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Data obtained through Sentinel are intended to complement other types of evidence such as preclinical studies, clinical trials, postmarket studies, and adverse event reports, all of which are used by FDA to inform regulatory decisions regarding medical product safety. The information contained in this report is provided as part of FDA's commitment to place knowledge acquired from Sentinel in the public domain as soon as possible. Any public health actions taken by FDA regarding products involved in Sentinel queries will continue to be communicated through existing channels.

FDA wants to emphasize that the fact that FDA has initiated a query involving a medical product and is reporting findings related to that query does not mean that FDA is suggesting health care practitioners should change their prescribing practices for the medical product or that patients taking the medical product should stop using it. Patients who have questions about the use of an identified medical product should contact their health care practitioners.

The following report contains a description of the request, request specifications, and results from the modular program run(s).

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Overview for Request: cder_mpl2r_wp020, Report 3

Request ID: cder_mpl2r_wp020

Request Description: In this request, we assessed the risk of angioedema following initiation of treatment with angiotensin converting enzyme inhibitors (ACEi) or beta blockers (BB) using data from 2018 to 2022. To estimate changes in healthcare utilization throughout the pandemic, we selected three time periods to study, resulting in three reports: Report 1: pre-pandemic (2018 and 2019 years), Report 2: mix of pre-pandemic and pandemic (2019 and 2020), and Report 3: pandemic (2020 to 2022) which is this report.

Sentinel Routine Querying Module: Cohort Identification and Descriptive Analysis (CIDA) module, version 12.1.2, with Propensity Score Analysis (PSA) module

Data Source: We ran this query against Merative™ MarketScan® Research Databases on September 13, 2023. The study period included data from May 22, 2018 through April 1, 2022. Please see Appendix A for dates of available data.

Study Design: We identified individuals newly initiating treatment with ACEi or BB with no history of use of other antihypertensive medications or angioedema and evaluated the occurrence of angioedema during the first qualifying (index) exposure episode. We used propensity score methods to control for confounding. We selected three time periods to study: pre-pandemic (2018 and 2019 years), mix (2019 and 2020), and pandemic (2020 to 2022). We also used two lookback periods, which are represented in each report.

Exposure of Interest: New use of ACEi or BB was defined as no prior use of either study drug in the baseline period. We defined exposures of interest using NDCs. Please see Appendix B for a list of generic names of medical products used to define exposures of interest.

Outcome of Interest: We defined our outcome of interest, angioedema, as an angioedema diagnosis code recorded in any diagnostic position of an inpatient, emergency department, or outpatient encounter. Please see Appendix C for a list of ICD-10-CM diagnosis codes used to define the outcome of interest.

Cohort Eligibility Criteria: We required eligible individuals to be continuously enrolled in health plans with medical and drug coverage for either at least 183 days prior to cohort entry, which is the index date or date of first qualifying use of ACEi or BB, or at least 365 days prior to cohort entry, which are called "short lookback" or "long lookback," respectively, throughout the reports. We allowed gaps of up to 45 days while evaluating continuous enrollment in health plans. Eligible individuals had male or female sex as defined in the Sentinel Common Data Model and were ages 18-44, 45-64, or ≥ 65 on the index date. To be selected into the study cohorts, eligible members were further required to have no evidence of use of other antihypertensives (aliskiren or angiotensin 2 receptor blockers) and no evidence of angioedema in the 183 or 365 days prior to cohort entry (baseline period). We defined eligibility using National Drug Codes (NDC) recorded in the outpatient dispensing files. Please see Appendix D for a list of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) diagnosis codes and Appendix E for a list of non-proprietary names of medical products used to define exclusion criteria.

Follow-up Time: We followed individuals in an as-treated fashion up to a maximum of 90 days and therefore, the follow-up time was based on the length of the exposure episode. We created exposure episodes using days supply recorded in the outpatient pharmacy dispensing data. We bridged together dispensings less than 14 days apart in covered days and added 14 days at the end of each exposure episode to create continuous treatment episodes. Follow-up began on the day after treatment initiation and continued until the earliest of any of the following: 1) outcome occurrence; 2) treatment discontinuation or crossover; 3) initiation of treatment with aliskiren or ARBs; 4) disenrollment; 5) recorded death; or 5) 90 days since treatment initiation. Only the first valid exposure episode that occurred during the study period was included per patient.

Baseline Characteristics: We measured demographic characteristics such as age, sex, race, ethnicity, and year of treatment initiation for all individuals who entered the study cohorts on the day of cohort entry. Additionally, we measured the following clinical characteristics at baseline: allergic reaction, diabetes, heart failure, ischemic heart disease, NSAID use, acquired hypothyroidism, acute myocardial infarction, Alzheimer's disease and related disorders or senile dementia, anemia, asthma, atrial fibrillation, benign prostatic hyperplasia, cataract, chronic kidney disease, chronic obstructive pulmonary disease and bronchiectasis, depression, glaucoma, hip or pelvic fracture, hyperlipidemia, hypertension, osteoporosis, rheumatoid arthritis or osteoarthritis, stroke or transient ischemic attack, breast cancer, colorectal cancer, prostate cancer, lung cancer, endometrial cancer, urologic cancer, and the Charlson-Elixhauser Combined Comorbidity Index. We defined NSAID use using NDCs. Please see Appendix F for a list of generic names of medical products and Appendix G for a list of ICD-10-CM diagnosis codes used to define baseline characteristics.

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Propensity Score Estimation: We estimated the probability of initiating treatment with ACEi using logistic regression models run at each data partner site. These models included the following characteristics: age, sex, history of diabetes, allergic reactions, heart failure, ischemic heart disease, NSAID use, Charlson-Elixhauser Combined Comorbidity Index, and health care utilization (number of inpatient hospital stays, non-acute institutional stays, emergency department visits, ambulatory visits, and other ambulatory visits) and drug utilization measures (number of dispensings, unique generics dispensed, and unique drug classes dispensed). We used propensity scores to perform matching and stratification separately in order to control for confounding.

Matching: We matched ACEi new users to BB new users at each data partner site on their estimated propensity scores. We conducted 1:1 nearest neighbor matching without replacement using a caliper of 0.025 on the propensity score scale.

Stratification: We created five strata based on quintiles of the overall propensity score distribution among ACEi and BB new users. The overall propensity score distribution was trimmed to exclude regions of non-overlap between ACEi and BB new users.

Statistical Analysis: We used a risk set-based approach (case centered logistic regression) to estimate the hazard ratio and 95% confidence intervals for the site-adjusted, unconditional (matched), and conditional analyses.

Subgroup analysis: We estimated the risk of angioedema following initiation of ACEi relative to BB in subgroups created by year of cohort entry. In the propensity score matched analysis, subgroups were created from the overall matched population, and individuals were re-matched within the subgroup based on their overall propensity score. In the propensity score stratified analysis, subgroups were created from the overall trimmed population.

Please see Appendices H and I for the specifications of parameters used in this request and a design diagram.

Limitations: Algorithms used to define exposures, outcomes, inclusion and exclusion criteria, and covariates are imperfect and may be misclassified. Therefore, data should be interpreted with this limitation in mind.

Notes: Please contact the Sentinel Operations Center (info@sentinelssystem.org) for questions and to provide comments/suggestions for future enhancements to this document. For more information on Sentinel's routine querying modules, please refer to the documentation (<https://dev.sentinelssystem.org/projects/SETINEL/repos/sentinel-routine-querying-tool-documentation/browse>).

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Appendix A Dates of Available Data for Each Data Partner (DP) as of Request Distribution Date (August 31, 2023)

Appendix B List of Generic and Brand Names of Medical Products Used to Define Exposures in this Request

Appendix C List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Outcomes in this Request

Appendix D List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Exposure Incidence Criteria in this Request

Appendix E List of Generic and Brand Names of Medical Products Used to Define Exposure Incidence Criteria in this Request

Appendix F List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request

Appendix G List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Appendix H Specifications Defining Parameters for this Request

Appendix I Diagrams Detailing the Design of this Request

Glossary of Terms for Analyses Using Cohort Identification and Descriptive Analysis (CIDA) Module*

Amount Supplied - number of units (pills, tablets, vials) dispensed. Net amount per NDC per dispensing.

Blackout Period - number of days at the beginning of a treatment episode that events are to be ignored. If an event occurs during the blackout period, the episode is excluded.

Care Setting - type of medical encounter or facility where the exposure, event, or condition code was recorded.

Possible care settings include: Inpatient Hospital Stay (IP), Non-Acute Institutional Stay (IS), Emergency Department (ED), Ambulatory Visit (AV), and Other Ambulatory Visit (OA). For laboratory results, possible care settings include: Emergency Department (E), Home (H), Inpatient (I), Outpatient (O), or Unknown or Missing (U). The Care Setting, along with the Principal Diagnosis Indicator (PDX), forms the Care Setting/PDX parameter.

Ambulatory Visit (AV) - includes visits at outpatient clinics, same-day surgeries, urgent care visits, and other same-day ambulatory hospital encounters, but excludes emergency department encounters.

Emergency Department (ED) - includes ED encounters that become inpatient stays (in which case inpatient stays would be a separate encounter). Excludes urgent care visits.

Inpatient Hospital Stay (IP) - includes all inpatient stays, same-day hospital discharges, hospital transfers, and acute hospital care where the discharge is after the admission date.

Non-Acute Institutional Stay (IS) - includes hospice, skilled nursing facility (SNF), rehab center, nursing home, residential, overnight non-hospital dialysis and other non-hospital stays.

Other Ambulatory Visit (OA) - includes other non overnight AV encounters such as hospice visits, home health visits, skilled nursing facility visits, other non-hospital visits, as well as telemedicine, telephone and email consultations.

