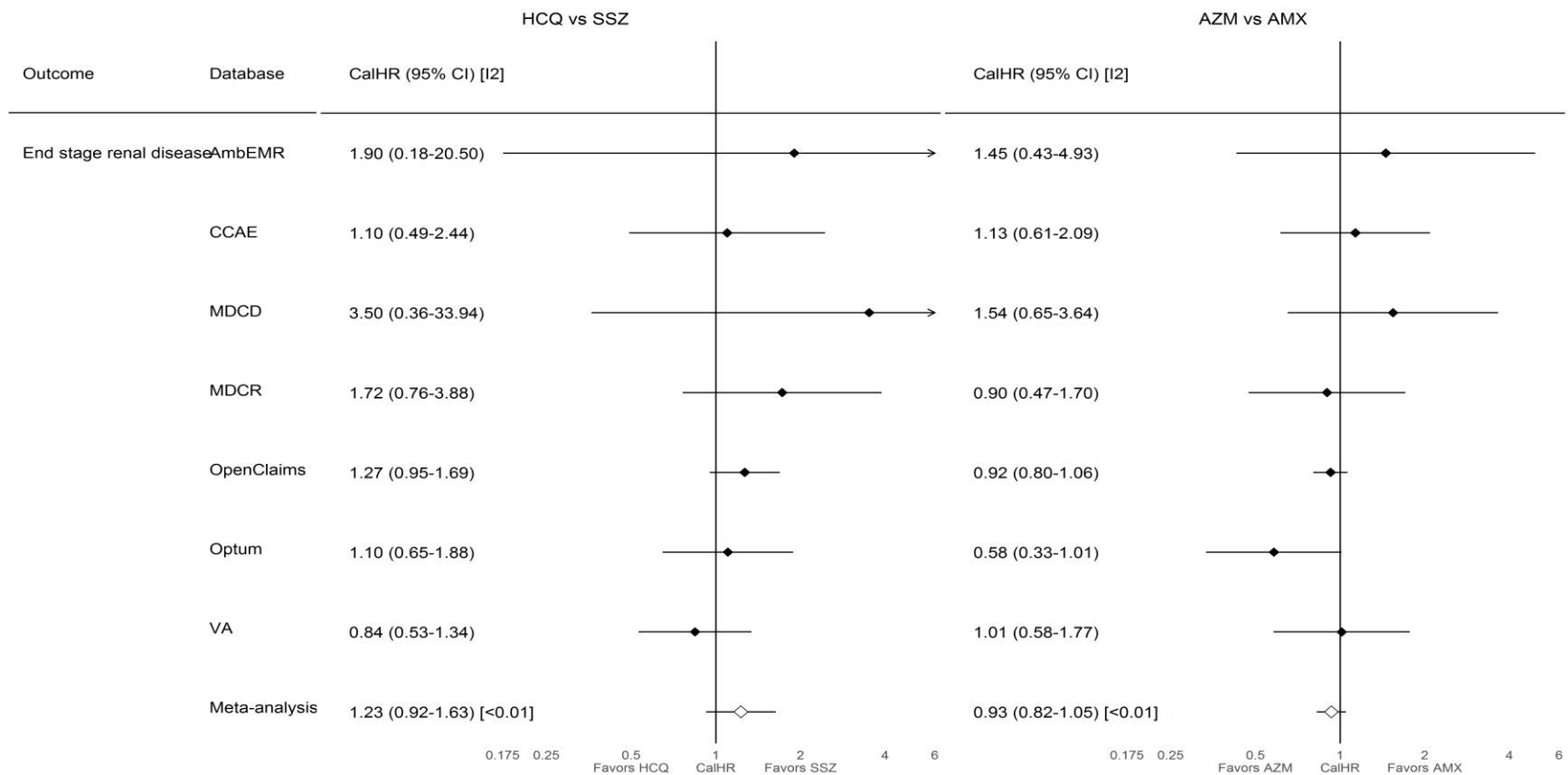
S8.2.12. Gastrointestinal bleeding



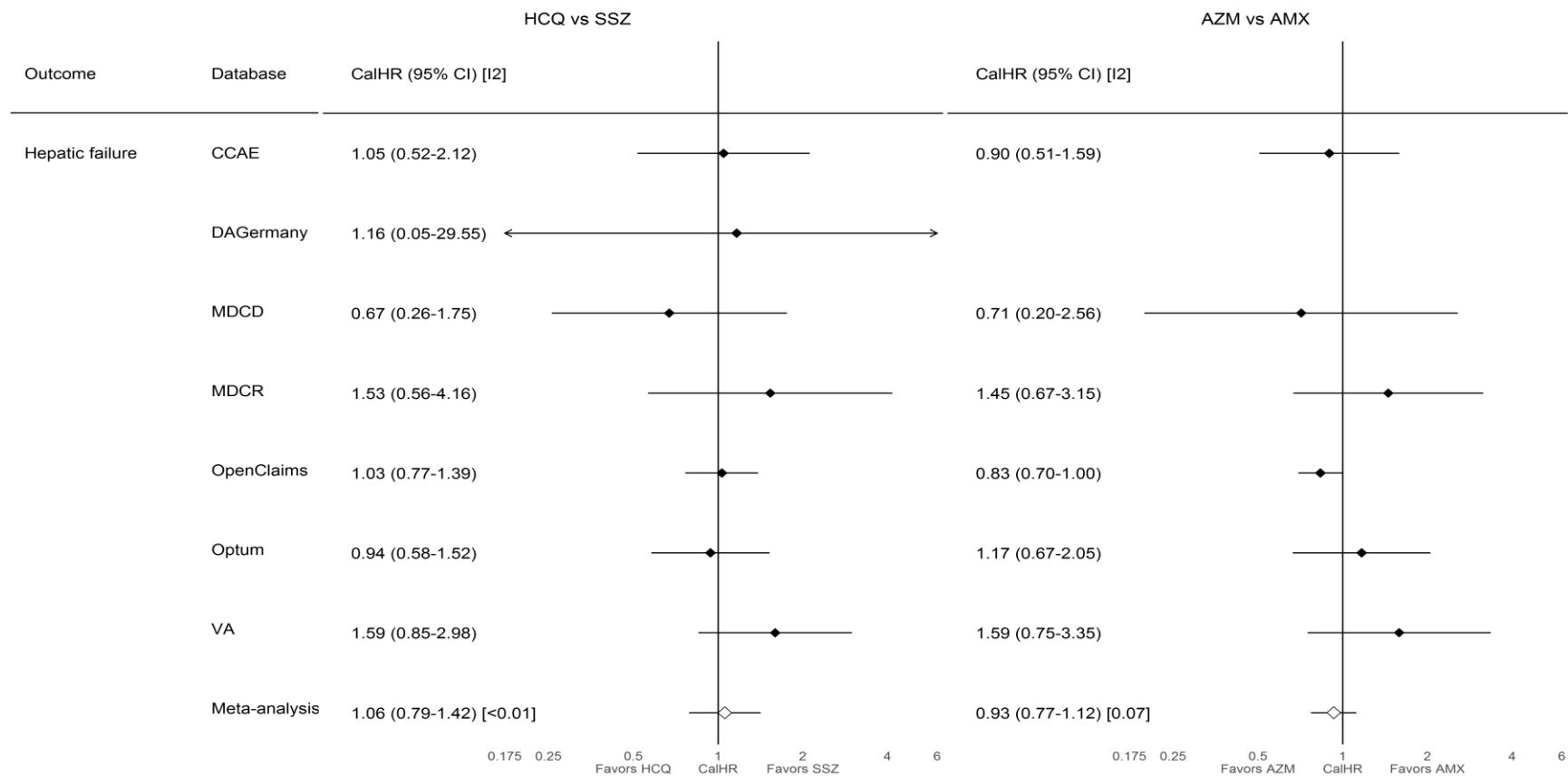
S8.2.13. Acute renal failure



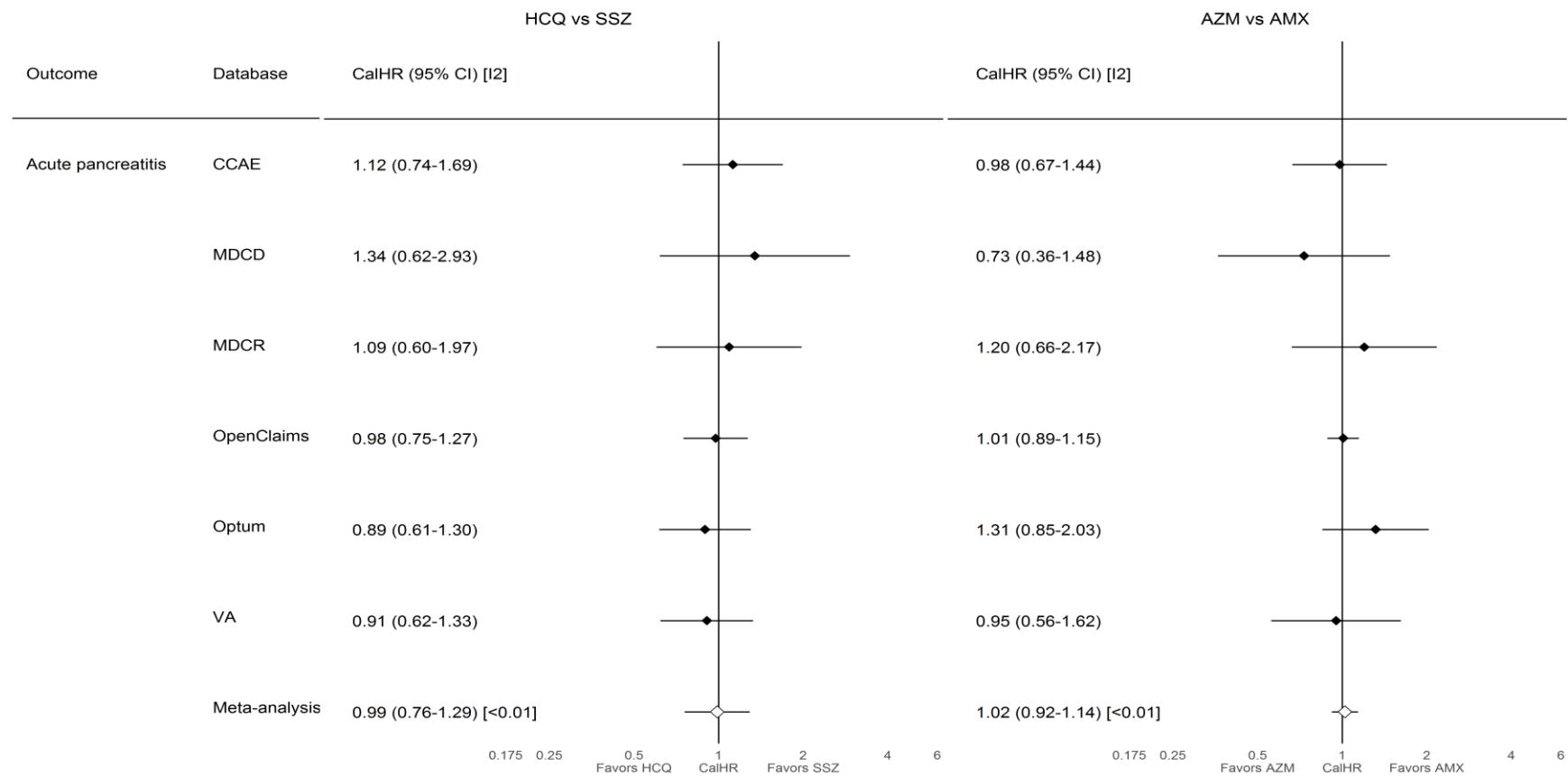
S8.2.14. End stage renal disease



S8.2.15. Hepatic failure



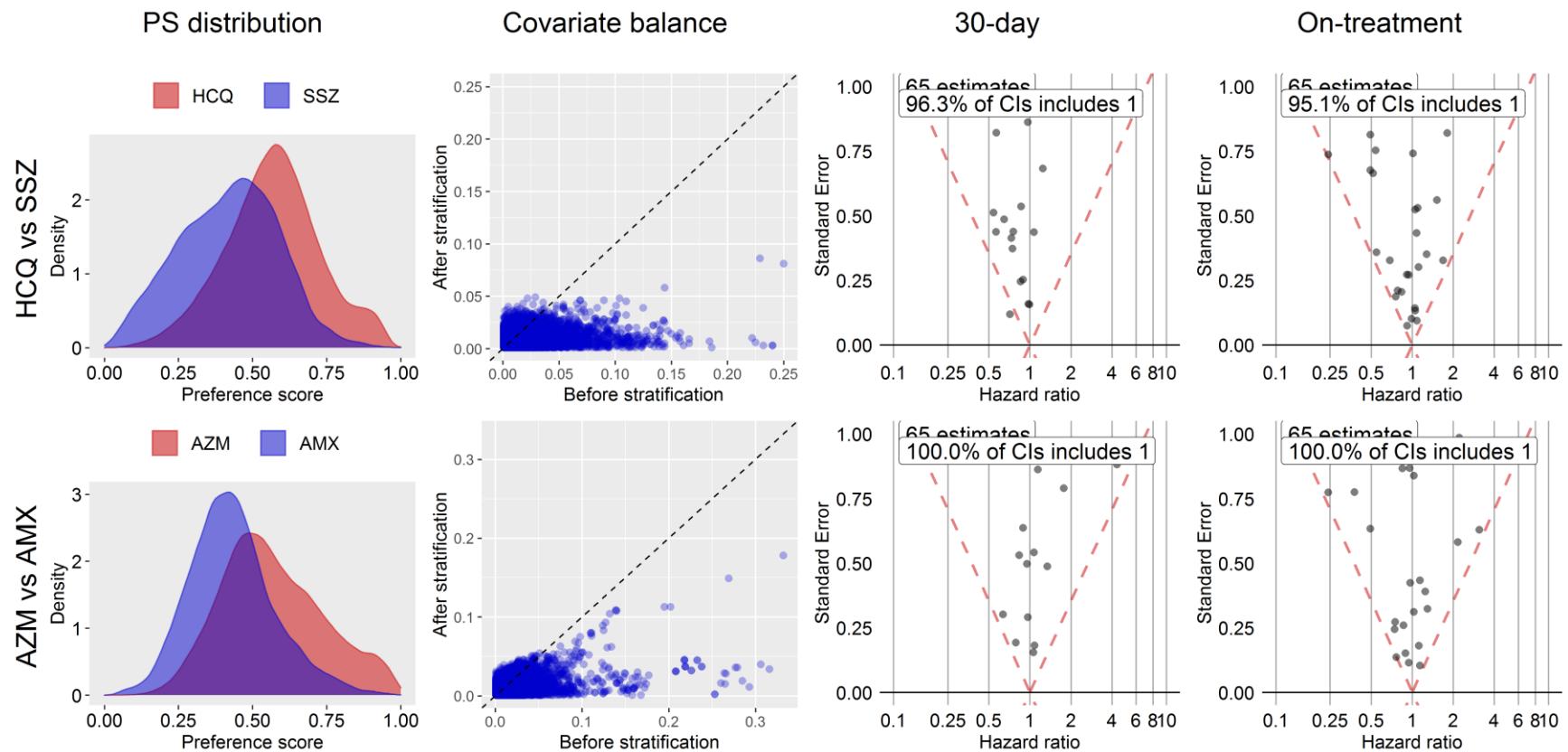
S8.2.16. Acute pancreatitis



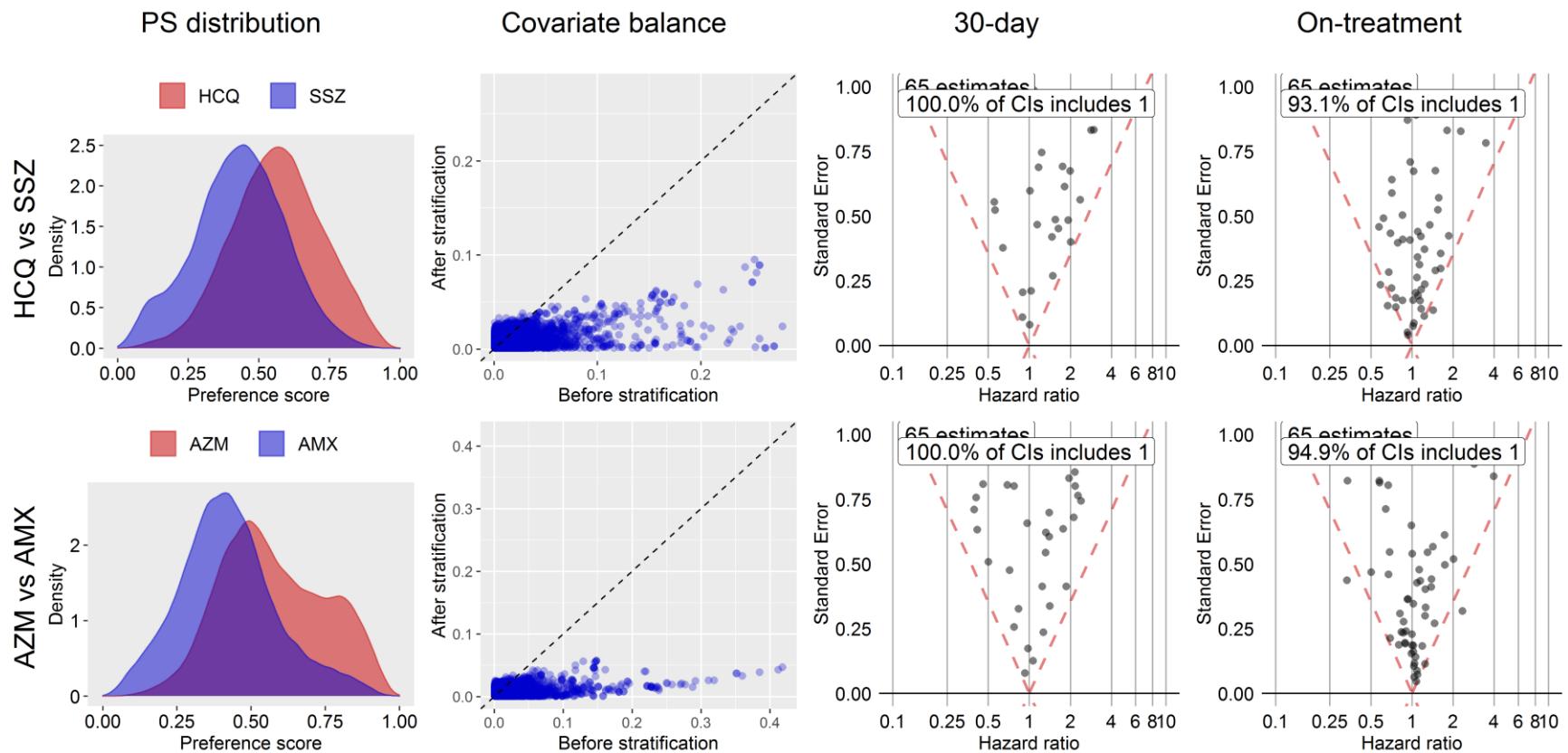
S9. Evidence evaluation diagnostics

Preference score overlap, covariate balance, and empirical calibration plots are reported below. The preference score is a transformation of the propensity score that adjusts for differences in the sizes of the two exposure cohorts in a pairwise comparison. A higher overlap indicates patients in the two cohorts were more similar in terms of their predicted probability of receiving one exposure relative to the other. In the covariate balance plots, each dot represents the standardizes difference of means for a single covariate before and after propensity score stratification. The empirical calibration plots show effect estimates for the negative controls where the true hazard ratio is expected to equal 1. Estimates below the diagonal dashed lines are statistically significantly different ($\alpha = 0.05$) from the true effect size. A well-calibrated estimator should produce the true effect sizes within the 95 percent confidence interval 95 percent of the time. Negative control estimates are not reported if fewer than 5 events are observed. *On-treatment* time-at-risk was unavailable in the PanTher databases so no negative control effects were estimated. In DAGermany and JMDC, the hydroxychloroquine+azithromycin and hydroxychloroquine+amoxicillin cohorts were of insufficient sample size for the cross-validation procedure for hyperparameter selection in the regularized regression used for fitting propensity scores, so diagnostics were not reported.