Charlson/Elixhauser Combined Comorbidity Score - calculated based on comorbidities observed during a requester-defined window around the exposure episode start date (e.g., in the 183 days prior to index).

Code Days - the minimum number of times the diagnosis must be found during the evaluation period in order to fulfill the algorithm to identify the corresponding patient characteristic.

Cohort Definition (drug/exposure) - indicates how the cohort will be defined: 01: Cohort includes only the first valid treatment episode during the query period; 02: Cohort includes all valid treatment episodes during the query period; 03: Cohort includes all valid treatment episodes during the query period until an event occurs.

Computed Start Marketing Date - represents the first observed dispensing date among all valid users within a GROUP (scenario) within each Data Partner site.

Days Supplied - number of days supplied for all dispensings in qualifying treatment episodes.

Eligible Members - number of members eligible for an incident treatment episode (defined by the drug/exposure and event washout periods) with drug and medical coverage during the query period.

Enrollment Gap - number of days allowed between two consecutive enrollment periods without breaking a "continuously enrolled" sequence.

Episodes - treatment episodes; length of episode is determined by days supplied in one dispensing or consecutive dispensings bridged by the episode gap.

Episode Gap - number of days allowed between two (or more) consecutive exposures (dispensings/procedures) to be considered the same treatment episode.

Event Deduplication - specifies how events are counted by the Modular Program (MP) algorithm: 0: Counts all occurrences of a health outcome of interest (HOI) during an exposure episode; 1: de-duplicates occurrences of the same HOI code and code type on the same day; 2: de-duplicates occurrences of the same HOI group on the same day (e.g., de-duplicates at the group level).

Exposure Episode Length - number of days after exposure initiation that is considered "exposed time."

Exposure Extension Period - number of days post treatment period in which the outcomes/events are counted for a treatment episode. Extensions are added after any episode gaps have been bridged.

Lookback Period - number of days wherein a member is required to have evidence of pre-existing condition (diagnosis/procedure/drug dispensing).

Maximum Episode Duration - truncates exposure episodes after a requester-specified number of exposed days. Applied after any gaps are bridged and extension days added to the length of the exposure episode.

Glossary of Terms for Analyses Using Cohort Identification and Descriptive Analysis (CIDA) Module*

Member-Years - sum of all days of enrollment with medical and drug coverage in the query period preceded by an exposure washout period all divided by 365.25.

Minimum Days Supplied - specifies a minimum number of days in length of the days supplied for the episode to be considered.

Minimum Episode Duration - specifies a minimum number of days in length of the episode for it to be considered. Applied after any gaps are bridged and extension days added to the length of the exposure episode.

Monitoring Period - used to define time periods of interest for both sequential analysis and simple cohort characterization requests.

Principal Diagnosis (PDX) - diagnosis or condition established to be chiefly responsible for admission of the patient to the hospital. 'P' = principal diagnosis, 'S' = secondary diagnosis, 'X' = unspecified diagnosis, '.' = blank. Along with the Care Setting values, forms the CareSetting/PDX parameter.

Query Period - period in which the modular program looks for exposures and outcomes of interest.

Switch Evaluation Step Value - value used to differentiate evaluation step. Each switch pattern can support up to 2 evaluation steps (0 = switch pattern evaluation start; 1 = first evaluation; 2 = second evaluation).

Switch Gap Inclusion Indicator - indicator for whether gaps in treatment episodes that are included in a switch episode will be counted as part of the switch episode duration.

Switch Pattern Cohort Inclusion Date - indicates which date to use for inclusion into the switch pattern cohort of interest as well as optionally as the index date of the treatment episode initiating the switch pattern. Valid options are the product approval date, product marketing date, other requester defined date, or computed start marketing date.

Switch Pattern Cohort Inclusion Strategy - indicates how the switch pattern cohort inclusion date will be used: 01: used only as a switch cohort entry date. First treatment episode dispensing date is used as index for computing time to first switch; 02: used as switch cohort entry date and as initial switch step index date for computing time to first switch.

Treatment Episode Truncation Indicator - indicates whether the exposure episode will be truncated at the occurrence of a requester-specified code.

Washout Period (drug/exposure) - number of days a user is required to have no evidence of prior exposure (drug dispensing/procedure) and continuous drug and medical coverage prior to an incident treatment episode.

Washout Period (event/outcome) - number of days a user is required to have no evidence of a prior event (procedure/diagnosis) and continuous drug and medical coverage prior to an incident treatment episode.

Years at Risk - number of days supplied plus any episode gaps and exposure extension periods all divided by 365.25.

*all terms may not be used in this report

Glossary of Terms for Analyses Using Propensity Score Analysis (PSA) Module*

Covariate - requester defined binary variable to include in the propensity score estimation model (e.g., diabetes, heart failure, etc.) during requester-defined lookback period. Requester may also choose to add any of the following categorical, continuous, or count metrics to the propensity score estimation model:

1. Age (continuous)
2. Sex
3. Time period (i.e., monitoring period for sequential analyses)
4. Year of exposure
5. Comorbidity score
6. Medical utilization – number of inpatient stays
7. Medical utilization – number of institutional stays
8. Medical utilization – number of emergency department visits
9. Medical utilization – number of outpatient visits
10. Health care utilization – number of other ambulatory encounters (e.g., telemedicine, email consults)
11. Drug utilization – number of dispensings
12. Drug utilization – number of unique generics dispensed
13. Drug Utilization – number of unique drug classes dispensed

Covariate Evaluation Window - specified number of days relative to index date to evaluate the occurrence of covariates of interest. Note: members are required to have continuous enrollment during the covariate evaluation window, regardless of the value included in the "Continuous enrollment before exposure" field.

Individual Level Data Return - program may return individual-level, de-identified datasets to the Sentinel Operations Center (SOC). While the datasets contain a single row per patient for each specified analysis, patient identifiers such as a patient ID are not included in the output. Individual-level datasets are returned to the SOC, aggregated, and used to calculate effect estimates via Cox (proportional hazards) regression.

Mahalanobis Distance - provides a measure of balance across all variables while accounting for their correlation.

Matching Caliper - maximum allowed difference in propensity scores between treatment and control patients. Requester may select any caliper (e.g., 0.01, 0.025, and 0.05).

Matching Ratio - patients in exposed and comparator groups are nearest neighbor matched by a 1:1 or 1:n (up to 10) matching

Matched Conditional and Unconditional Analysis - in a conditional matched analysis, a Cox model, stratified by Data Partner site and matched set, is run on the matched population. This can be done for both the both 1:1 and 1:n matched cohorts. In an unconditional analysis, a Cox model, stratified by Data Partner site only, is run on the matched population. This can be done for the 1:1 matched cohort only.

Propensity Score Stratification - option to stratify propensity scores based on requester-defined percentiles in the unmatched population. In a stratified analysis, a Cox model, stratified by Data Partner site, is run on the stratified population. Note that all patients identified in exposure and comparator cohorts are used in the analysis.

PSM Tool - performs effect estimation by comparing exposure propensity-score matched parallel new user cohorts. Propensity score estimation and matching are conducted within each Sentinel Data Partner site via distributed programming code; data are returned to the SOC, aggregated, and used to calculate effect estimates.

Risk-set Level Data Return - alternative to the patient-level data return approach. In this approach, the PSM tool will produce de-identified, risk-set level datasets instead of or in addition to individual-level output. Whereas each observation in the patient-level datasets represents one patient in the cohort, each observation in the risk set dataset represents one event. Risk sets are created at the Data Partner site, returned to the SOC, aggregated, and used to calculate effect estimates via case-centered logistic regression.

Subgroup Analysis - may be conducted using any requester-defined covariates. Subgroup analyses may be performed in the

Zero Cell Correction - indicator for whether to screen variables with a zero correction added to each cell in the confounder/outcome 2x2 table. Recommended when the number of exposed outcomes is fewer than 150.

*all terms may not be used in this report

Table 1a. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	195,769	100.0%	232,685	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.1	12.2	45.8	15.9	5.212	0.367
Age						
18-44 years	59,236	30.3%	115,242	49.5%	-19.269	-0.401
45-64 years	119,939	61.3%	95,455	41.0%	20.242	0.414
≥ 65 years	16,594	8.5%	21,988	9.4%	-0.973	-0.034
Sex						
Female	84,788	43.3%	146,632	63.0%	-19.707	-0.403
Male	110,981	56.7%	86,053	37.0%	19.707	0.403
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	195,769	100.0%	232,685	100.0%	0.000	NaN
White	.	.	.	.	.	.
Hispanic origin						
Yes	.	.	.	.	.	.
No	.	.	.	.	.	.
Unknown	195,769	100.0%	232,685	100.0%	0.000	NaN
Year						
2020	42,887	21.9%	47,812	20.5%	1.359	0.033
2021	122,695	62.7%	147,225	63.3%	-0.599	-0.012
2022	30,187	15.4%	37,648	16.2%	-0.760	-0.021
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.2	1.2	1.0	1.8	-0.733	-0.469
Allergic Reaction	11,624	5.9%	20,374	8.8%	-2.818	-0.108
Diabetes	32,623	16.7%	19,760	8.5%	8.172	0.248
Heart Failure	2,013	1.0%	10,810	4.6%	-3.618	-0.219
Ischemic Heart Disease	5,237	2.7%	22,419	9.6%	-6.960	-0.293