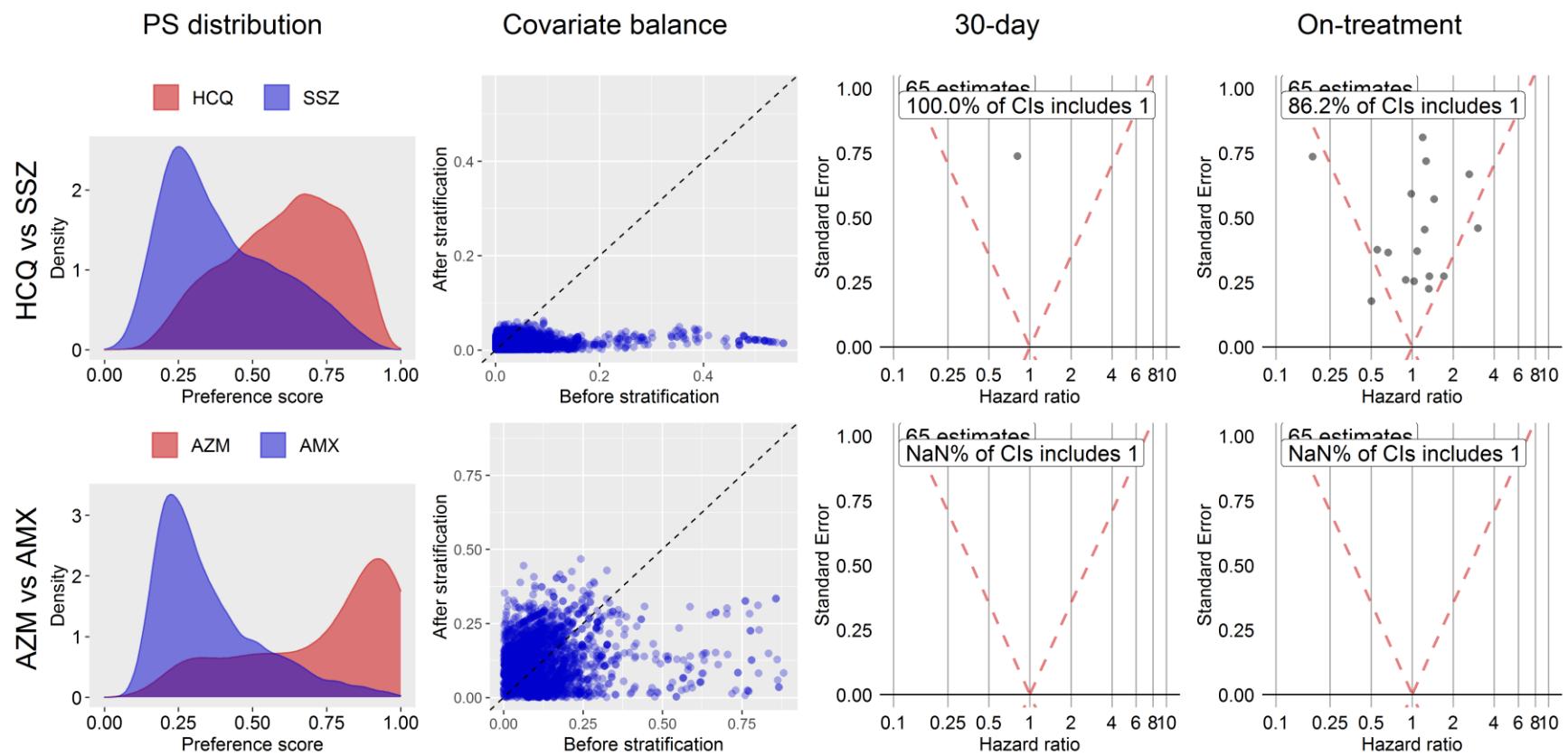
S9.1. AmbEMR



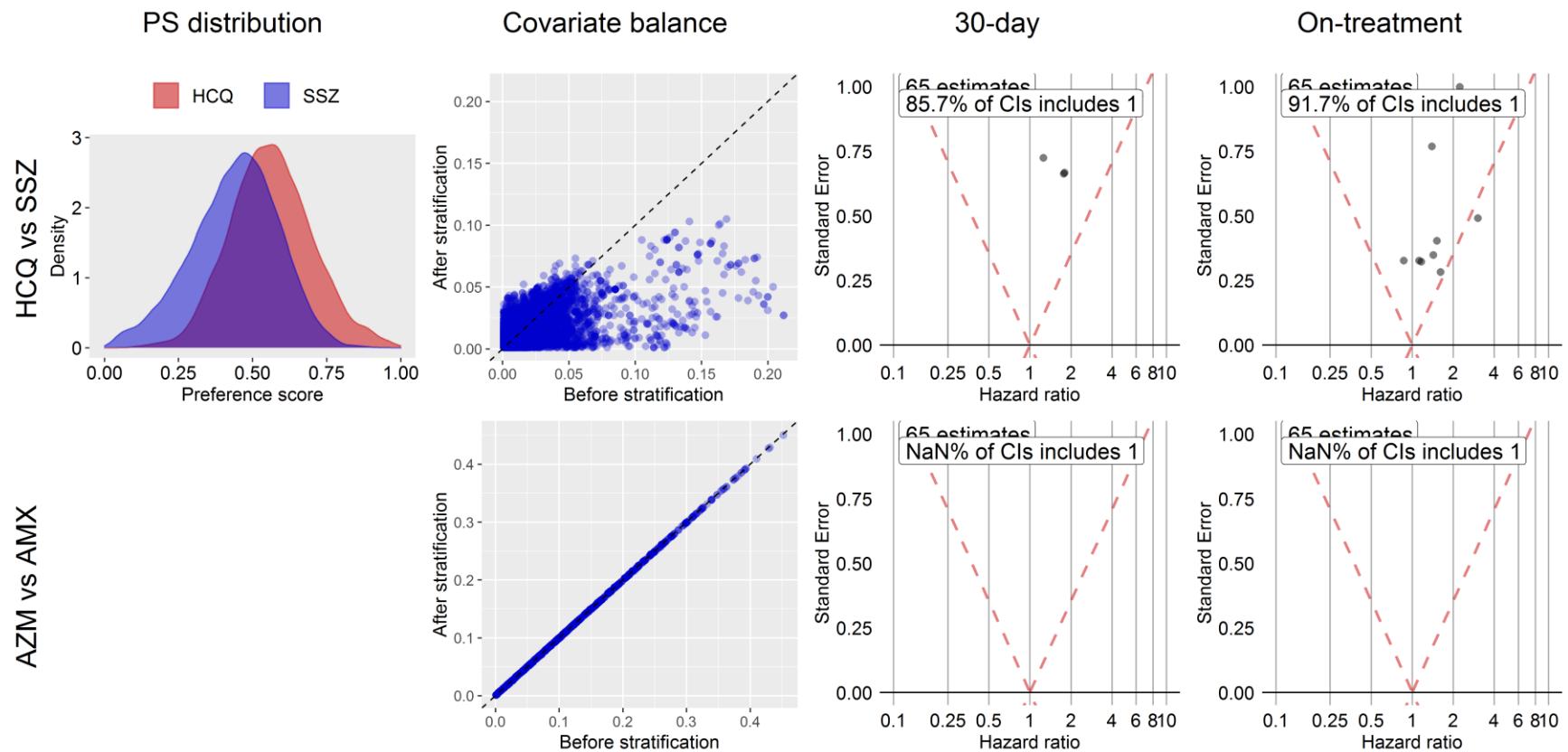
S9.2. CCAE



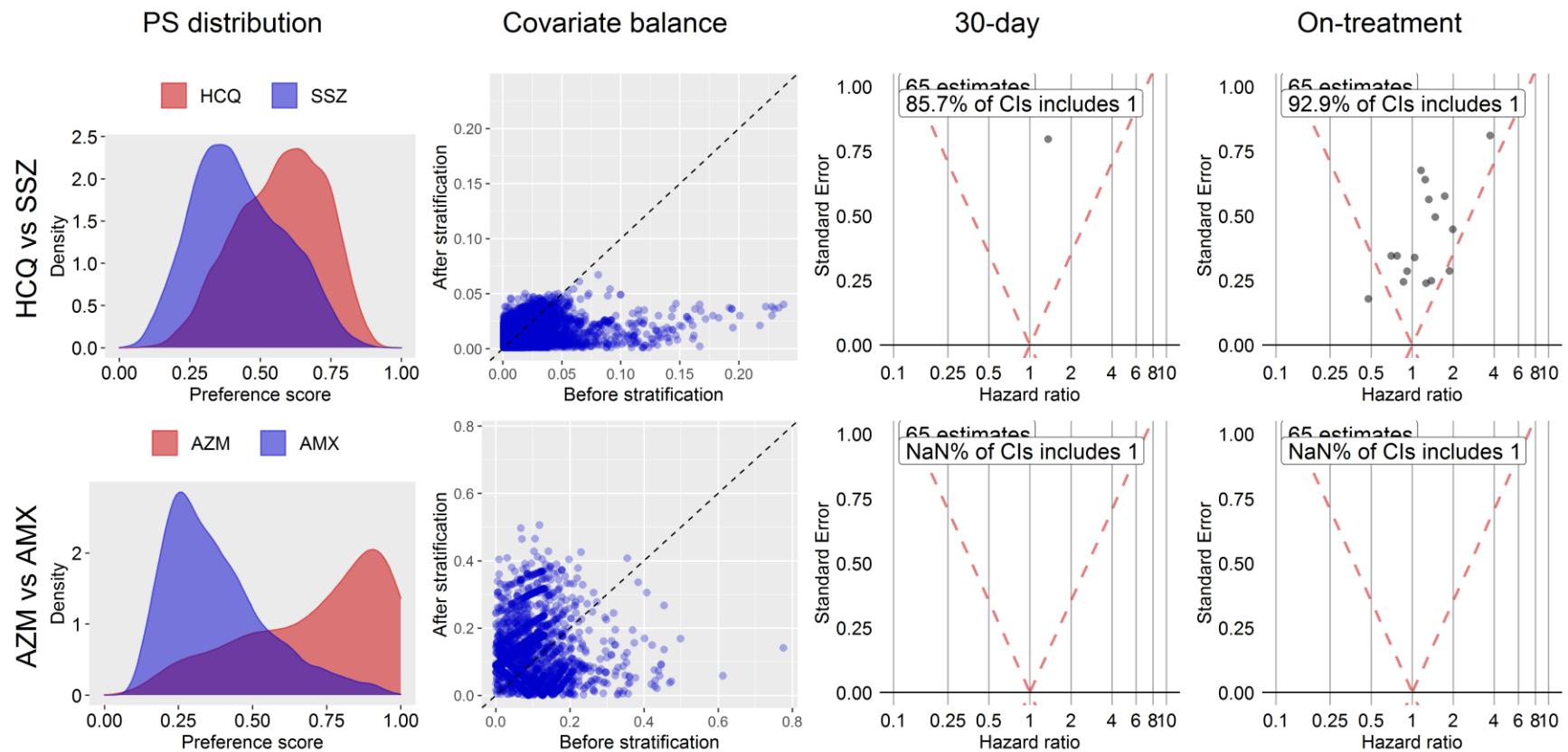
S9.3. CPRD



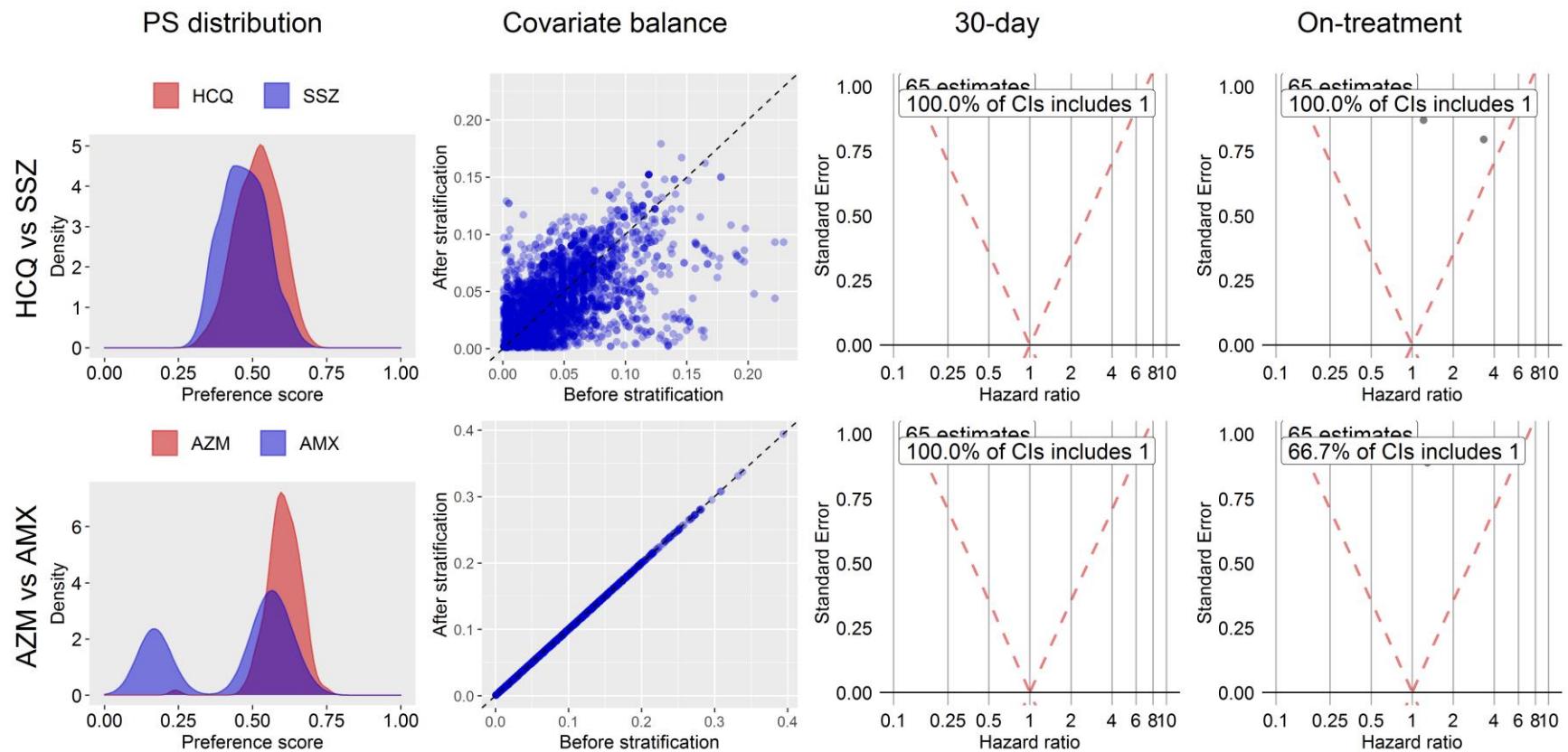
S9.4. DAGermany



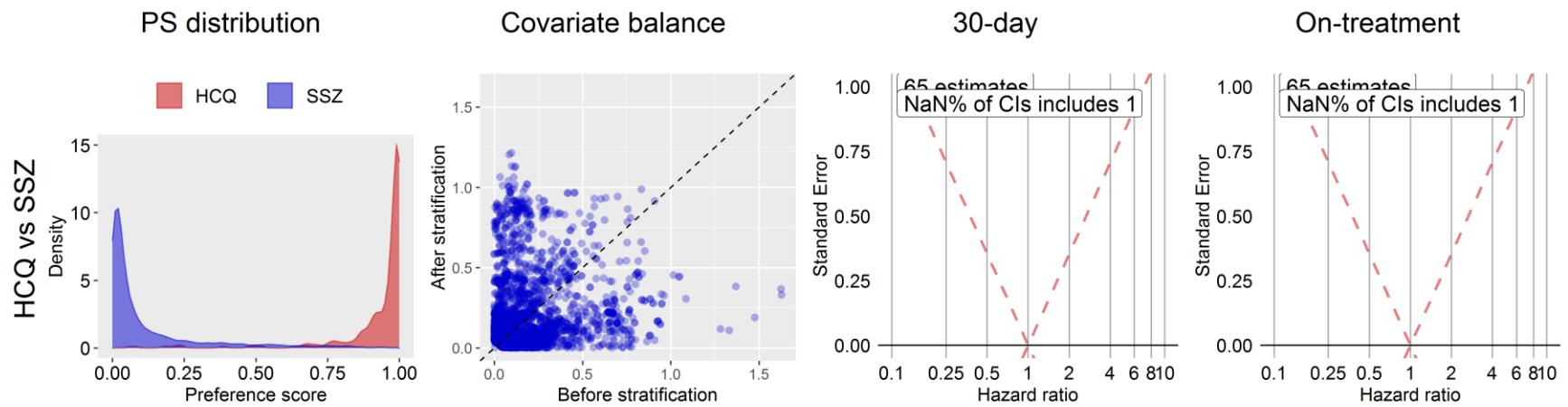
S9.5. IMRD



S9.6. IPCI

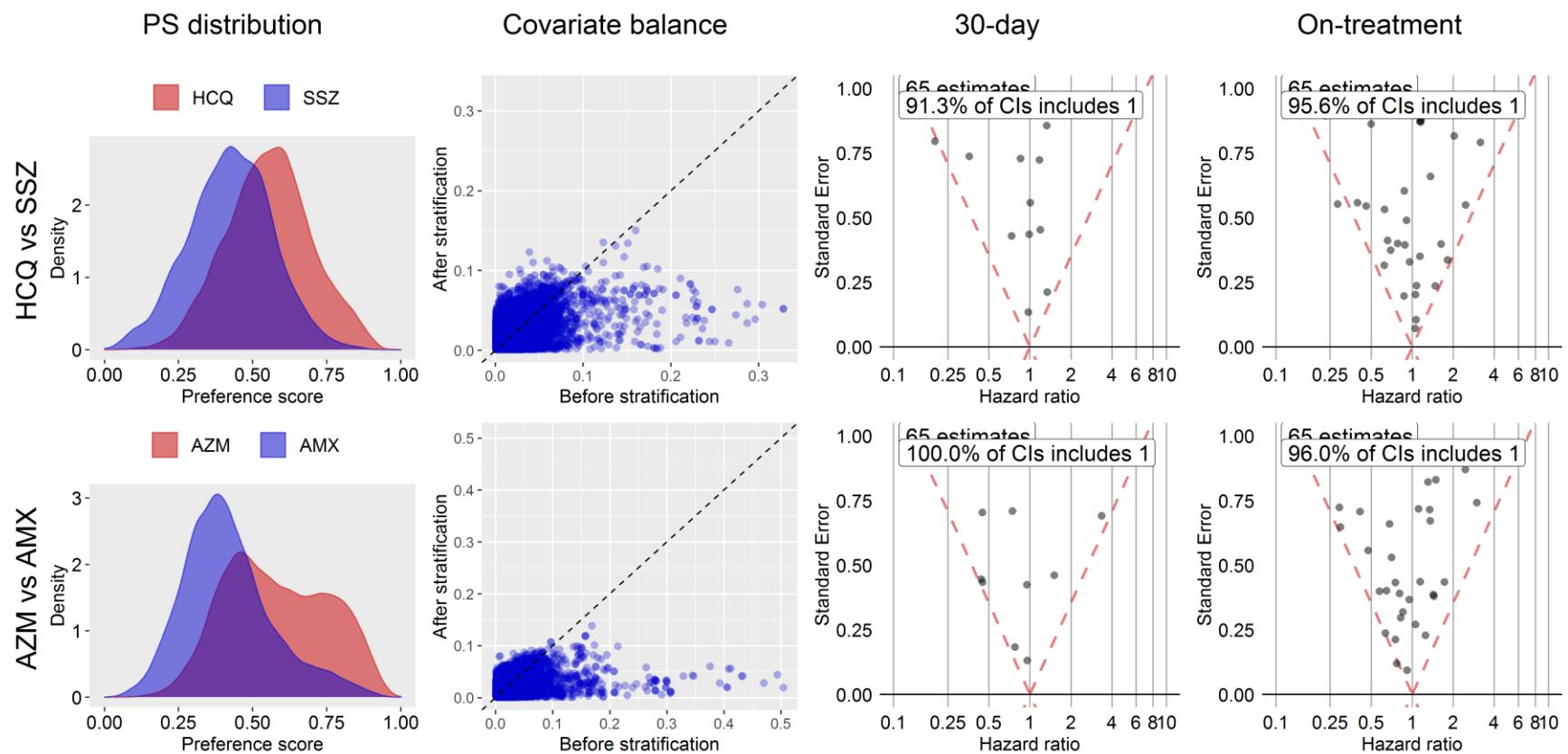


S9.7. JMDC

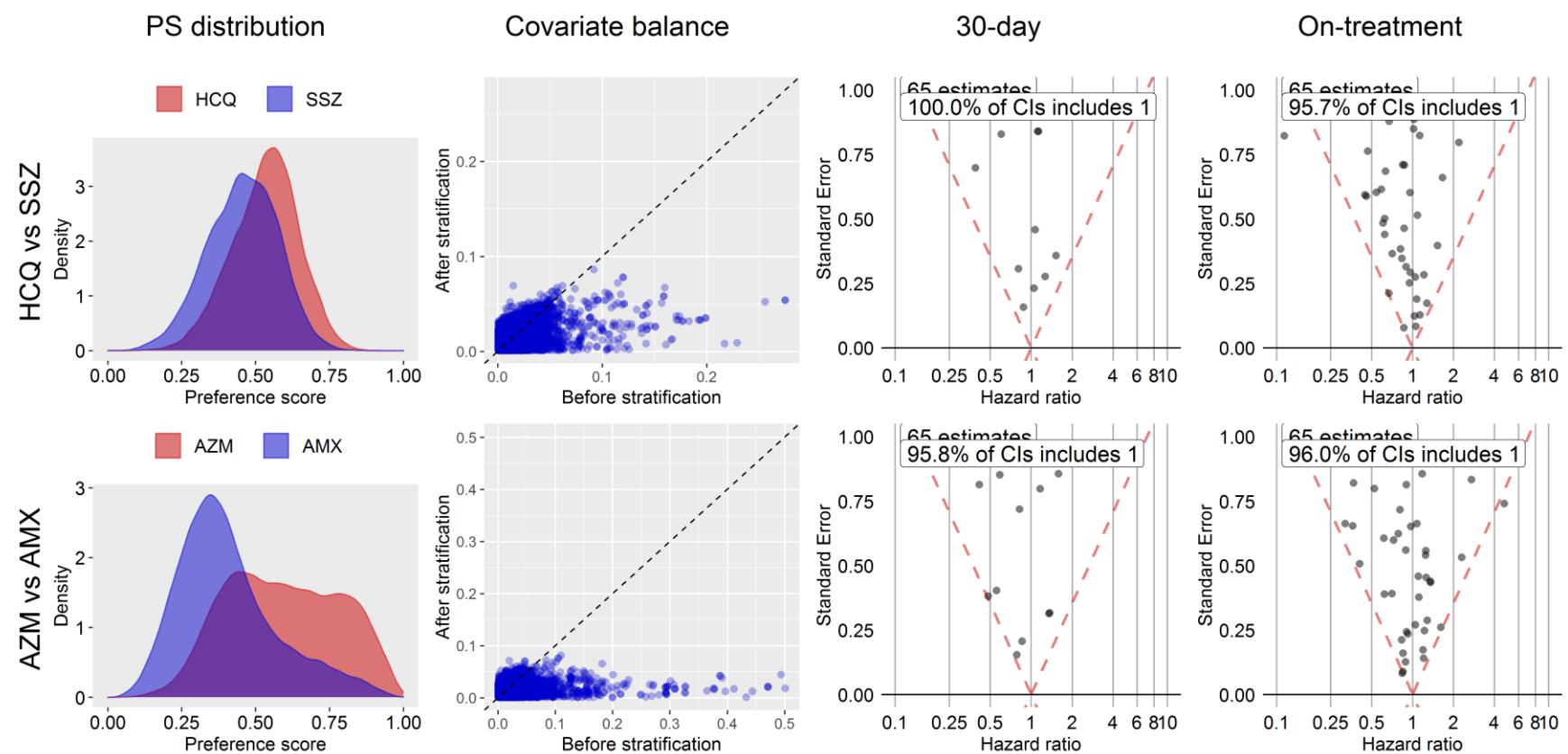


AZM vs AMX

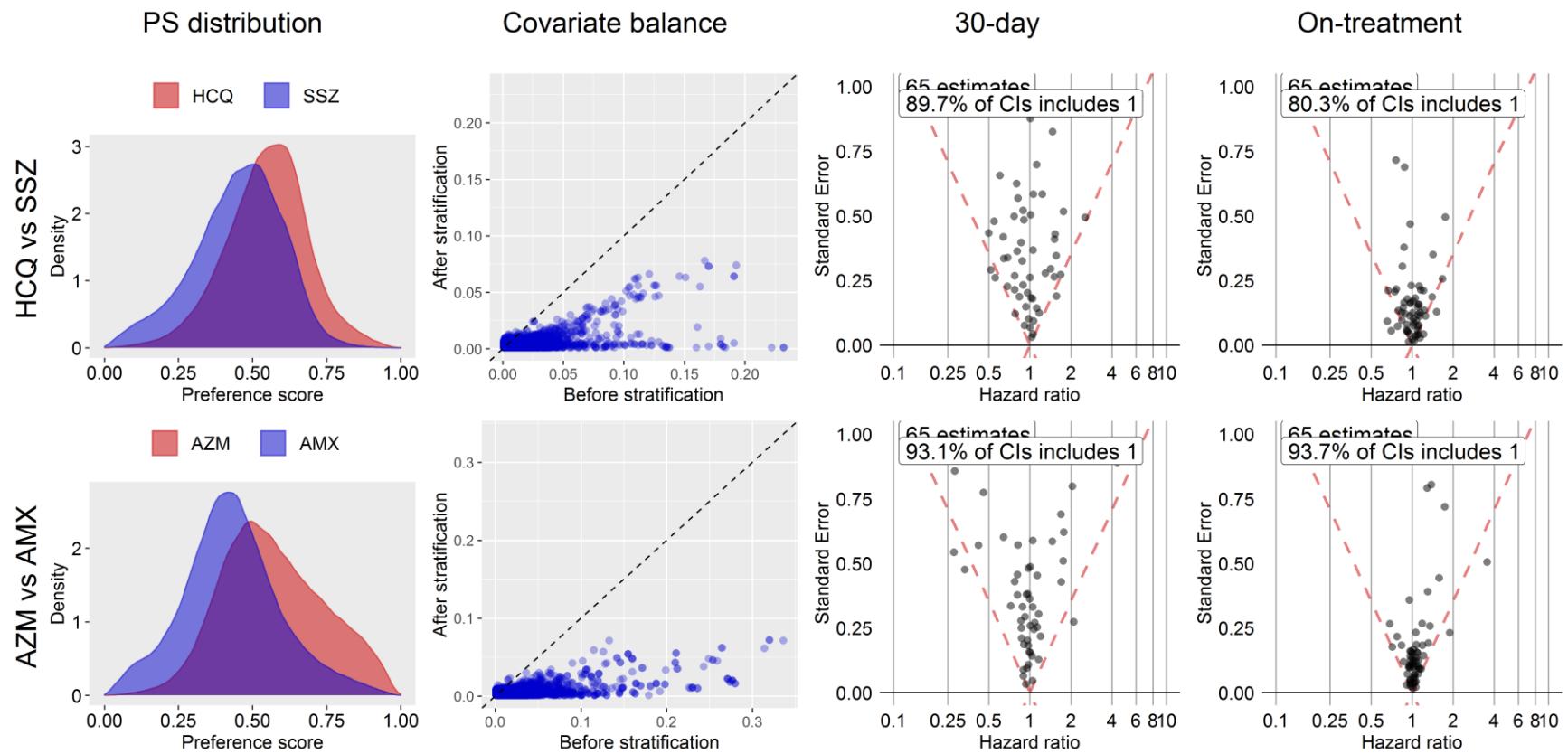
S9.8. MDCD



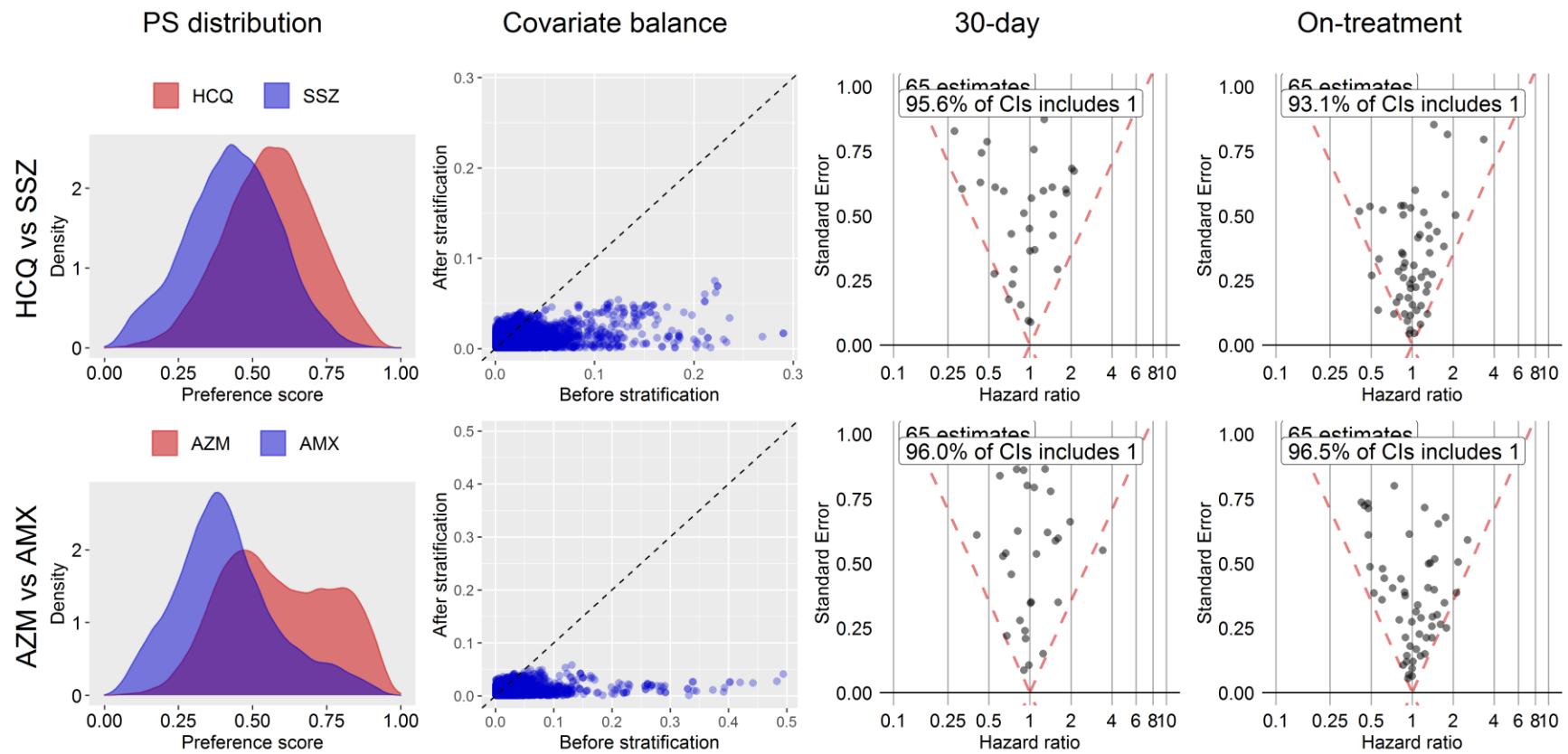
S9.9. MDCR



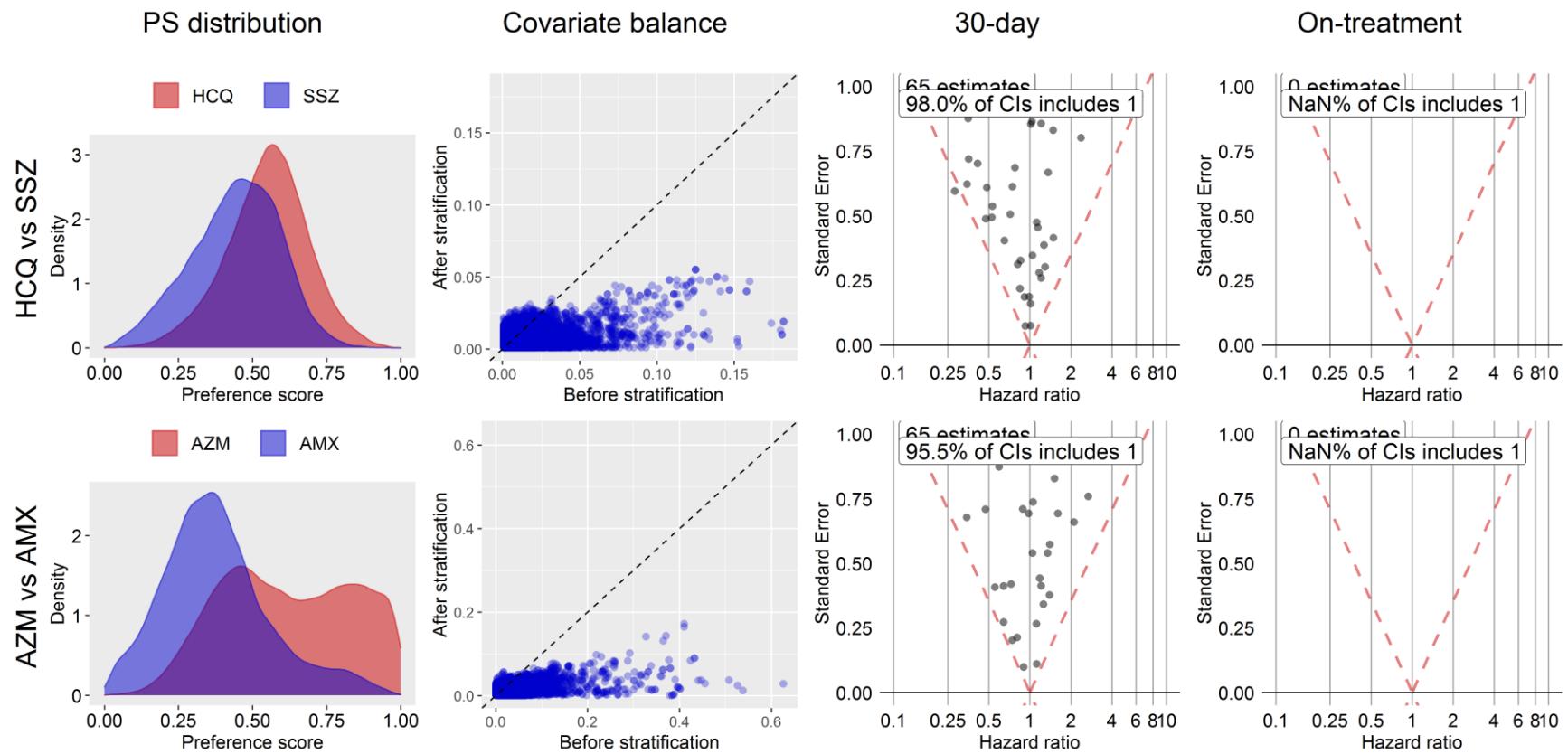
S9.10. OpenClaims



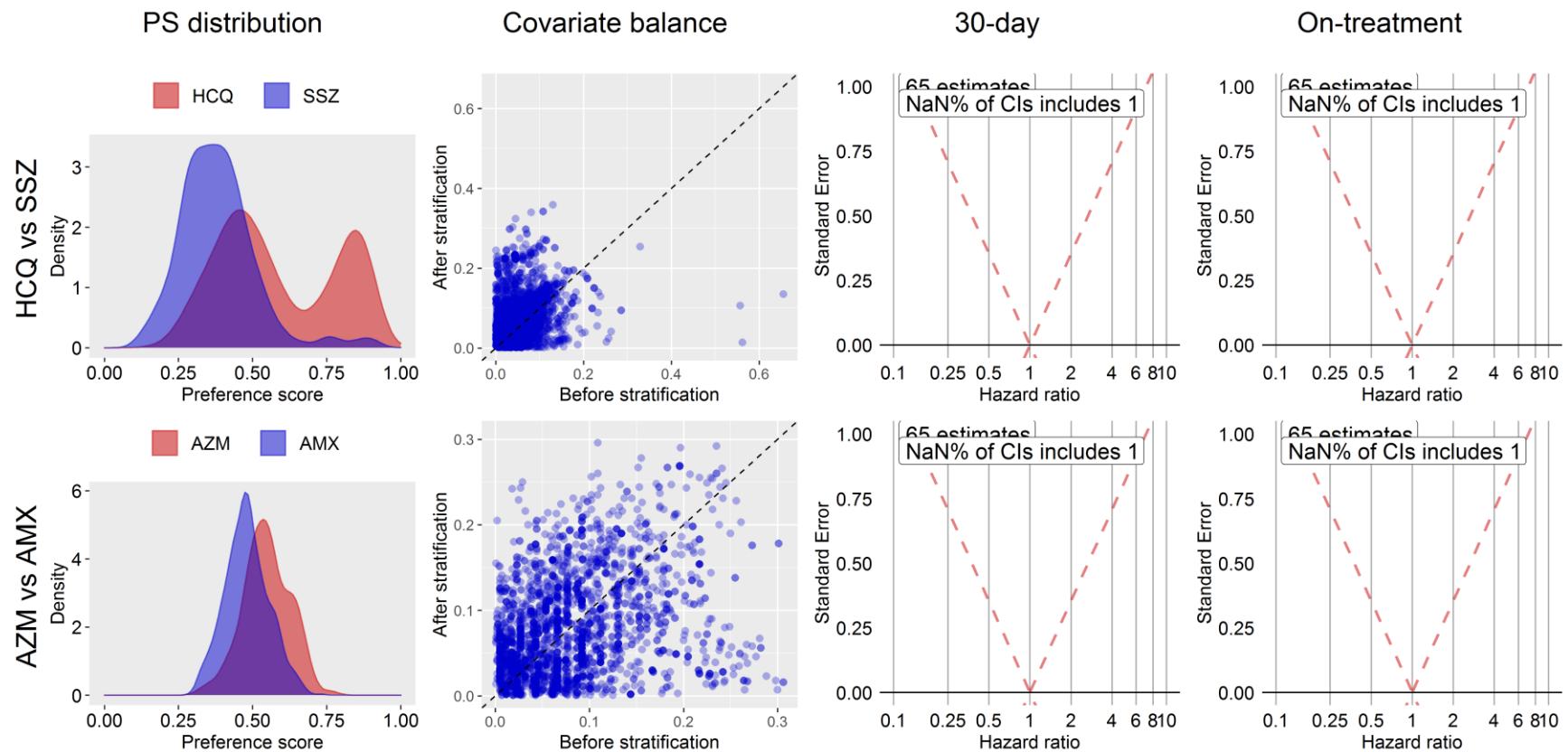
S9.11. Optum



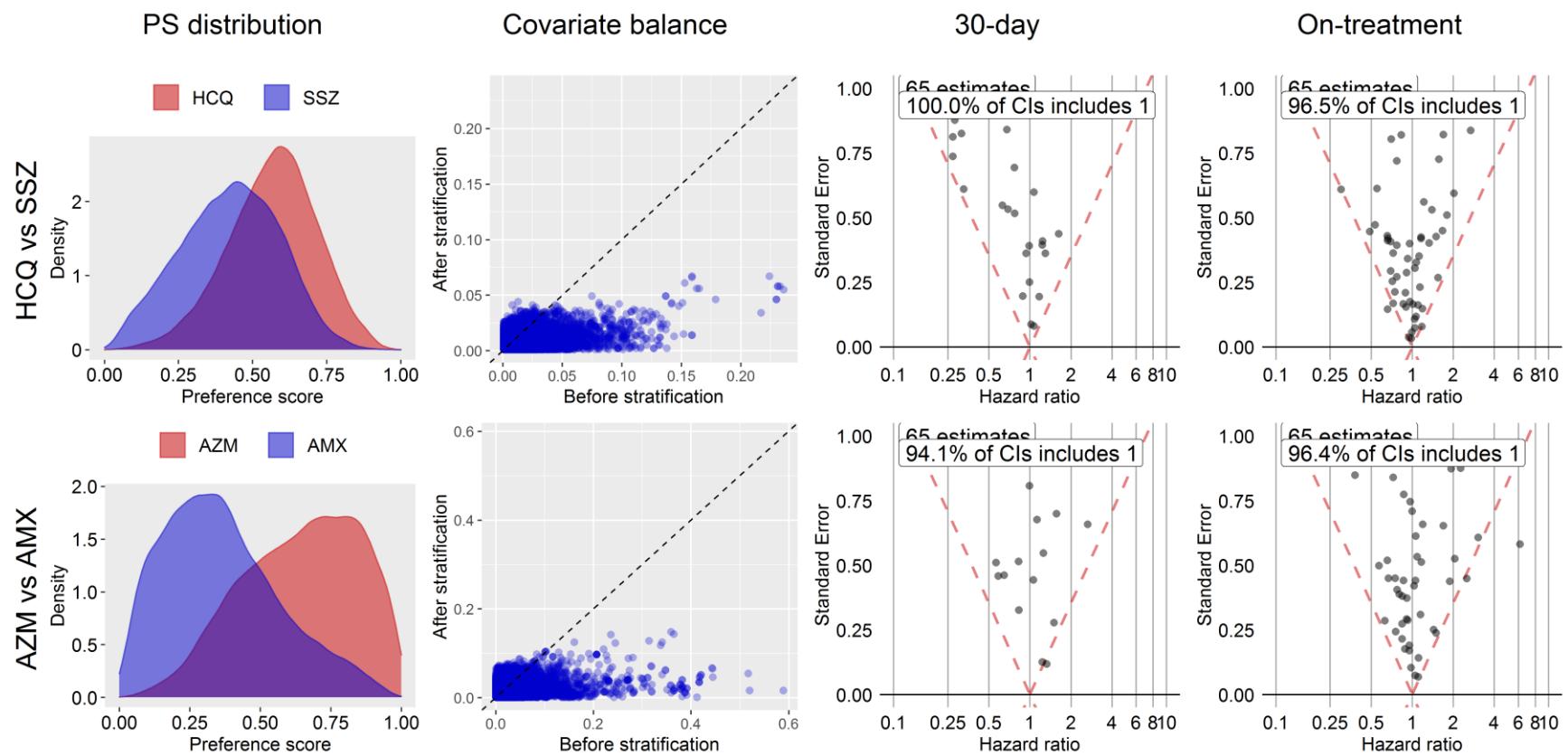
S9.12. PanTHER



S9.13. SIDIAP



S9.14. VA



S10. Self-controlled case series results for hydroxychloroquine

S10.1. CCAE

Outcome	Analysis	Cases	IRR	95% CI	95% CI	Calibrated P	Calibrated IRR	Calibrated 95% CI LB	Calibrated 95% CI UB
				LB	UB				
Myocardial infarction	Adjusting for event-dependent observation	14,483	0.91	0.83	0.99	0.53	0.91	0.69	1.21
	Primary analysis	14,483	0.91	0.84	1	0.57	0.92	0.7	1.22