Table 1a. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	28,103	14.4%	35,789	15.4%	-1.026	-0.029
Acquired Hypothyroidism ⁵	13,488	6.9%	20,625	8.9%	-1.974	-0.073
Acute Myocardial Infarction ⁵	1,049	0.5%	8,979	3.9%	-3.323	-0.228
Alzheimers Disease and Related Disorders ⁵	848	0.4%	2,212	1.0%	-0.517	-0.062
Anemia ⁵	9,052	4.6%	23,148	9.9%	-5.324	-0.206
Asthma ⁵	7,409	3.8%	13,485	5.8%	-2.011	-0.094
Atrial Fibrillation ⁵	1,731	0.9%	13,534	5.8%	-4.932	-0.277
Benign Prostatic Hyperplasia ⁵	4,131	2.1%	4,990	2.1%	-0.034	-0.002
Cataract ⁵	7,739	4.0%	8,047	3.5%	0.495	0.026
Chronic Kidney Disease ⁵	18,095	9.2%	19,107	8.2%	1.032	0.037
Bronchiectasis ⁵	4,262	2.2%	8,626	3.7%	-1.530	-0.091
Depression ⁵	16,852	8.6%	44,407	19.1%	-10.476	-0.307
Glaucoma ⁵	5,183	2.6%	5,707	2.5%	0.195	0.012
Hip or Pelvic Fracture ⁵	228	0.1%	523	0.2%	-0.108	-0.026
Hyperlipidemia ⁵	50,353	25.7%	54,024	23.2%	2.503	0.058
Hypertension ⁵	73,985	37.8%	64,623	27.8%	10.019	0.215
Osteoporosis ⁵	1,908	1.0%	3,105	1.3%	-0.360	-0.034
Rheumatoid Arthritis or Osteoarthritis ⁵	19,918	10.2%	24,776	10.6%	-0.474	-0.016
Stroke or Transient Ischemic Attack ⁵	3,364	1.7%	5,326	2.3%	-0.571	-0.041
Breast Cancer ⁵	2,006	1.0%	3,088	1.3%	-0.302	-0.028
Colorectal Cancer ⁵	674	0.3%	889	0.4%	-0.038	-0.006
Prostate Cancer ⁵	1,282	0.7%	1,608	0.7%	-0.036	-0.004
Lung Cancer ⁵	287	0.1%	900	0.4%	-0.240	-0.047
Endometrial Cancer ⁵	309	0.2%	309	0.1%	0.025	0.007
Urologic Cancer ⁵	316	0.2%	504	0.2%	-0.055	-0.013
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	4.9	6.6	7.6	9.0	-2.725	-0.347
Mean number of emergency room encounters	0.2	0.7	0.4	1.0	-0.179	-0.208
Mean number of inpatient hospital encounters	0.1	0.3	0.2	0.6	-0.165	-0.367
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.015
Mean number of other ambulatory encounters	1.6	3.6	2.8	5.7	-1.286	-0.271

Table 1a. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.1	8.0	8.3	9.9	-2.228	-0.248
Mean number of generics dispensed	3.2	3.3	4.2	4.0	-1.064	-0.290
Mean number of unique drug classes dispensed	3.0	3.0	4.0	3.7	-1.022	-0.302

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1b. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	128,171	65.5%	128,171	55.1%	N/A	N/A
Demographic Characteristics						
Age (years)	49.2	12.5	50.0	14.6	-0.804	-0.059
Age						
18-44 years	46,708	36.4%	46,756	36.5%	-0.037	-0.001
45-64 years	72,458	56.5%	66,963	52.2%	4.287	0.086
≥ 65 years	9,005	7.0%	14,452	11.3%	-4.250	-0.148
Sex						
Female	68,305	53.3%	65,411	51.0%	2.258	0.045
Male	59,866	46.7%	62,760	49.0%	-2.258	-0.045
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	128,171	100.0%	128,171	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	128,171	100.0%	128,171	100.0%	0.000	NaN
Year						
2020	27,928	21.8%	26,550	20.7%	1.075	0.026
2021	80,463	62.8%	80,927	63.1%	-0.362	-0.007
2022	19,780	15.4%	20,694	16.1%	-0.713	-0.020
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.3	-0.060	-0.046
Allergic Reaction	8,791	6.9%	8,722	6.8%	0.054	0.002
Diabetes	15,023	11.7%	13,805	10.8%	0.950	0.030
Heart Failure	1,927	1.5%	2,463	1.9%	-0.418	-0.032
Ischemic Heart Disease	5,041	3.9%	5,505	4.3%	-0.362	-0.018

Table 1b. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	18,706	14.6%	18,694	14.6%	0.009	0.000
Acquired Hypothyroidism ⁵	9,702	7.6%	10,146	7.9%	-0.346	-0.013
Acute Myocardial Infarction ⁵	1,029	0.8%	1,930	1.5%	-0.703	-0.066
Alzheimers Disease and Related Disorders ⁵	718	0.6%	659	0.5%	0.046	0.006
Anemia ⁵	7,495	5.8%	7,176	5.6%	0.249	0.011
Asthma ⁵	6,250	4.9%	4,383	3.4%	1.457	0.073
Atrial Fibrillation ⁵	1,407	1.1%	6,733	5.3%	-4.155	-0.239
Benign Prostatic Hyperplasia ⁵	2,209	1.7%	3,231	2.5%	-0.797	-0.055
Cataract ⁵	4,440	3.5%	5,313	4.1%	-0.681	-0.036
Chronic Kidney Disease ⁵	11,133	8.7%	8,740	6.8%	1.867	0.070
Bronchiectasis ⁵	3,457	2.7%	3,121	2.4%	0.262	0.017
Depression ⁵	14,464	11.3%	14,423	11.3%	0.032	0.001
Glaucoma ⁵	3,124	2.4%	3,570	2.8%	-0.348	-0.022
Hip or Pelvic Fracture ⁵	190	0.1%	168	0.1%	0.017	0.005
Hyperlipidemia ⁵	30,367	23.7%	32,011	25.0%	-1.283	-0.030
Hypertension ⁵	46,365	36.2%	39,332	30.7%	5.487	0.117
Osteoporosis ⁵	1,413	1.1%	1,708	1.3%	-0.230	-0.021
Rheumatoid Arthritis or Osteoarthritis ⁵	13,831	10.8%	13,437	10.5%	0.307	0.010
Stroke or Transient Ischemic Attack ⁵	2,525	2.0%	2,318	1.8%	0.162	0.012
Breast Cancer ⁵	1,723	1.3%	1,307	1.0%	0.325	0.030
Colorectal Cancer ⁵	558	0.4%	317	0.2%	0.188	0.032
Prostate Cancer ⁵	772	0.6%	948	0.7%	-0.137	-0.017
Lung Cancer ⁵	260	0.2%	217	0.2%	0.034	0.008
Endometrial Cancer ⁵	259	0.2%	112	0.1%	0.115	0.030
Urologic Cancer ⁵	257	0.2%	205	0.2%	0.041	0.010
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.6	7.4	5.6	6.6	-0.056	-0.008
Mean number of emergency room encounters	0.3	0.8	0.3	0.7	-0.011	-0.015
Mean number of inpatient hospital encounters	0.1	0.3	0.1	0.4	-0.011	-0.030
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.004
Mean number of other ambulatory encounters	1.8	4.1	1.8	3.7	-0.039	-0.010

Table 1b. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	6.8	8.6	6.8	8.3	-0.017	-0.002
Mean number of generics dispensed	3.5	3.5	3.5	3.4	-0.005	-0.001
Mean number of unique drug classes dispensed	3.3	3.3	3.3	3.2	-0.003	-0.001

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1c. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	27,928	100.0%	26,550	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.4	50.0	14.4	-0.836	-0.062
Age						
18-44 years	10,092	36.1%	9,571	36.0%	0.087	0.002
45-64 years	15,963	57.2%	14,119	53.2%	3.979	0.080
≥ 65 years	1,873	6.7%	2,860	10.8%	-4.066	-0.144
Sex						
Female	15,068	54.0%	13,622	51.3%	2.646	0.053
Male	12,860	46.0%	12,928	48.7%	-2.646	-0.053
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	27,928	100.0%	26,550	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	27,928	100.0%	26,550	100.0%	0.000	NaN
Year						
2020	27,928	100.0%	26,550	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.3	-0.048	-0.036
Allergic Reaction	1,842	6.6%	1,663	6.3%	0.332	0.014
Diabetes	3,243	11.6%	2,634	9.9%	1.691	0.055
Heart Failure	406	1.5%	487	1.8%	-0.381	-0.030
Ischemic Heart Disease	1,074	3.8%	1,119	4.2%	-0.369	-0.019