Acute pancreatitis events	Adjusting for event-dependent observation	13,221	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	13,221	0.89	0.81	0.99	0.48	0.9	0.68	1.2
Acute renal failure	Adjusting for event-dependent observation	17,178	0.88	0.82	0.94	0.38	0.88	0.67	1.16
	Primary analysis	17,178	0.9	0.84	0.96	0.47	0.9	0.69	1.19
Gastrointestinal bleeding	Adjusting for event-dependent observation	15,638	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	15,638	1	0.92	1.07	0.94	1.01	0.76	1.32
Cardiac arrhythmia	Adjusting for event-dependent observation	14,328	0.94	0.86	1.03	0.71	0.95	0.72	1.25
	Primary analysis	14,328	0.94	0.86	1.03	0.74	0.95	0.72	1.26
Bradycardia	Adjusting for event-dependent observation	12,248	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	12,248	0.71	0.63	0.81	0.03	0.72	0.54	0.96
Chest pain or angina	Adjusting for event-dependent observation	13,399	0.9	0.81	1	0.53	0.91	0.69	1.21
	Primary analysis	13,399	0.9	0.81	1	0.52	0.91	0.69	1.21
End stage renal disease	Adjusting for event-dependent observation	11,303	1.01	0.65	1.16	0.93	1.02	0.69	1.51