Table 1c. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	4,068	14.6%	3,917	14.8%	-0.187	-0.005
Acquired Hypothyroidism ⁵	2,092	7.5%	2,100	7.9%	-0.419	-0.016
Acute Myocardial Infarction ⁵	218	0.8%	397	1.5%	-0.715	-0.067
Alzheimers Disease and Related Disorders ⁵	154	0.6%	126	0.5%	0.077	0.011
Anemia ⁵	1,626	5.8%	1,489	5.6%	0.214	0.009
Asthma ⁵	1,391	5.0%	883	3.3%	1.655	0.083
Atrial Fibrillation ⁵	312	1.1%	1,318	5.0%	-3.847	-0.225
Benign Prostatic Hyperplasia ⁵	491	1.8%	671	2.5%	-0.769	-0.053
Cataract ⁵	962	3.4%	1,045	3.9%	-0.491	-0.026
Chronic Kidney Disease ⁵	2,328	8.3%	1,733	6.5%	1.808	0.069
Bronchiectasis ⁵	707	2.5%	630	2.4%	0.159	0.010
Depression ⁵	3,110	11.1%	2,900	10.9%	0.213	0.007
Glaucoma ⁵	660	2.4%	701	2.6%	-0.277	-0.018
Hip or Pelvic Fracture ⁵	48	0.2%	47	0.2%	-0.005	-0.001
Hyperlipidemia ⁵	6,402	22.9%	6,444	24.3%	-1.348	-0.032
Hypertension ⁵	9,806	35.1%	8,066	30.4%	4.731	0.101
Osteoporosis ⁵	303	1.1%	347	1.3%	-0.222	-0.020
Rheumatoid Arthritis or Osteoarthritis ⁵	2,890	10.3%	2,681	10.1%	0.250	0.008
Stroke or Transient Ischemic Attack ⁵	564	2.0%	501	1.9%	0.132	0.010
Breast Cancer ⁵	379	1.4%	290	1.1%	0.265	0.024
Colorectal Cancer ⁵	111	0.4%	72	0.3%	0.126	0.022
Prostate Cancer ⁵	161	0.6%	206	0.8%	-0.199	-0.024
Lung Cancer ⁵	71	0.3%	44	0.2%	0.089	0.019
Endometrial Cancer ⁵	47	0.2%	22	0.1%	0.085	0.024
Urologic Cancer ⁵	57	0.2%	51	0.2%	0.012	0.003
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.3	7.3	5.3	6.4	0.015	0.002
Mean number of emergency room encounters	0.2	0.7	0.3	0.7	-0.021	-0.029
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.011	-0.032
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.003

Table 1c. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of other ambulatory encounters	1.7	3.8	1.8	3.9	-0.047	-0.012
Mean number of filled prescriptions	6.7	8.7	6.7	8.5	-0.044	-0.005
Mean number of generics dispensed	3.3	3.5	3.3	3.4	-0.020	-0.006
Mean number of unique drug classes dispensed	3.2	3.2	3.2	3.1	-0.019	-0.006

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1d. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product		Covariate Balance			
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	26,549	95.1%	26,549	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.2	12.4	50.0	14.4	-0.821	-0.061
Age						
18-44 years	9,550	36.0%	9,571	36.1%	-0.079	-0.002
45-64 years	15,223	57.3%	14,118	53.2%	4.162	0.084
≥ 65 years	1,776	6.7%	2,860	10.8%	-4.083	-0.145
Sex						
Female	14,311	53.9%	13,622	51.3%	2.595	0.052
Male	12,238	46.1%	12,927	48.7%	-2.595	-0.052
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	26,549	100.0%	26,549	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	26,549	100.0%	26,549	100.0%	0.000	NaN
Year						
2020	26,549	100.0%	26,549	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.3	-0.048	-0.036
Allergic Reaction	1,750	6.6%	1,663	6.3%	0.328	0.013
Diabetes	3,047	11.5%	2,634	9.9%	1.556	0.050
Heart Failure	385	1.5%	487	1.8%	-0.384	-0.030
Ischemic Heart Disease	1,015	3.8%	1,119	4.2%	-0.392	-0.020

Table 1d. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	3,860	14.5%	3,917	14.8%	-0.215	-0.006
Acquired Hypothyroidism ⁵	1,993	7.5%	2,100	7.9%	-0.403	-0.015
Acute Myocardial Infarction ⁵	205	0.8%	397	1.5%	-0.723	-0.068
Alzheimers Disease and Related Disorders ⁵	149	0.6%	126	0.5%	0.087	0.012
Anemia ⁵	1,547	5.8%	1,489	5.6%	0.218	0.009
Asthma ⁵	1,308	4.9%	883	3.3%	1.601	0.081
Atrial Fibrillation ⁵	293	1.1%	1,318	5.0%	-3.861	-0.227
Benign Prostatic Hyperplasia ⁵	466	1.8%	671	2.5%	-0.772	-0.053
Cataract ⁵	909	3.4%	1,045	3.9%	-0.512	-0.027
Chronic Kidney Disease ⁵	2,218	8.4%	1,733	6.5%	1.827	0.070
Bronchiectasis ⁵	678	2.6%	630	2.4%	0.181	0.012
Depression ⁵	2,944	11.1%	2,900	10.9%	0.166	0.005
Glaucoma ⁵	624	2.4%	701	2.6%	-0.290	-0.019
Hip or Pelvic Fracture ⁵	47	0.2%	47	0.2%	0.000	0.000
Hyperlipidemia ⁵	6,070	22.9%	6,443	24.3%	-1.405	-0.033
Hypertension ⁵	9,270	34.9%	8,065	30.4%	4.539	0.097
Osteoporosis ⁵	293	1.1%	347	1.3%	-0.203	-0.019
Rheumatoid Arthritis or Osteoarthritis ⁵	2,761	10.4%	2,681	10.1%	0.301	0.010
Stroke or Transient Ischemic Attack ⁵	537	2.0%	501	1.9%	0.136	0.010
Breast Cancer ⁵	363	1.4%	290	1.1%	0.275	0.025
Colorectal Cancer ⁵	106	0.4%	72	0.3%	0.128	0.022
Prostate Cancer ⁵	152	0.6%	206	0.8%	-0.203	-0.025
Lung Cancer ⁵	68	0.3%	44	0.2%	0.090	0.020
Endometrial Cancer ⁵	45	0.2%	22	0.1%	0.087	0.024
Urologic Cancer ⁵	52	0.2%	51	0.2%	0.004	0.001
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.3	7.3	5.3	6.4	0.017	0.002
Mean number of emergency room encounters	0.2	0.7	0.3	0.7	-0.023	-0.033
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.012	-0.034
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.002
Mean number of other ambulatory encounters	1.7	3.8	1.8	3.9	-0.053	-0.014

Table 1d. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	6.7	8.7	6.7	8.5	-0.048	-0.006
Mean number of generics dispensed	3.3	3.5	3.3	3.4	-0.025	-0.007
Mean number of unique drug classes dispensed	3.2	3.2	3.2	3.1	-0.022	-0.007

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1e. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	80,463	100.0%	80,927	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.5	49.9	14.6	-0.817	-0.060
Age						
18-44 years	29,473	36.6%	29,579	36.6%	0.079	0.002
45-64 years	45,389	56.4%	42,269	52.2%	4.179	0.084
≥ 65 years	5,601	7.0%	9,079	11.2%	-4.258	-0.149
Sex						
Female	42,703	53.1%	41,351	51.1%	1.975	0.040
Male	37,760	46.9%	39,576	48.9%	-1.975	-0.040
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	80,463	100.0%	80,927	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	80,463	100.0%	80,927	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	80,463	100.0%	80,927	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.3	-0.063	-0.048
Allergic Reaction	5,601	7.0%	5,628	7.0%	0.007	0.000
Diabetes	9,478	11.8%	8,906	11.0%	0.774	0.024
Heart Failure	1,251	1.6%	1,590	2.0%	-0.410	-0.031
Ischemic Heart Disease	3,163	3.9%	3,495	4.3%	-0.388	-0.019

Table 1e. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	11,793	14.7%	11,840	14.6%	0.026	0.001
Acquired Hypothyroidism ⁵	6,043	7.5%	6,472	8.0%	-0.487	-0.018
Acute Myocardial Infarction ⁵	659	0.8%	1,230	1.5%	-0.701	-0.065
Alzheimers Disease and Related Disorders ⁵	457	0.6%	423	0.5%	0.045	0.006
Anemia ⁵	4,697	5.8%	4,517	5.6%	0.256	0.011
Asthma ⁵	3,878	4.8%	2,796	3.5%	1.365	0.069
Atrial Fibrillation ⁵	909	1.1%	4,369	5.4%	-4.269	-0.242
Benign Prostatic Hyperplasia ⁵	1,350	1.7%	2,015	2.5%	-0.812	-0.057
Cataract ⁵	2,752	3.4%	3,359	4.2%	-0.730	-0.038
Chronic Kidney Disease ⁵	7,163	8.9%	5,579	6.9%	2.008	0.075
Bronchiectasis ⁵	2,165	2.7%	1,908	2.4%	0.333	0.021
Depression ⁵	9,131	11.3%	9,147	11.3%	0.045	0.001
Glaucoma ⁵	1,915	2.4%	2,262	2.8%	-0.415	-0.026
Hip or Pelvic Fracture ⁵	112	0.1%	100	0.1%	0.016	0.004
Hyperlipidemia ⁵	19,166	23.8%	20,290	25.1%	-1.252	-0.029
Hypertension ⁵	29,465	36.6%	25,014	30.9%	5.710	0.121
Osteoporosis ⁵	862	1.1%	1,090	1.3%	-0.276	-0.025
Rheumatoid Arthritis or Osteoarthritis ⁵	8,813	11.0%	8,458	10.5%	0.501	0.016
Stroke or Transient Ischemic Attack ⁵	1,590	2.0%	1,436	1.8%	0.202	0.015
Breast Cancer ⁵	1,061	1.3%	810	1.0%	0.318	0.030
Colorectal Cancer ⁵	360	0.4%	187	0.2%	0.216	0.037
Prostate Cancer ⁵	480	0.6%	579	0.7%	-0.119	-0.015
Lung Cancer ⁵	154	0.2%	139	0.2%	0.020	0.005
Endometrial Cancer ⁵	175	0.2%	75	0.1%	0.125	0.032
Urologic Cancer ⁵	161	0.2%	115	0.1%	0.058	0.014
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.7	7.5	5.7	6.6	-0.065	-0.009
Mean number of emergency room encounters	0.3	0.8	0.3	0.7	-0.006	-0.008
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.010	-0.029
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.006
Mean number of other ambulatory encounters	1.8	4.3	1.8	3.6	-0.020	-0.005