	Primary analysis	11,303	1.02	0.88	1.18	0.85	1.03	0.76	1.39
Heart failure	Adjusting for event-dependent observation	15,626	0.98	0.9	1.05	0.91	0.99	0.75	1.29
	Primary analysis	15,626	0.98	0.91	1.06	0.93	0.99	0.75	1.3
Hepatic failure	Adjusting for event-dependent observation	11,254	0.67	0.57	0.78	0.01	0.68	0.5	0.92
	Primary analysis	11,254	0.64	0.54	0.75	0.01	0.64	0.47	0.88
Stroke	Adjusting for event-dependent observation	15,535	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	15,535	0.79	0.73	0.86	0.12	0.8	0.61	1.06
Cardiovascular events	Adjusting for event-dependent observation	15,200	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	15,200	0.86	0.79	0.93	0.3	0.86	0.66	1.14
Transient ischemic attack	Adjusting for event-dependent observation	14,563	0.9	0.85	0.98	0.51	0.91	0.69	1.2
	Primary analysis	14,563	0.91	0.83	0.99	0.55	0.92	0.7	1.21
Venous thromboembolism	Adjusting for event-dependent observation	16,595	0.78	0.5	0.84	0.22	0.79	0.54	1.15
	Primary analysis	16,595	0.8	0.75	0.86	0.14	0.81	0.62	1.07