Table 1e. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	6.8	8.6	6.7	8.3	0.035	0.004
Mean number of generics dispensed	3.5	3.5	3.4	3.4	0.017	0.005
Mean number of unique drug classes dispensed	3.3	3.3	3.3	3.2	0.014	0.004

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1f. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	80,265	99.8%	80,265	99.2%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.5	49.9	14.5	-0.818	-0.060
Age						
18-44 years	29,417	36.6%	29,327	36.5%	0.112	0.002
45-64 years	45,263	56.4%	41,952	52.3%	4.125	0.083
≥ 65 years	5,585	7.0%	8,986	11.2%	-4.237	-0.148
Sex						
Female	42,629	53.1%	41,021	51.1%	2.003	0.040
Male	37,636	46.9%	39,244	48.9%	-2.003	-0.040
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	80,265	100.0%	80,265	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	80,265	100.0%	80,265	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	80,265	100.0%	80,265	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.3	-0.063	-0.048
Allergic Reaction	5,584	7.0%	5,572	6.9%	0.015	0.001
Diabetes	9,443	11.8%	8,787	10.9%	0.817	0.026
Heart Failure	1,247	1.6%	1,566	2.0%	-0.397	-0.030
Ischemic Heart Disease	3,150	3.9%	3,460	4.3%	-0.386	-0.019

Table 1f. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	11,761	14.7%	11,742	14.6%	0.024	0.001
Acquired Hypothyroidism ⁵	6,035	7.5%	6,407	8.0%	-0.463	-0.017
Acute Myocardial Infarction ⁵	657	0.8%	1,217	1.5%	-0.698	-0.065
Alzheimers Disease and Related Disorders ⁵	454	0.6%	415	0.5%	0.049	0.007
Anemia ⁵	4,684	5.8%	4,485	5.6%	0.248	0.011
Asthma ⁵	3,864	4.8%	2,770	3.5%	1.363	0.069
Atrial Fibrillation ⁵	908	1.1%	4,332	5.4%	-4.266	-0.242
Benign Prostatic Hyperplasia ⁵	1,341	1.7%	1,996	2.5%	-0.816	-0.057
Cataract ⁵	2,747	3.4%	3,324	4.1%	-0.719	-0.038
Chronic Kidney Disease ⁵	7,133	8.9%	5,522	6.9%	2.007	0.075
Bronchiectasis ⁵	2,160	2.7%	1,893	2.4%	0.333	0.021
Depression ⁵	9,112	11.4%	9,064	11.3%	0.060	0.002
Glaucoma ⁵	1,912	2.4%	2,246	2.8%	-0.416	-0.026
Hip or Pelvic Fracture ⁵	112	0.1%	99	0.1%	0.016	0.004
Hyperlipidemia ⁵	19,108	23.8%	20,117	25.1%	-1.257	-0.029
Hypertension ⁵	29,393	36.6%	24,780	30.9%	5.747	0.122
Osteoporosis ⁵	860	1.1%	1,090	1.4%	-0.287	-0.026
Rheumatoid Arthritis or Osteoarthritis ⁵	8,792	11.0%	8,375	10.4%	0.520	0.017
Stroke or Transient Ischemic Attack ⁵	1,585	2.0%	1,425	1.8%	0.199	0.015
Breast Cancer ⁵	1,060	1.3%	803	1.0%	0.320	0.030
Colorectal Cancer ⁵	358	0.4%	186	0.2%	0.214	0.037
Prostate Cancer ⁵	477	0.6%	574	0.7%	-0.121	-0.015
Lung Cancer ⁵	154	0.2%	139	0.2%	0.019	0.004
Endometrial Cancer ⁵	174	0.2%	74	0.1%	0.125	0.032
Urologic Cancer ⁵	161	0.2%	114	0.1%	0.059	0.014
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.7	7.5	5.7	6.6	-0.063	-0.009
Mean number of emergency room encounters	0.3	0.8	0.3	0.7	-0.005	-0.007
Mean number of inpatient hospital encounters	0.1	0.3	0.1	0.4	-0.011	-0.030
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.006
Mean number of other ambulatory encounters	1.8	4.3	1.8	3.6	-0.018	-0.005

Table 1f. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	6.8	8.6	6.7	8.3	0.038	0.004
Mean number of generics dispensed	3.5	3.5	3.4	3.4	0.019	0.005
Mean number of unique drug classes dispensed	3.3	3.3	3.3	3.1	0.016	0.005

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1g. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	19,780	100.0%	20,694	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.4	12.6	50.1	14.8	-0.701	-0.051
Age						
18-44 years	7,143	36.1%	7,606	36.8%	-0.642	-0.013
45-64 years	11,106	56.1%	10,575	51.1%	5.046	0.101
≥ 65 years	1,531	7.7%	2,513	12.1%	-4.403	-0.148
Sex						
Female	10,534	53.3%	10,438	50.4%	2.816	0.056
Male	9,246	46.7%	10,256	49.6%	-2.816	-0.056
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	19,780	100.0%	20,694	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	19,780	100.0%	20,694	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	19,780	100.0%	20,694	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.2	-0.066	-0.051
Allergic Reaction	1,348	6.8%	1,431	6.9%	-0.100	-0.004
Diabetes	2,302	11.6%	2,265	10.9%	0.693	0.022
Heart Failure	270	1.4%	386	1.9%	-0.500	-0.040
Ischemic Heart Disease	804	4.1%	891	4.3%	-0.241	-0.012

Table 1g. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	2,845	14.4%	2,937	14.2%	0.191	0.005
Acquired Hypothyroidism ⁵	1,567	7.9%	1,574	7.6%	0.316	0.012
Acute Myocardial Infarction ⁵	152	0.8%	303	1.5%	-0.696	-0.066
Alzheimers Disease and Related Disorders ⁵	107	0.5%	110	0.5%	0.009	0.001
Anemia ⁵	1,172	5.9%	1,170	5.7%	0.271	0.012
Asthma ⁵	981	5.0%	704	3.4%	1.558	0.078
Atrial Fibrillation ⁵	186	0.9%	1,046	5.1%	-4.114	-0.243
Benign Prostatic Hyperplasia ⁵	368	1.9%	545	2.6%	-0.773	-0.052
Cataract ⁵	726	3.7%	909	4.4%	-0.722	-0.037
Chronic Kidney Disease ⁵	1,642	8.3%	1,428	6.9%	1.401	0.053
Bronchiectasis ⁵	585	3.0%	583	2.8%	0.140	0.008
Depression ⁵	2,223	11.2%	2,376	11.5%	-0.243	-0.008
Glaucoma ⁵	549	2.8%	607	2.9%	-0.158	-0.009
Hip or Pelvic Fracture ⁵	30	0.2%	21	0.1%	0.050	0.014
Hyperlipidemia ⁵	4,799	24.3%	5,277	25.5%	-1.238	-0.029
Hypertension ⁵	7,094	35.9%	6,252	30.2%	5.653	0.120
Osteoporosis ⁵	248	1.3%	271	1.3%	-0.056	-0.005
Rheumatoid Arthritis or Osteoarthritis ⁵	2,128	10.8%	2,298	11.1%	-0.346	-0.011
Stroke or Transient Ischemic Attack ⁵	371	1.9%	381	1.8%	0.035	0.003
Breast Cancer ⁵	283	1.4%	207	1.0%	0.430	0.039
Colorectal Cancer ⁵	87	0.4%	58	0.3%	0.160	0.027
Prostate Cancer ⁵	131	0.7%	163	0.8%	-0.125	-0.015
Lung Cancer ⁵	35	0.2%	34	0.2%	0.013	0.003
Endometrial Cancer ⁵	37	0.2%	15	0.1%	0.115	0.032
Urologic Cancer ⁵	39	0.2%	39	0.2%	0.009	0.002
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.7	7.3	5.8	6.6	-0.085	-0.012
Mean number of emergency room encounters	0.3	0.7	0.3	0.7	-0.017	-0.023
Mean number of inpatient hospital encounters	0.1	0.3	0.1	0.3	-0.012	-0.035
Mean number of non-acute institutional encounters	0.0	0.0	0.0	NaN	NaN	NaN
Mean number of other ambulatory encounters	1.8	4.2	1.9	3.6	-0.097	-0.025

Table 1g. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.9	8.4	7.0	8.3	-0.172	-0.021
Mean number of generics dispensed	3.8	3.6	3.8	3.5	-0.048	-0.013
Mean number of unique drug classes dispensed	3.5	3.3	3.5	3.2	-0.034	-0.010

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1h. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	19,723	99.7%	19,723	95.3%	N/A	N/A
Demographic Characteristics						
Age (years)	49.4	12.6	50.2	14.8	-0.760	-0.055
Age						
18-44 years	7,126	36.1%	7,211	36.6%	-0.431	-0.009
45-64 years	11,084	56.2%	10,140	51.4%	4.786	0.096
≥ 65 years	1,513	7.7%	2,372	12.0%	-4.355	-0.147
Sex						
Female	10,502	53.2%	9,972	50.6%	2.687	0.054
Male	9,221	46.8%	9,751	49.4%	-2.687	-0.054
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	19,723	100.0%	19,723	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	19,723	100.0%	19,723	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	19,723	100.0%	19,723	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.2	-0.068	-0.052
Allergic Reaction	1,340	6.8%	1,359	6.9%	-0.096	-0.004
Diabetes	2,278	11.5%	2,151	10.9%	0.644	0.020
Heart Failure	269	1.4%	368	1.9%	-0.502	-0.040
Ischemic Heart Disease	795	4.0%	852	4.3%	-0.289	-0.014