IRR= Incidence Rate Ratio 95%CI LB= 95% Confidence Interval Lower Boundary 95%CI UB= 95% Confidence Interval Upper Boundary

S10.2. CPRD

Outcome	Analysis	Cases	IRR	95% CI LB	95% CI UB	Calibrated P	Calibrated IRR	Calibrated 95% CI LB	Calibrated 95% CI UB
Myocardial infarction	Adjusting for event-dependent observation	0	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	0	NA	NA	NA	NA	NA	NA	NA
Acute pancreatitis events	Adjusting for event-dependent observation	0	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	0	NA	NA	NA	NA	NA	NA	NA
Acute renal failure	Adjusting for event-dependent observation	0	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	0	NA	NA	NA	NA	NA	NA	NA
Gastrointestinal bleeding	Adjusting for event-dependent observation	0	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	0	NA	NA	NA	NA	NA	NA	NA
Cardiac arrhythmia	Adjusting for event-dependent observation	12,614	0.86	0.77	0.97	0.81	0.95	0.61	1.47
	Primary analysis	12,614	0.87	0.77	0.98	0.83	0.95	0.61	1.48
Bradycardia	Adjusting for event-dependent observation	7,094	0.6	0.18	1.68	0.49	0.65	0.2	2.16
	Primary analysis	7,094	0.62	0.19	1.69	0.51	0.68	0.21	2.18
Chest pain or angina	Adjusting for event-dependent observation	13,376	0.89	0.8	1	0.9	0.98	0.63	1.52
	Primary analysis	13,376	0.89	0.8	1	0.9	0.98	0.63	1.52
End stage renal disease	Adjusting for event-dependent observation	1,496	0.84	0.14	4.51	0.92	0.91	0.15	5.49
	Primary analysis	1,496	0.83	0.14	4.41	0.91	0.91	0.15	5.31
Heart failure	Adjusting for event-dependent observation	10,215	1.1	0.76	1.56	0.53	1.2	0.69	2.09
	Primary analysis	10,215	1.1	0.77	1.58	0.52	1.21	0.69	2.11
Hepatic failure	Adjusting for event-dependent observation	2,710	1	NA	NA	NA	NA	NA	NA
	Primary analysis	2,710	0.09	0	0.77	0.08	0.09	0.01	1.35
Stroke	Adjusting for event-dependent observation	0	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	0	NA	NA	NA	NA	NA	NA	NA
Cardiovascular events	Adjusting for event-dependent observation	0	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	0	NA	NA	NA	NA	NA	NA	NA
Transient ischemic attack	Adjusting for event-dependent observation	0	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	0	NA	NA	NA	NA	NA	NA	NA
Venous thromboembolism	Adjusting for event-dependent observation	12,454	0.64	0.56	0.72	0.12	0.7	0.45	1.09
	Primary analysis	12,454	0.63	0.55	0.71	0.11	0.69	0.44	1.07

IRR= Incidence Rate Ratio 95%CI LB= 95% Confidence Interval Lower Boundary 95%CI UB= 95% Confidence Interval Upper Boundary

S10.3. JMDC

Outcome	Analysis	Cases	IRR	95% CI LB	95% CI UB	Calibrated P	Calibrated IRR	Calibrated 95% CI LB	Calibrated 95% CI UB
Myocardial infarction	Adjusting for event-dependent observation	5,788	0	NA	0	NA	NA	NA	NA
	Primary analysis	5,789	0	NA	1.19	NA	NA	NA	NA
Acute pancreatitis events	Adjusting for event-dependent observation	5,307	1.42	0.06	25.06	0.62	2.18	0.11	43.82
	Primary analysis	5,307	1.38	0.06	13.42	0.6	2.11	0.14	31.5
Acute renal failure	Adjusting for event-dependent observation	3,598	0.86	0.18	3.12	0.73	1.33	0.31	5.71
	Primary analysis	3,598	0.91	0.19	3.37	0.69	1.39	0.32	6.12
Gastrointestinal bleeding	Adjusting for event-dependent observation	10,009	0.16	0.01	0.82	0.25	0.25	0.03	2.44
	Primary analysis	10,009	0.16	0.01	0.79	0.24	0.24	0.03	2.38
Cardiac arrhythmia	Adjusting for event-dependent observation	10,034	0.4	0.11	1.2	0.5	0.62	0.18	2.15
	Primary analysis	10,034	0.38	0.1	1.11	0.43	0.58	0.17	1.98
Bradycardia	Adjusting for event-dependent observation	5,813	2.4	0.11	20.87	0.35	3.67	0.26	50.91
	Primary analysis	5,813	2.41	0.11	21.25	0.35	3.69	0.26	51.54
Chest pain or angina	Adjusting for event-dependent observation	10,082	0.6	0.32	1.09	0.74	0.92	0.45	1.85
	Primary analysis	10,082	0.6	0.31	1.08	0.74	0.91	0.45	1.84
End stage renal disease	Adjusting for event-dependent observation	2,439	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	2,445	NA	NA	NA	NA	NA	NA	NA
Heart failure	Adjusting for event-dependent observation	10,071	0.67	0.34	1.23	0.77	1.02	0.5	2.1
	Primary analysis	10,071	0.66	0.34	1.22	0.76	1.02	0.49	2.08
Hepatic failure	Adjusting for event-dependent observation	3,014	1	0.04	15.31	0.79	1.54	0.08	30.15
	Primary analysis	3,014	0.97	0.04	18.75	0.81	1.48	0.07	33.23
Stroke	Adjusting for event-dependent observation	10,001	0.74	0.23	2.1	0.8	1.13	0.36	3.55
	Primary analysis	10,001	0.74	0.23	2.12	0.8	1.14	0.36	3.59
Cardiovascular events	Adjusting for event-dependent observation	10,035	0.33	0.13	0.72	0.21	0.51	0.21	1.25
	Primary analysis	10,035	0.33	0.13	0.72	0.2	0.5	0.2	1.25
Transient ischemic attack	Adjusting for event-dependent observation	2,208	0	NA	0	NA	NA	NA	NA
	Primary analysis	2,208	0	NA	38.67	NA	NA	NA	NA
Venous thromboembolism	Adjusting for event-dependent observation	10,029	0.98	0.41	2.14	0.45	1.51	0.62	3.67
	Primary analysis	10,029	0.98	0.41	2.14	0.45	1.51	0.62	3.67

IRR= Incidence Rate Ratio 95%CI LB= 95% Confidence Interval Lower Boundary 95%CI UB= 95% Confidence Interval Upper Boundary

S10.4. MDCD

Outcome	Analysis	Cases	IRR	95% CI LB	95% CI UB	Calibrated P	Calibrated d IRR	Calibrated 95% CI LB	Calibrated 95% CI UB
Myocardial infarction	Adjusting for event-dependent observation	11,276	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	11,276	0.97	0.83	1.13	0.39	0.89	0.7	1.15
Acute pancreatitis events	Adjusting for event-dependent observation	10,851	1.22	1.02	1.46	0.39	1.13	0.86	1.47
	Primary analysis	10,851	1.22	1.02	1.45	0.4	1.12	0.86	1.46
Acute renal failure	Adjusting for event-dependent observation	12,714	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	12,714	1.09	0.98	1.21	0.92	1	0.8	1.25
Gastrointestinal bleeding	Adjusting for event-dependent observation	12,000	1.03	0.91	1.16	0.66	0.95	0.75	1.2
	Primary analysis	12,000	1.03	0.91	1.17	0.69	0.95	0.76	1.2
Cardiac arrhythmia	Adjusting for event-dependent observation	12,340	1.01	0.89	1.13	0.53	0.93	0.74	1.17
	Primary analysis	12,340	1.01	0.89	1.13	0.54	0.93	0.74	1.17
Bradycardia	Adjusting for event-dependent observation	10,541	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	10,541	0.8	0.64	1	0.05	0.74	0.55	0.99
Chest pain or angina	Adjusting for event-dependent observation	11,642	1.17	0.98	1.34	0.59	1.07	0.84	1.38
	Primary analysis	11,642	1.16	1.01	1.34	0.58	1.07	0.84	1.36
End stage renal disease	Adjusting for event-dependent observation	10,562	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	10,562	1.34	1.1	1.64	0.15	1.24	0.93	1.64
Heart failure	Adjusting for event-dependent observation	12,030	1.03	0.91	1.17	0.68	0.95	0.75	1.2
	Primary analysis	12,030	1.03	0.91	1.17	0.68	0.95	0.75	1.2
Hepatic failure	Adjusting for event-dependent observation	10,278	0.91	0.7	1.17	0.29	0.83	0.6	1.16
	Primary analysis	10,278	0.83	0.64	1.09	0.13	0.77	0.55	1.07
Stroke	Adjusting for event-dependent observation	11,662	0.98	0.86	1.12	0.4	0.9	0.71	1.14
	Primary analysis	11,662	0.92	0.81	1.06	0.2	0.85	0.67	1.08
Cardiovascular events	Adjusting for event-dependent observation	12,067	0.99	0.88	1.12	0.46	0.91	0.73	1.15
	Primary analysis	12,067	0.93	0.82	1.05	0.21	0.86	0.68	1.08
Transient ischemic attack	Adjusting for event-dependent observation	10,938	1.02	0.86	1.22	0.66	0.94	0.72	1.23
	Primary analysis	10,938	1	0.84	1.19	0.57	0.92	0.71	1.2
Venous thromboembolism	Adjusting for event-dependent observation	12,646	0.96	0.86	1.07	0.29	0.88	0.71	1.1
	Primary analysis	12,646	0.95	0.85	1.05	0.25	0.87	0.7	1.09

IRR= Incidence Rate Ratio 95%CI LB= 95% Confidence Interval Lower Boundary 95%CI UB= 95% Confidence Interval Upper Boundary

S10.5. MDCR

Outcome	Analysis	Cases	IRR	CI95LB	CI95UB	Calibrated P	Calibrated IRR	Calibrated CI95LB	Calibrated CI95UB
Myocardial infarction	Adjusting for event-dependent observation	14,554	1.04	0.96	1.13	0.47	1.09	0.86	1.39
	Primary analysis	14,554	0.94	0.86	1.03	0.91	0.99	0.78	1.26
Acute pancreatitis events	Adjusting for event-dependent observation	10,998	0.98	0.82	1.16	0.86	1.03	0.77	1.36
	Primary analysis	10,998	0.94	0.79	1.12	0.93	0.99	0.74	1.32
Acute renal failure	Adjusting for event-dependent observation	15,657	1.03	0.95	1.11	0.53	1.08	0.85	1.37
	Primary analysis	15,657	0.92	0.85	1	0.8	0.97	0.76	1.23
Gastrointestinal bleeding	Adjusting for event-dependent observation	15,255	0.97	0.9	1.05	0.85	1.02	0.81	1.3
	Primary analysis	15,255	0.92	0.84	0.99	0.75	0.96	0.76	1.22
Cardiac arrhythmia	Adjusting for event-dependent observation	13,552	0.81	0.73	0.9	0.22	0.85	0.67	1.09
	Primary analysis	13,552	0.82	0.74	0.9	0.24	0.86	0.67	1.1
Bradycardia	Adjusting for event-dependent observation	12,752	0.83	0.74	0.93	0.29	0.87	0.68	1.12
	Primary analysis	12,752	0.83	0.74	0.93	0.28	0.87	0.68	1.12
Chest pain or angina	Adjusting for event-dependent observation	14,060	0.91	0.82	0.99	0.69	0.95	0.75	1.21
	Primary analysis	14,060	0.9	0.82	0.99	0.65	0.94	0.74	1.2
End stage renal disease	Adjusting for event-dependent observation	10,839	0.84	0.69	1.01	0.41	0.88	0.66	1.18
	Primary analysis	10,839	0.84	0.7	1.02	0.42	0.88	0.66	1.19
Heart failure	Adjusting for event-dependent observation	14,531	1.06	0.98	1.16	0.37	1.12	0.88	1.42
	Primary analysis	14,531	1.04	0.96	1.13	0.48	1.09	0.86	1.39
Hepatic failure	Adjusting for event-dependent observation	10,325	0.78	0.6	1.03	0.28	0.82	0.58	1.17
	Primary analysis	10,325	0.77	0.59	1.01	0.25	0.81	0.57	1.15
Stroke	Adjusting for event-dependent observation	14,536	0.96	0.88	1.05	0.91	1.01	0.8	1.29
	Primary analysis	14,536	0.89	0.81	0.97	0.57	0.93	0.73	1.18
Cardiovascular events	Adjusting for event-dependent observation	14,573	1.05	0.97	1.14	0.43	1.1	0.87	1.4
	Primary analysis	14,573	0.97	0.89	1.05	0.89	1.02	0.8	1.29
Transient ischemic attack	Adjusting for event-dependent observation	13,727	0.95	0.87	1.05	0.93	1	0.79	1.28
	Primary analysis	13,727	0.93	0.84	1.02	0.82	0.97	0.76	1.24
Venous thromboembolism	Adjusting for event-dependent observation	16,067	0.72	0.67	0.78	0.02	0.76	0.6	0.96
	Primary analysis	16,067	0.68	0.63	0.73	0.01	0.71	0.56	0.91

IRR= Incidence Rate Ratio 95%CI LB= 95% Confidence Interval Lower Boundary 95%CI UB= 95% Confidence Interval Upper Boundary

S10.6. Optum

Outcome	Analysis	Cases	IRR	CI95LB	CI95UB	Calibrated P	Calibrated IRR	Calibrated CI95LB	Calibrated CI95UB
Myocardial infarction	Adjusting for event-dependent observation	14,351	1.11	1.02	1.21	0.51	1.11	0.81	1.54
	Primary analysis	14,351	1.01	0.92	1.1	0.92	1.02	0.74	1.4
Acute pancreatitis events	Adjusting for event-dependent observation	12,730	1.04	0.93	1.16	0.78	1.05	0.75	1.46
	Primary analysis	12,730	1.04	0.93	1.16	0.78	1.05	0.75	1.46
Acute renal failure	Adjusting for event-dependent observation	14,919	0.96	0.48	1.04	0.88	0.96	0.58	1.59
	Primary analysis	14,919	0.99	0.91	1.07	0.94	0.99	0.72	1.37
Gastrointestinal bleeding	Adjusting for event-dependent observation	14,884	1.12	1.03	1.22	0.46	1.13	0.82	1.55
	Primary analysis	14,884	1.05	0.97	1.14	0.74	1.06	0.77	1.46
Cardiac arrhythmia	Adjusting for event-dependent observation	13,388	1.02	0.92	1.13	0.88	1.03	0.74	1.42
	Primary analysis	13,388	1.03	0.93	1.13	0.85	1.03	0.74	1.43
Bradycardia	Adjusting for event-dependent observation	13,682	0.9	0.77	1	0.58	0.91	0.65	1.27
	Primary analysis	13,682	0.92	0.83	1.01	0.63	0.92	0.67	1.28
Chest pain or angina	Adjusting for event-dependent observation	13,093	1.06	0.96	1.18	0.7	1.07	0.77	1.48
	Primary analysis	13,093	1.06	0.95	1.17	0.72	1.06	0.76	1.47
End stage renal disease	Adjusting for event-dependent observation	11,891	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	11,891	1.26	1.11	1.42	0.17	1.26	0.9	1.76
Heart failure	Adjusting for event-dependent observation	13,817	1.14	1.04	1.25	0.41	1.15	0.83	1.58
	Primary analysis	13,817	1.12	1.02	1.23	0.47	1.13	0.82	1.56
Hepatic failure	Adjusting for event-dependent observation	11,571	NA	NA	NA	NA	NA	NA	NA
	Primary analysis	11,571	0.72	0.62	0.83	0.07	0.73	0.52	1.02
Stroke	Adjusting for event-dependent observation	14,342	0.97	0.89	1.05	0.86	0.97	0.7	1.34
	Primary analysis	14,342	0.89	0.82	0.97	0.51	0.9	0.65	1.24
Cardiovascular events	Adjusting for event-dependent observation	14,189	0.9	0.18	0.98	0.82	0.9	0.37	2.21
	Primary analysis	14,189	0.94	0.86	1.03	0.75	0.95	0.69	1.31
Transient ischemic attack	Adjusting for event-dependent observation	14,895	0.94	0.86	1.02	0.73	0.94	0.68	1.3
	Primary analysis	14,895	0.93	0.85	1.01	0.68	0.93	0.68	1.29
Venous thromboembolism	Adjusting for event-dependent observation	15,377	0.85	0.79	0.92	0.36	0.86	0.62	1.18
	Primary analysis	15,377	0.84	0.77	0.91	0.3	0.84	0.61	1.16

IRR= Incidence Rate Ratio 95%CI LB= 95% Confidence Interval Lower Boundary 95%CI UB= 95% Confidence Interval Upper Boundary

S11. Literature review sources

S11.1. PubMed search strategy

((((((("Antirheumatic Agents"[Mesh]) OR (((disease modifying antirheumatic drug*[Title/Abstract] OR disease modifying anti-rheumatic drug*[Title/Abstract] OR disease modifying antirheumatic agent*[Title/Abstract] OR disease modifying anti-rheumatic agent*[Title/Abstract]) OR (DMARD*[Title/Abstract])))) OR (((((((("hydroxychloroquine"[MeSH Terms]) OR Hydroxychloroquine[Title/Abstract]) OR chloroquinol[Title/Abstract]) OR ercoquin[Title/Abstract]) OR hydrochloroquine[Title/Abstract]) OR hydrochloroquine[Title/Abstract]) OR oxychloroquine[Title/Abstract]) OR plaquenil[Title/Abstract]) OR quensyl[Title/Abstract]) OR "sn 8137"[Title/Abstract])) OR (((((((("tocilizumab"[MeSH Terms]) OR tocilizumab[Title/Abstract]) OR actemra*[Title/Abstract]) OR atlizumab[Title/Abstract]) OR lusinex[Title/Abstract]) OR "r 1569"[Title/Abstract]) OR r1569[Title/Abstract]) OR roactemra[Title/Abstract])) OR "baricitinib"[Supplementary Concept]) OR ((((((baricitinib[Title/Abstract]) OR "incb 028050"[Title/Abstract]) OR "incb 28050"[Title/Abstract]) OR "incb028050"[Title/Abstract]) OR "incb28050"[Title/Abstract]) OR "ly 3009104"[Title/Abstract]) OR "ly3009104"[Title/Abstract]) OR "olumiant[Title/Abstract])) OR (((((((((((((((("methotrexate"[MeSH Terms]) OR methotrexate[Title/Abstract]) OR "a methotrexine"[Title/Abstract]) OR abitrexate[Title/Abstract]) OR amethopterin*[Title/Abstract]) OR ametopterine[Title/Abstract]) OR antifolane[Title/Abstract]) OR biotrexate[Title/Abstract]) OR canceren[Title/Abstract]) OR "cl 14377"[Title/Abstract]) OR cl14377[Title/Abstract]) OR emtexate[Title/Abstract]) OR emthexat*[Title/Abstract]) OR enthexate[Title/Abstract]) OR emtrexate[Title/Abstract]) OR farmitrexat*[Title/Abstract]) OR farmotrex[Title/Abstract]) OR folex*[Title/Abstract]) OR ifamet[Title/Abstract]) OR imeth[Title/Abstract]) OR "intradose MTX"[Title/Abstract]) OR jylamvo[Title/Abstract]) OR lantare[Title/Abstract]) OR ledertrexate[Title/Abstract])) OR (((((((((((((((((((maxtrex[Title/Abstract]) OR metex[Title/Abstract]) OR methoblastin[Title/Abstract]) OR methohexate[Title/Abstract]) OR methotrate[Title/Abstract]) OR methotrexat*[Title/Abstract]) OR methotrexate[Title/Abstract]) OR methylaminopterin*[Title/Abstract]) OR meticil[Title/Abstract]) OR metoject[Title/Abstract]) OR metothrexate[Title/Abstract]) OR metotrex*[Title/Abstract]) OR metrex[Title/Abstract]) OR mexate*[Title/Abstract]) OR "mpi 5004"[Title/Abstract]) OR mpi5004[Title/Abstract]) OR MTX[Title/Abstract]) OR neutrexate[Title/Abstract]) OR nordimet[Title/Abstract]) OR novatrex[Title/Abstract]) OR "nsc 740"[Title/Abstract]) OR nsc740 AND "[Title/Abstract]) OR otrexup[Title/Abstract]) OR rasuvo[Title/Abstract]) OR reumatrex[Title/Abstract]) OR rheumatrex[Title/Abstract]) OR texate*[Title/Abstract]) OR texorate[Title/Abstract]) OR trexall[Title/Abstract]) OR xaken[Title/Abstract]) OR xatmep[Title/Abstract]) OR zexate[Title/Abstract])) OR (((((((((((((((((sulfasalazine[MeSH Terms]) OR salazosulfapyridine[Title/Abstract]) OR " AND azulfidine en-tabs AND "[Title/Abstract]) OR azopyrin*[Title/Abstract]) OR azosulfidine[Title/Abstract]) OR azulfid*[Title/Abstract]) OR azulfin[Title/Abstract]) OR benzosulfa[Title/Abstract]) OR " AND colo pleon AND "[Title/Abstract]) OR " AND colo-pleon AND "[Title/Abstract]) OR colopleon[Title/Abstract]) OR disalazin[Title/Abstract]) OR gastropyrin[Title/Abstract]) OR " AND pleon ra AND "[Title/Abstract]) OR " AND pyralin en AND "[Title/Abstract]) OR rorasul[Title/Abstract]) OR rosulfant[Title/Abstract]) OR " AND s.a.s.-500 AND "[Title/Abstract]) OR salaz*[Title/Abstract]) OR " AND salicyl azo sulfapyridine AND "[Title/Abstract]) OR salicylazosulfapyridin*[Title/Abstract]) OR salisulf[Title/Abstract]) OR salopyr[Title/Abstract]) OR sardine[Title/Abstract]) OR " AND sas 500 Title/Abstract]) OR sulcolon[Title/Abstract]) OR sulfasalazine[Title/Abstract]) OR sulfasalizine[Title/Abstract]) OR sulfosalazine[Title/Abstract]) OR sulphasalazine[Title/Abstract]) OR zopyrin[Title/Abstract])))) AND (((((((((((((((("coronavirus infections"[MeSH Terms]) OR coronavirus*[Title/Abstract]) OR coronavirus*[Title/Abstract]) OR "2019-nCoV"[Title/Abstract]) OR "COVID-19"[Title/Abstract]) OR "CORVID-19"[Title/Abstract]) OR "WN-CoV"[Title/Abstract]) OR "HCoV-19"[Title/Abstract]) OR Cov[Title/Abstract]) OR ncov[Title/Abstract]) OR "SARS-CoV-2"[Title/Abstract]) OR SARSCov19[Title/Abstract]) OR ncov*wuhan[Title/Abstract]) OR "severe acute respiratory syndrome"[MeSH Terms]) OR "severe acute respiratory syndrome"[Title/Abstract]) OR "sudden acute respiratory syndrome"[Title/Abstract]) OR SARS[Title/Abstract]) OR MERS[Title/Abstract]) OR "Middle East Respiratory Syndrome"[Title/Abstract]) OR sars coronavirus[MeSH Terms]) OR viral infection[Title/Abstract]) OR viral disease[Title/Abstract]) OR virus infection[Title/Abstract]) OR virus disease[Title/Abstract]) OR viral pneumonia[MeSH Terms]) OR viral pneumonia[Title/Abstract]) OR influenza[MeSH Terms]) OR influenza[Title/Abstract]) OR flu[Title]))

S11.2. Embase search strategy (1974 to present)

1	disease modifying antirheumatic drug/ (16237)
2	disease modifying antirheumatic drug*.ti,ab. (6045)
3	disease modifying anti-rheumatic drug*.ti,ab. (3750)
4	disease modifying antirheumatic agent*.ti,ab. (38)
5	disease modifying anti-rheumatic agent*.ti,ab. (37)
6	DMARD*.ti,ab. (14249)
7	hydroxychloroquine/ (23310)
8	Hydroxychloroquine.ti,ab. (7610)
9	chloroquinol.ti,ab. (2)
10	ercoquin.ti,ab. (0)
11	hydrochloroquine.ti,ab. (56)
12	hydrochloroquine.ti,ab. (0)
13	oxychloroquine.ti,ab. (6)
14	plaquenil.ti,ab. (305)

15	quensyl.ti,ab. (4)
16	"sn 8137".ti,ab. (1)
17	tocilizumab/ (10914)
18	tocilizumab.ti,ab. (6966)
19	actemra*.ti,ab. (71)
20	atilizumab.ti,ab. (21)
21	lusinex.ti,ab. (0)
22	"r 1569".ti,ab. (0)
23	r1569.ti,ab. (0)
24	roactemra.ti,ab. (43)
25	baricitinib/ (944)
26	Baricitinib.ti,ab. (600)
27	"incb 028050".ti,ab. (2)
28	"incb 28050".ti,ab. (1)
29	"incb028050".ti,ab. (18)
30	"incb28050".ti,ab. (0)
31	"ly 3009104".ti,ab. (2)
32	"ly3009104".ti,ab. (19)
33	olumiant.ti,ab. (8)
34	methotrexate/ (173846)
35	methotrexate.ti,ab. (65636)
36	"a methopterine".ti,ab. (0)
37	abitrexate.ti,ab. (0)
38	amethopterin*.ti,ab. (232)
39	ametopterine.ti,ab. (1)
40	antifolan.ti,ab. (0)
41	biotrexate.ti,ab. (3)
42	canceren.ti,ab. (1)
43	"cl 14377".ti,ab. (0)
44	cl14377.ti,ab. (0)
45	emtexate.ti,ab. (0)
46	emthexat*.ti,ab. (2)
47	emtrexate.ti,ab. (1)
48	enthexate.ti,ab. (0)
49	farmitrexat*.ti,ab. (0)
50	farmotrex.ti,ab. (0)
51	folex*.ti,ab. (3)
52	ifamet.ti,ab. (0)
53	imeth.ti,ab. (2)
54	"intradose MTX".ti,ab. (0)
55	jylamvo.ti,ab. (0)
56	lantarel.ti,ab. (3)
57	ledertrexate.ti,ab. (4)
58	maxtrex.ti,ab. (0)
59	metex.ti,ab. (12)
60	methoblastin.ti,ab. (0)
61	methohexate.ti,ab. (0)
62	methotrate.ti,ab. (4)
63	methotrexat*.ti,ab. (65844)
64	methoxtrexate.ti,ab. (3)
65	methotrexate.ti,ab. (62)
66	methylaminopterin*.ti,ab. (6)
67	meticil.ti,ab. (0)
68	metoject.ti,ab. (13)
69	metothrexate.ti,ab. (108)
70	metotrex*.ti,ab. (257)
71	metrex.ti,ab. (18)
72	mexate*.ti,ab. (1)
73	"mpi 5004".ti,ab. (0)
74	mpi5004.ti,ab. (0)
75	MTX.ti,ab. (23376)
76	neotrexate.ti,ab. (0)
77	nordimet.ti,ab. (1)