Table 1h. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	2,834	14.4%	2,791	14.2%	0.218	0.006
Acquired Hypothyroidism ⁵	1,560	7.9%	1,513	7.7%	0.238	0.009
Acute Myocardial Infarction ⁵	151	0.8%	284	1.4%	-0.674	-0.065
Alzheimers Disease and Related Disorders ⁵	106	0.5%	108	0.5%	-0.010	-0.001
Anemia ⁵	1,165	5.9%	1,114	5.6%	0.259	0.011
Asthma ⁵	978	5.0%	669	3.4%	1.567	0.078
Atrial Fibrillation ⁵	183	0.9%	999	5.1%	-4.137	-0.244
Benign Prostatic Hyperplasia ⁵	364	1.8%	519	2.6%	-0.786	-0.053
Cataract ⁵	721	3.7%	874	4.4%	-0.776	-0.039
Chronic Kidney Disease ⁵	1,638	8.3%	1,358	6.9%	1.420	0.054
Bronchiectasis ⁵	576	2.9%	550	2.8%	0.132	0.008
Depression ⁵	2,214	11.2%	2,262	11.5%	-0.243	-0.008
Glaucoma ⁵	546	2.8%	572	2.9%	-0.132	-0.008
Hip or Pelvic Fracture ⁵	30	0.2%	20	0.1%	0.051	0.014
Hyperlipidemia ⁵	4,774	24.2%	5,028	25.5%	-1.288	-0.030
Hypertension ⁵	7,059	35.8%	5,957	30.2%	5.587	0.119
Osteoporosis ⁵	247	1.3%	266	1.3%	-0.096	-0.009
Rheumatoid Arthritis or Osteoarthritis ⁵	2,119	10.7%	2,206	11.2%	-0.441	-0.014
Stroke or Transient Ischemic Attack ⁵	365	1.9%	359	1.8%	0.030	0.002
Breast Cancer ⁵	280	1.4%	195	1.0%	0.431	0.040
Colorectal Cancer ⁵	87	0.4%	56	0.3%	0.157	0.026
Prostate Cancer ⁵	129	0.7%	156	0.8%	-0.137	-0.016
Lung Cancer ⁵	35	0.2%	31	0.2%	0.020	0.005
Endometrial Cancer ⁵	37	0.2%	15	0.1%	0.112	0.031
Urologic Cancer ⁵	39	0.2%	36	0.2%	0.015	0.003
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.7	7.3	5.8	6.6	-0.103	-0.015
Mean number of emergency room encounters	0.3	0.7	0.3	0.7	-0.016	-0.022
Mean number of inpatient hospital encounters	0.1	0.3	0.1	0.3	-0.011	-0.032
Mean number of non-acute institutional encounters	0.0	0.0	0.0	NaN	NaN	NaN
Mean number of other ambulatory encounters	1.8	4.2	1.9	3.6	-0.100	-0.026

Table 1h. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	6.9	8.4	7.0	8.3	-0.195	-0.023
Mean number of generics dispensed	3.7	3.6	3.8	3.5	-0.055	-0.016
Mean number of unique drug classes dispensed	3.5	3.3	3.5	3.2	-0.042	-0.013

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1i. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	195,769	100.0%	232,685	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.1	12.2	45.8	15.9	5.212	0.367
Age						
18-44 years	59,236	30.3%	115,242	49.5%	-19.269	-0.401
45-64 years	119,939	61.3%	95,455	41.0%	20.242	0.414
≥ 65 years	16,594	8.5%	21,988	9.4%	-0.973	-0.034
Sex						
Female	84,788	43.3%	146,632	63.0%	-19.707	-0.403
Male	110,981	56.7%	86,053	37.0%	19.707	0.403
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	195,769	100.0%	232,685	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	195,769	100.0%	232,685	100.0%	0.000	NaN
Year						
2020	42,887	21.9%	47,812	20.5%	1.359	0.033
2021	122,695	62.7%	147,225	63.3%	-0.599	-0.012
2022	30,187	15.4%	37,648	16.2%	-0.760	-0.021
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.2	1.2	1.0	1.8	-0.733	-0.469
Allergic Reaction	11,624	5.9%	20,374	8.8%	-2.818	-0.108
Diabetes	32,623	16.7%	19,760	8.5%	8.172	0.248
Heart Failure	2,013	1.0%	10,810	4.6%	-3.618	-0.219
Ischemic Heart Disease	5,237	2.7%	22,419	9.6%	-6.960	-0.293

Table 1i. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	28,103	14.4%	35,789	15.4%	-1.026	-0.029
Acquired Hypothyroidism ⁵	13,488	6.9%	20,625	8.9%	-1.974	-0.073
Acute Myocardial Infarction ⁵	1,049	0.5%	8,979	3.9%	-3.323	-0.228
Alzheimers Disease and Related Disorders ⁵	848	0.4%	2,212	1.0%	-0.517	-0.062
Anemia ⁵	9,052	4.6%	23,148	9.9%	-5.324	-0.206
Asthma ⁵	7,409	3.8%	13,485	5.8%	-2.011	-0.094
Atrial Fibrillation ⁵	1,731	0.9%	13,534	5.8%	-4.932	-0.277
Benign Prostatic Hyperplasia ⁵	4,131	2.1%	4,990	2.1%	-0.034	-0.002
Cataract ⁵	7,739	4.0%	8,047	3.5%	0.495	0.026
Chronic Kidney Disease ⁵	18,095	9.2%	19,107	8.2%	1.032	0.037
Bronchiectasis ⁵	4,262	2.2%	8,626	3.7%	-1.530	-0.091
Depression ⁵	16,852	8.6%	44,407	19.1%	-10.476	-0.307
Glaucoma ⁵	5,183	2.6%	5,707	2.5%	0.195	0.012
Hip or Pelvic Fracture ⁵	228	0.1%	523	0.2%	-0.108	-0.026
Hyperlipidemia ⁵	50,353	25.7%	54,024	23.2%	2.503	0.058
Hypertension ⁵	73,985	37.8%	64,623	27.8%	10.019	0.215
Osteoporosis ⁵	1,908	1.0%	3,105	1.3%	-0.360	-0.034
Rheumatoid Arthritis or Osteoarthritis ⁵	19,918	10.2%	24,776	10.6%	-0.474	-0.016
Stroke or Transient Ischemic Attack ⁵	3,364	1.7%	5,326	2.3%	-0.571	-0.041
Breast Cancer ⁵	2,006	1.0%	3,088	1.3%	-0.302	-0.028
Colorectal Cancer ⁵	674	0.3%	889	0.4%	-0.038	-0.006
Prostate Cancer ⁵	1,282	0.7%	1,608	0.7%	-0.036	-0.004
Lung Cancer ⁵	287	0.1%	900	0.4%	-0.240	-0.047
Endometrial Cancer ⁵	309	0.2%	309	0.1%	0.025	0.007
Urologic Cancer ⁵	316	0.2%	504	0.2%	-0.055	-0.013
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	4.9	6.6	7.6	9.0	-2.725	-0.347
Mean number of emergency room encounters	0.2	0.7	0.4	1.0	-0.179	-0.208
Mean number of inpatient hospital encounters	0.1	0.3	0.2	0.6	-0.165	-0.367
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.015
Mean number of other ambulatory encounters	1.6	3.6	2.8	5.7	-1.286	-0.271

Table 1i. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.1	8.0	8.3	9.9	-2.228	-0.248
Mean number of generics dispensed	3.2	3.3	4.2	4.0	-1.064	-0.290
Mean number of unique drug classes dispensed	3.0	3.0	4.0	3.7	-1.022	-0.302

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1j. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	128,126	65.4%	128,126	55.1%	N/A	N/A
Demographic Characteristics						
Age (years)	49.2	12.5	50.0	14.6	-0.843	-0.062
Age						
18-44 years	46,803	36.5%	46,678	36.4%	0.098	0.002
45-64 years	72,275	56.4%	66,945	52.2%	4.160	0.084
≥ 65 years	9,048	7.1%	14,503	11.3%	-4.258	-0.148
Sex						
Female	68,394	53.4%	65,303	51.0%	2.412	0.048
Male	59,732	46.6%	62,823	49.0%	-2.412	-0.048
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	128,126	100.0%	128,126	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	128,126	100.0%	128,126	100.0%	0.000	NaN
Year						
2020	27,193	21.2%	27,543	21.5%	-0.273	-0.007
2021	80,593	62.9%	80,470	62.8%	0.096	0.002
2022	20,340	15.9%	20,113	15.7%	0.177	0.005
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.3	-0.067	-0.050
Allergic Reaction	8,723	6.8%	8,744	6.8%	-0.016	-0.001
Diabetes	15,084	11.8%	13,788	10.8%	1.012	0.032
Heart Failure	1,921	1.5%	2,519	2.0%	-0.467	-0.036
Ischemic Heart Disease	5,033	3.9%	5,516	4.3%	-0.377	-0.019