78	novatrex.ti,ab. (0)
79	"nsc 740".ti,ab. (34)
80	"nsc740".ti,ab. (0)
81	otrexup.ti,ab. (2)
82	rasuvo.ti,ab. (1)
83	reumatrex.ti,ab. (0)
84	rheumatrex.ti,ab. (6)
85	texate*.ti,ab. (2)
86	texorate.ti,ab. (0)
87	trexall.ti,ab. (3)
88	xaken.ti,ab. (0)
89	xatmep.ti,ab. (0)
90	zexate.ti,ab. (0)
91	salazosulfapyridine/ (24991)
92	salazosulfapyridine.ti,ab. (403)
93	"azlufidine en-tabs".ti,ab. (0)
94	azopyrin*.ti,ab. (0)
95	azosulfidine.ti,ab. (1)
96	azulfid*.ti,ab. (81)
97	azulfin.ti,ab. (0)
98	benzosulfa.ti,ab. (0)
99	"colo pleon".ti,ab. (2)
100	"colo-pleon".ti,ab. (2)
101	colopleon.ti,ab. (0)
102	disalazin.ti,ab. (0)
103	gastropyrin.ti,ab. (0)
104	"pleon ra".ti,ab. (0)
105	"pyralin en".ti,ab. (0)
106	rorasul.ti,ab. (0)
107	rosulfant.ti,ab. (0)
108	"s.a.s.-500".ti,ab. (2)
109	salaz*.ti,ab. (1188)
110	"salicyl azo sulfapyridine".ti,ab. (2)
111	salicylazosulfapyridin*.ti,ab. (181)
112	salisulf.ti,ab. (0)
113	salopyr.ti,ab. (0)
114	saridine.ti,ab. (0)
115	"sas 500".ti,ab. (2)
116	sulcolon.ti,ab. (0)
117	sulfasalazine.ti,ab. (5325)
118	sulfasalizine.ti,ab. (4)
119	sulfosalazine.ti,ab. (5)
120	sulphasalazine.ti,ab. (1742)
121	zopyrin.ti,ab. (0)
122	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113 or 114 or 115 or 116 or 117 or 118 or 119 or 120 or 121 (226851)
123	Coronavirus infection/ (1778)
124	coronavirus*.ti,ab. (11962)
125	coronovirus*.ti,ab. (19)
126	"2019-nCoV".ti,ab. (233)
127	"COVID-19".ti,ab. (255)
128	"CORVID-19".ti,ab. (0)
129	"WN-CoV".ti,ab. (0)
130	"HCoV-19".ti,ab. (0)
131	CoV.ti,ab. (6191)
132	ncov.ti,ab. (246)
133	"SARS-CoV-2".ti,ab. (102)
134	SARSCov19.ti,ab. (0)
135	ncov*wuhan.ti,ab. (0)

136	((outbreak* or "respiratory illness" or "respiratory disease" or respiratory symptom* or seafood market or food market or wildlife) and (Wuhan or China or Chinese)).ti,ab. (5699)
137	severe acute respiratory syndrome/ (8192)
138	"severe acute respiratory syndrome".ti,ab. (4884)
139	"sudden acute respiratory syndrome".ti,ab. (9)
140	SARS.ti,ab. (9457)
141	MERS.ti,ab. (4478)
142	"Middle East Respiratory Syndrome".ti,ab. (1889)
143	SARS coronavirus/ (4579)
144	virus infection/ (158726)
145	((virus* or viral) adj (infection* or disease*)).ti,ab. (154324)
146	virus pneumonia/ (6683)
147	((viral or virus) adj3 pneumonia).ti,ab. (2989)
148	exp influenza/ (83690)
149	influenza.ti,ab. (103586)
150	flu.ti,ab. (19565)
151	123 or 124 or 125 or 126 or 127 or 128 or 129 or 131 or 132 or 133 or 134 or 135 or 136 or 137 or 138 or 139 or 140 or 141 or 142 or 143 or 144 or 145 or 146 or 147 or 148 or 149 or 150 (408377)
152	122 and 151 (4890)
153	limit 152 to (chinese or english or italian or spanish) (4681)

S11.3. ClinicalTrials.gov search strategy

for: "disease modifying antirheumatic drug" OR "disease modifying anti-rheumatic drug" OR DMARD OR Hydroxychloroquine OR tocilizumab OR baricitinib OR methotrexate OR Sulfasalazine | Corona Virus Infection OR coronavirus OR coronavirus OR Covid-19 OR "2019-nCoV" OR "SARS-CoV-2" OR "SARSCov19" OR SARS OR "severe acute respiratory syndrome" OR MERS OR "Middle East Respiratory Syndrome" OR viral pneumonia OR influenza

S11.4. ICTRP strategy

CORONAVIRUS INFECTIONS, CORONAVIRUS SARS-ASSOCIATED, CORONAVIRUS SARS-ASSOCIATED (DIAGNOSIS), MERS, RESPIRATORY SYNDROME, ACUTE, SEVERE, RESPIRATORY SYNDROME, SEVERE ACUTE, SARS, SARS ASSOC CORONAVIRUS, SARS-ASSOCIATED CORONAVIRUS, severe acute respiratory syndrome - middle east respiratory syndrome - CORONAVIRUS INFECT, CORONAVIRUS INFECTION, CORONAVIRUS INFECTION (DIAGNOSIS), CORONAVIRUS INFECTION (DISORDER), CORONAVIRUS INFECTION, UNSPECIFIED, CORONAVIRUS INFECTIONS, CORONAVIRUS INFECTIONS [DISEASE/FINDING], INFECT CORONAVIRUS, INFECTION, CORONAVIRUS, INFECTION; VIRAL, CORONAVIRUS, INFECTIONS, CORONAVIRUS, corona virus infection - PNEUMONIA VIRAL, PNEUMONIA VIRAL NOS, PNEUMONIA, VIRAL, PNEUMONIA, VIRAL [DISEASE/FINDING], PNEUMONIA; VIRAL, PNEUMONIA; VIRUS, PNEUMONIA; VIRAL, PNEUMONIAS, VIRAL, VIRAL PNEUMONITIS, VIRAL; PNEUMONIA, VIRUS; PNEUMONIA, viral pneumonia - coronavirus - CORONA VIRUS INFECTION, CORONAVIRIDAE, FAMILY CORONAVIRIDAE, FAMILY CORONAVIRIDAE (ORGANISM), coronavirus - sars-cov-2 - sarscov19 - AIDS, FLU, FLU SYNDROME, FLU VACCINE, FLU VACCINES, FLU, HUMAN, GRIPPE, HUMAN FLU, SYNDROME FLU, VACCINES, FLU, influenza - 2019-ncov - covid-19 - CORONAVIRUS INFECTIONS, FLJ20450, MERS, MITOCHONDRIAL SERRS, MTSERRS, RESPIRATORY SYNDROME, ACUTE, SEVERE, RESPIRATORY SYNDROME, SEVERE ACUTE, SERINE TRNA LIGASE 1, CYTOPLASMIC, SERINE TRNA LIGASE 2, MITOCHONDRIAL, SERRS, SERRSMT, SERS, SERYL-TRNA SYNTHETASE, SERYL-TRNA SYNTHETASE 2, SERYL-TRNA SYNTHETASE 2, MITOCHONDRIAL, SERYL-TRNA SYNTHETASE, MITOCHONDRIAL, SEVERE ACUTE RESPIRATORY SYNDROME, SEVERE ACUTE RESPIRATORY SYNDROME (DISORDER), SEVERE ACUTE RESPIRATORY SYNDROME [DISEASE/FINDING], SEVERE ACUTE RESPIRATORY SYNDROME NOS, SEVERE ACUTE RESPIRATORY SYNDROME VIRUS, SEVERE ACUTE RESPIRATORY SYNDROME-RELATED CORONAVIRUS, SEVERE ACUTE RESPIRATORY SYNDROME-RELATED CORONAVIRUS (ORGANISM), SYS, sars - CORONA VIRUS INFECTION, CORONAVIRUS INFECT, CORONAVIRUS INFECTION, CORONAVIRUS INFECTION (DIAGNOSIS), CORONAVIRUS INFECTION (DISORDER), CORONAVIRUS INFECTION, UNSPECIFIED, CORONAVIRUS INFECTIONS, CORONAVIRUS INFECTIONS [DISEASE/FINDING], CORONAVIRUS SARS-ASSOCIATED, CORONAVIRUS SARS-ASSOCIATED (DIAGNOSIS), INFECT CORONAVIRUS, INFECTION, CORONAVIRUS, INFECTION; VIRAL, CORONAVIRUS, INFECTIONS, CORONAVIRUS, RESPIRATORY SYNDROME, ACUTE, SEVERE, RESPIRATORY SYNDROME, SEVERE ACUTE, SARS, SARS (SEVERE ACUTE RESPIRATORY SYNDROME), SARS ASSOC CORONAVIRUS, SARS-ASSOCIATED CORONAVIRUS, SEA, SEA (ENVIRONMENT), SEAS, SEVERE ACUTE RESPIRATORY SYNDROME, SEVERE ACUTE RESPIRATORY SYNDROME (DISORDER), SEVERE ACUTE RESPIRATORY SYNDROME (SARS), SEVERE ACUTE RESPIRATORY SYNDROME (SARS) (DIAGNOSIS), SEVERE ACUTE RESPIRATORY SYNDROME [DISEASE/FINDING], SEVERE ACUTE RESPIRATORY SYNDROME NOS, mers - disease modifying anti-rheumatic drug - disease modifying antirheumatic drug - CHLOROQUINE, HCQ, HYDROXYCHLOROCHIN, OXYCHLOROCHIN, OXYCHLOROQUINE, hydroxychloroquine - SALAZOSULFAPYRIDINE, SALAZOSULPHAPYRIDINE, SALICYLAZOSULFAPYRIDINE, SALICYLAZOSULPHAPYRIDINE, SULFANILAMIDE, SULPHASALAZINE, sulfasalazine - AMETHOPTERIN, MTX, methotrexate - ATLIZUMAB, MONOCLONAL ANTIBODY, MRA, MRA, tocilizumab - baricitinib - [MS100] ANTI-RHEUMATICS, AGENTS, ANTI-RHEUMATIC, AGENTS, ANTI-RHEUMATIC, ANTI RHEUMATIC AGENTS, ANTI RHEUMATIC DRUGS, ANTI-RHEUMATIC AGENT, ANTI-RHEUMATIC AGENT (PRODUCT), ANTI-RHEUMATIC AGENT, NOS, ANTI-RHEUMATIC AGENTS, ANTI-RHEUMATIC DRUGS, ANTI-RHEUMATIC AGENT, ANTI-RHEUMATIC AGENT [TC], ANTI-RHEUMATIC AGENTS, ANTI-RHEUMATIC DISEASE MODIFYING SECOND LINE DRUGS, ANTI-RHEUMATIC DISEASE-MODIFYING SECOND-LINE DRUGS, ANTI-RHEUMATIC DRUGS, ANTI-RHEUMATIC DRUGS DIS MODIFYING, ANTI-RHEUMATIC DRUGS,

DISEASE MODIFYING, ANTIRHEUMATIC DRUGS, DISEASE-MODIFYING, ANTIRHEUMATICS, DIS MODIFYING ANTIRHEUMATIC DRUGS, DISEASE MODIFYING ANTIRHEUMATIC DRUGS, DISEASE MODIFYING, ANTIRHEUMATIC SECOND LINE DRUGS, DISEASE-MODIFYING ANTIRHEUMATIC DRUG, DISEASE-MODIFYING ANTIRHEUMATIC DRUGS, DISEASE-MODIFYING, ANTIRHEUMATIC SECOND-LINE DRUGS, DRUGS, ANTI-RHEUMATIC, DRUGS, ANTIRHEUMATIC, DRUGS, DISEASE-MODIFYING ANTIRHEUMATIC, dmard

S12. References

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2. Voss EA, Boyce RD, Ryan PB, van der Lei J, Rijnbeek PR, Schuemie MJ. Accuracy of an automated knowledge base for identifying drug adverse reactions. J Biomed Inform. 2017 Feb; 66:72-81. doi: 10.1016/j.jbi.2016.12.005.