Table 1j. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	18,754	14.6%	18,820	14.7%	-0.052	-0.001
Acquired Hypothyroidism ⁵	9,781	7.6%	10,122	7.9%	-0.266	-0.010
Acute Myocardial Infarction ⁵	1,027	0.8%	1,938	1.5%	-0.711	-0.067
Alzheimers Disease and Related Disorders ⁵	729	0.6%	684	0.5%	0.035	0.005
Anemia ⁵	7,520	5.9%	7,228	5.6%	0.228	0.010
Asthma ⁵	6,247	4.9%	4,388	3.4%	1.451	0.073
Atrial Fibrillation ⁵	1,377	1.1%	6,752	5.3%	-4.195	-0.241
Benign Prostatic Hyperplasia ⁵	2,155	1.7%	3,281	2.6%	-0.879	-0.061
Cataract ⁵	4,441	3.5%	5,339	4.2%	-0.701	-0.037
Chronic Kidney Disease ⁵	11,093	8.7%	8,814	6.9%	1.779	0.066
Bronchiectasis ⁵	3,469	2.7%	3,114	2.4%	0.277	0.018
Depression ⁵	14,450	11.3%	14,329	11.2%	0.094	0.003
Glaucoma ⁵	3,098	2.4%	3,591	2.8%	-0.385	-0.024
Hip or Pelvic Fracture ⁵	186	0.1%	172	0.1%	0.011	0.003
Hyperlipidemia ⁵	30,380	23.7%	32,046	25.0%	-1.300	-0.030
Hypertension ⁵	46,551	36.3%	39,280	30.7%	5.675	0.120
Osteoporosis ⁵	1,413	1.1%	1,700	1.3%	-0.224	-0.020
Rheumatoid Arthritis or Osteoarthritis ⁵	13,762	10.7%	13,579	10.6%	0.143	0.005
Stroke or Transient Ischemic Attack ⁵	2,543	2.0%	2,347	1.8%	0.153	0.011
Breast Cancer ⁵	1,691	1.3%	1,320	1.0%	0.290	0.027
Colorectal Cancer ⁵	548	0.4%	326	0.3%	0.173	0.030
Prostate Cancer ⁵	737	0.6%	945	0.7%	-0.162	-0.020
Lung Cancer ⁵	265	0.2%	220	0.2%	0.035	0.008
Endometrial Cancer ⁵	264	0.2%	113	0.1%	0.118	0.031
Urologic Cancer ⁵	256	0.2%	221	0.2%	0.027	0.006
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.6	7.4	5.7	6.6	-0.062	-0.009
Mean number of emergency room encounters	0.3	0.8	0.3	0.7	-0.010	-0.014
Mean number of inpatient hospital encounters	0.1	0.3	0.1	0.4	-0.011	-0.030
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.000
Mean number of other ambulatory encounters	1.8	4.1	1.8	3.8	-0.044	-0.011

Table 1j. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.8	8.6	6.8	8.3	0.000	0.000
Mean number of generics dispensed	3.5	3.5	3.5	3.4	0.008	0.002
Mean number of unique drug classes dispensed	3.3	3.3	3.3	3.2	0.009	0.003

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1k. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	27,193	100.0%	27,543	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.5	49.8	14.5	-0.624	-0.046
Age						
18-44 years	9,890	36.4%	10,155	36.9%	-0.500	-0.010
45-64 years	15,438	56.8%	14,460	52.5%	4.272	0.086
≥ 65 years	1,865	6.9%	2,928	10.6%	-3.772	-0.134
Sex						
Female	14,710	54.1%	14,394	52.3%	1.835	0.037
Male	12,483	45.9%	13,149	47.7%	-1.835	-0.037
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	27,193	100.0%	27,543	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	27,193	100.0%	27,543	100.0%	0.000	NaN
Year						
2020	27,193	100.0%	27,543	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.3	-0.049	-0.037
Allergic Reaction	1,773	6.5%	1,789	6.5%	0.025	0.001
Diabetes	3,169	11.7%	2,696	9.8%	1.865	0.060
Heart Failure	404	1.5%	491	1.8%	-0.297	-0.023
Ischemic Heart Disease	1,072	3.9%	1,209	4.4%	-0.447	-0.022

Table 1k. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	3,949	14.5%	4,101	14.9%	-0.367	-0.010
Acquired Hypothyroidism ⁵	2,094	7.7%	2,152	7.8%	-0.113	-0.004
Acute Myocardial Infarction ⁵	220	0.8%	439	1.6%	-0.785	-0.072
Alzheimers Disease and Related Disorders ⁵	151	0.6%	123	0.4%	0.109	0.015
Anemia ⁵	1,603	5.9%	1,554	5.6%	0.253	0.011
Asthma ⁵	1,374	5.1%	937	3.4%	1.651	0.082
Atrial Fibrillation ⁵	308	1.1%	1,355	4.9%	-3.787	-0.222
Benign Prostatic Hyperplasia ⁵	477	1.8%	664	2.4%	-0.657	-0.046
Cataract ⁵	933	3.4%	1,096	4.0%	-0.548	-0.029
Chronic Kidney Disease ⁵	2,286	8.4%	1,831	6.6%	1.759	0.067
Bronchiectasis ⁵	691	2.5%	664	2.4%	0.130	0.008
Depression ⁵	3,059	11.2%	3,022	11.0%	0.277	0.009
Glaucoma ⁵	621	2.3%	759	2.8%	-0.472	-0.030
Hip or Pelvic Fracture ⁵	43	0.2%	49	0.2%	-0.020	-0.005
Hyperlipidemia ⁵	6,252	23.0%	6,592	23.9%	-0.942	-0.022
Hypertension ⁵	9,587	35.3%	8,221	29.8%	5.408	0.116
Osteoporosis ⁵	303	1.1%	363	1.3%	-0.204	-0.019
Rheumatoid Arthritis or Osteoarthritis ⁵	2,776	10.2%	2,792	10.1%	0.072	0.002
Stroke or Transient Ischemic Attack ⁵	559	2.1%	508	1.8%	0.211	0.015
Breast Cancer ⁵	359	1.3%	305	1.1%	0.213	0.019
Colorectal Cancer ⁵	106	0.4%	74	0.3%	0.121	0.021
Prostate Cancer ⁵	160	0.6%	223	0.8%	-0.221	-0.027
Lung Cancer ⁵	69	0.3%	46	0.2%	0.087	0.019
Endometrial Cancer ⁵	50	0.2%	22	0.1%	0.104	0.029
Urologic Cancer ⁵	52	0.2%	47	0.2%	0.021	0.005
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.3	7.4	5.4	6.6	-0.025	-0.004
Mean number of emergency room encounters	0.2	0.7	0.3	0.7	-0.023	-0.032
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.011	-0.029
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.002
Mean number of other ambulatory encounters	1.7	3.9	1.8	3.7	-0.016	-0.004

Table 1k. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.7	8.7	6.8	8.6	-0.053	-0.006
Mean number of generics dispensed	3.3	3.5	3.4	3.4	-0.021	-0.006
Mean number of unique drug classes dispensed	3.2	3.2	3.2	3.2	-0.017	-0.005

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1I. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	26,855	98.8%	26,855	97.5%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.5	49.9	14.5	-0.824	-0.061
Age						
18-44 years	9,811	36.5%	9,815	36.5%	-0.015	-0.000
45-64 years	15,238	56.7%	14,155	52.7%	4.033	0.081
≥ 65 years	1,806	6.7%	2,885	10.7%	-4.018	-0.143
Sex						
Female	14,574	54.3%	13,942	51.9%	2.353	0.047
Male	12,281	45.7%	12,913	48.1%	-2.353	-0.047
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	26,855	100.0%	26,855	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	26,855	100.0%	26,855	100.0%	0.000	NaN
Year						
2020	26,855	100.0%	26,855	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.3	-0.049	-0.038
Allergic Reaction	1,753	6.5%	1,737	6.5%	0.060	0.002
Diabetes	3,048	11.3%	2,655	9.9%	1.463	0.048
Heart Failure	398	1.5%	480	1.8%	-0.305	-0.024
Ischemic Heart Disease	1,064	4.0%	1,176	4.4%	-0.417	-0.021

Table 1I. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	3,902	14.5%	3,997	14.9%	-0.354	-0.010
Acquired Hypothyroidism ⁵	2,067	7.7%	2,098	7.8%	-0.115	-0.004
Acute Myocardial Infarction ⁵	217	0.8%	428	1.6%	-0.786	-0.072
Alzheimers Disease and Related Disorders ⁵	147	0.5%	122	0.5%	0.093	0.013
Anemia ⁵	1,580	5.9%	1,512	5.6%	0.253	0.011
Asthma ⁵	1,360	5.1%	908	3.4%	1.683	0.084
Atrial Fibrillation ⁵	304	1.1%	1,330	5.0%	-3.821	-0.224
Benign Prostatic Hyperplasia ⁵	464	1.7%	650	2.4%	-0.693	-0.049
Cataract ⁵	912	3.4%	1,079	4.0%	-0.622	-0.033
Chronic Kidney Disease ⁵	2,234	8.3%	1,799	6.7%	1.620	0.061
Bronchiectasis ⁵	686	2.6%	648	2.4%	0.142	0.009
Depression ⁵	3,035	11.3%	2,910	10.8%	0.465	0.015
Glaucoma ⁵	602	2.2%	744	2.8%	-0.529	-0.034
Hip or Pelvic Fracture ⁵	42	0.2%	49	0.2%	-0.026	-0.006
Hyperlipidemia ⁵	6,138	22.9%	6,456	24.0%	-1.184	-0.028
Hypertension ⁵	9,440	35.2%	8,056	30.0%	5.154	0.110
Osteoporosis ⁵	297	1.1%	357	1.3%	-0.223	-0.020
Rheumatoid Arthritis or Osteoarthritis ⁵	2,739	10.2%	2,720	10.1%	0.071	0.002
Stroke or Transient Ischemic Attack ⁵	555	2.1%	495	1.8%	0.223	0.016
Breast Cancer ⁵	352	1.3%	296	1.1%	0.209	0.019
Colorectal Cancer ⁵	102	0.4%	71	0.3%	0.115	0.020
Prostate Cancer ⁵	157	0.6%	221	0.8%	-0.238	-0.029
Lung Cancer ⁵	66	0.2%	44	0.2%	0.082	0.018
Endometrial Cancer ⁵	49	0.2%	22	0.1%	0.101	0.028
Urologic Cancer ⁵	52	0.2%	47	0.2%	0.019	0.004
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.3	7.3	5.4	6.6	-0.022	-0.003
Mean number of emergency room encounters	0.2	0.7	0.3	0.7	-0.021	-0.030
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.011	-0.031
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.003
Mean number of other ambulatory encounters	1.7	3.9	1.8	3.7	-0.011	-0.003

Table 1I. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.7	8.7	6.7	8.6	-0.020	-0.002
Mean number of generics dispensed	3.4	3.5	3.4	3.4	-0.007	-0.002
Mean number of unique drug classes dispensed	3.2	3.2	3.2	3.2	-0.002	-0.001

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1m. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	80,593	100.0%	80,470	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.5	50.0	14.6	-0.919	-0.068
Age						
18-44 years	29,593	36.7%	29,256	36.4%	0.363	0.008
45-64 years	45,430	56.4%	42,123	52.3%	4.023	0.081
≥ 65 years	5,570	6.9%	9,091	11.3%	-4.386	-0.153
Sex						
Female	42,858	53.2%	40,908	50.8%	2.342	0.047
Male	37,735	46.8%	39,562	49.2%	-2.342	-0.047
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	80,593	100.0%	80,470	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	80,593	100.0%	80,470	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	80,593	100.0%	80,470	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.3	-0.069	-0.052
Allergic Reaction	5,559	6.9%	5,573	6.9%	-0.028	-0.001
Diabetes	9,590	11.9%	8,863	11.0%	0.885	0.028
Heart Failure	1,239	1.5%	1,628	2.0%	-0.486	-0.037
Ischemic Heart Disease	3,156	3.9%	3,468	4.3%	-0.394	-0.020

Table 1m. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	11,861	14.7%	11,856	14.7%	-0.016	-0.000
Acquired Hypothyroidism ⁵	6,086	7.6%	6,418	8.0%	-0.424	-0.016
Acute Myocardial Infarction ⁵	656	0.8%	1,208	1.5%	-0.687	-0.064
Alzheimers Disease and Related Disorders ⁵	460	0.6%	444	0.6%	0.019	0.003
Anemia ⁵	4,738	5.9%	4,518	5.6%	0.264	0.011
Asthma ⁵	3,873	4.8%	2,769	3.4%	1.365	0.069
Atrial Fibrillation ⁵	883	1.1%	4,351	5.4%	-4.311	-0.245
Benign Prostatic Hyperplasia ⁵	1,324	1.6%	2,048	2.5%	-0.902	-0.063
Cataract ⁵	2,749	3.4%	3,353	4.2%	-0.756	-0.040
Chronic Kidney Disease ⁵	7,136	8.9%	5,610	7.0%	1.883	0.070
Bronchiectasis ⁵	2,173	2.7%	1,900	2.4%	0.335	0.021
Depression ⁵	9,147	11.3%	9,068	11.3%	0.081	0.003
Glaucoma ⁵	1,905	2.4%	2,252	2.8%	-0.435	-0.027
Hip or Pelvic Fracture ⁵	109	0.1%	94	0.1%	0.018	0.005
Hyperlipidemia ⁵	19,201	23.8%	20,286	25.2%	-1.385	-0.032
Hypertension ⁵	29,678	36.8%	24,954	31.0%	5.814	0.123
Osteoporosis ⁵	846	1.0%	1,064	1.3%	-0.273	-0.025
Rheumatoid Arthritis or Osteoarthritis ⁵	8,808	10.9%	8,538	10.6%	0.319	0.010
Stroke or Transient Ischemic Attack ⁵	1,600	2.0%	1,465	1.8%	0.165	0.012
Breast Cancer ⁵	1,048	1.3%	821	1.0%	0.280	0.026
Colorectal Cancer ⁵	352	0.4%	200	0.2%	0.188	0.032
Prostate Cancer ⁵	450	0.6%	572	0.7%	-0.152	-0.019
Lung Cancer ⁵	162	0.2%	135	0.2%	0.033	0.008
Endometrial Cancer ⁵	177	0.2%	77	0.1%	0.124	0.031
Urologic Cancer ⁵	165	0.2%	136	0.2%	0.036	0.008
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.7	7.5	5.7	6.6	-0.067	-0.010
Mean number of emergency room encounters	0.3	0.8	0.3	0.7	-0.004	-0.006
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.010	-0.028
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.001
Mean number of other ambulatory encounters	1.8	4.2	1.9	3.7	-0.035	-0.009

Table 1m. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.8	8.7	6.7	8.2	0.057	0.007
Mean number of generics dispensed	3.5	3.5	3.4	3.4	0.025	0.007
Mean number of unique drug classes dispensed	3.3	3.3	3.3	3.1	0.023	0.007

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1n. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	80,126	99.4%	80,126	99.6%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.5	50.0	14.6	-0.893	-0.066
Age						
18-44 years	29,384	36.7%	29,139	36.4%	0.306	0.006
45-64 years	45,202	56.4%	41,960	52.4%	4.046	0.081
≥ 65 years	5,540	6.9%	9,027	11.3%	-4.352	-0.152
Sex						
Female	42,570	53.1%	40,752	50.9%	2.269	0.045
Male	37,556	46.9%	39,374	49.1%	-2.269	-0.045
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	80,126	100.0%	80,126	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	80,126	100.0%	80,126	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	80,126	100.0%	80,126	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	0.4	1.3	-0.071	-0.053
Allergic Reaction	5,528	6.9%	5,552	6.9%	-0.030	-0.001
Diabetes	9,540	11.9%	8,796	11.0%	0.929	0.029
Heart Failure	1,227	1.5%	1,617	2.0%	-0.487	-0.037
Ischemic Heart Disease	3,122	3.9%	3,450	4.3%	-0.409	-0.021

Table 1n. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	11,793	14.7%	11,809	14.7%	-0.020	-0.001
Acquired Hypothyroidism ⁵	6,037	7.5%	6,395	8.0%	-0.447	-0.017
Acute Myocardial Infarction ⁵	649	0.8%	1,202	1.5%	-0.690	-0.065
Alzheimers Disease and Related Disorders ⁵	456	0.6%	444	0.6%	0.015	0.002
Anemia ⁵	4,702	5.9%	4,495	5.6%	0.258	0.011
Asthma ⁵	3,843	4.8%	2,758	3.4%	1.354	0.068
Atrial Fibrillation ⁵	875	1.1%	4,328	5.4%	-4.309	-0.245
Benign Prostatic Hyperplasia ⁵	1,319	1.6%	2,040	2.5%	-0.900	-0.063
Cataract ⁵	2,735	3.4%	3,333	4.2%	-0.746	-0.039
Chronic Kidney Disease ⁵	7,087	8.8%	5,586	7.0%	1.873	0.069
Bronchiectasis ⁵	2,159	2.7%	1,889	2.4%	0.337	0.021
Depression ⁵	9,068	11.3%	9,034	11.3%	0.042	0.001
Glaucoma ⁵	1,898	2.4%	2,239	2.8%	-0.426	-0.027
Hip or Pelvic Fracture ⁵	109	0.1%	94	0.1%	0.019	0.005
Hyperlipidemia ⁵	19,087	23.8%	20,193	25.2%	-1.380	-0.032
Hypertension ⁵	29,504	36.8%	24,819	31.0%	5.847	0.124
Osteoporosis ⁵	842	1.1%	1,058	1.3%	-0.270	-0.025
Rheumatoid Arthritis or Osteoarthritis ⁵	8,749	10.9%	8,500	10.6%	0.311	0.010
Stroke or Transient Ischemic Attack ⁵	1,585	2.0%	1,458	1.8%	0.159	0.012
Breast Cancer ⁵	1,040	1.3%	817	1.0%	0.278	0.026
Colorectal Cancer ⁵	352	0.4%	197	0.2%	0.193	0.033
Prostate Cancer ⁵	449	0.6%	572	0.7%	-0.154	-0.019
Lung Cancer ⁵	162	0.2%	135	0.2%	0.034	0.008
Endometrial Cancer ⁵	176	0.2%	77	0.1%	0.124	0.031
Urologic Cancer ⁵	162	0.2%	135	0.2%	0.034	0.008
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.7	7.5	5.7	6.6	-0.072	-0.010
Mean number of emergency room encounters	0.3	0.8	0.3	0.7	-0.005	-0.006
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.010	-0.028
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.001
Mean number of other ambulatory encounters	1.8	4.2	1.9	3.7	-0.040	-0.010

Table 1n. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.8	8.7	6.7	8.2	0.048	0.006
Mean number of generics dispensed	3.5	3.5	3.4	3.4	0.020	0.006
Mean number of unique drug classes dispensed	3.3	3.3	3.3	3.1	0.019	0.006

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1o. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	20,340	100.0%	20,113	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.5	12.6	50.3	14.8	-0.842	-0.061
Age						
18-44 years	7,320	36.0%	7,267	36.1%	-0.143	-0.003
45-64 years	11,407	56.1%	10,362	51.5%	4.563	0.092
≥ 65 years	1,613	7.9%	2,484	12.4%	-4.420	-0.147
Sex						
Female	10,826	53.2%	10,001	49.7%	3.501	0.070
Male	9,514	46.8%	10,112	50.3%	-3.501	-0.070
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	20,340	100.0%	20,113	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	20,340	100.0%	20,113	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	20,340	100.0%	20,113	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.3	0.4	1.3	-0.081	-0.062
Allergic Reaction	1,391	6.8%	1,382	6.9%	-0.032	-0.001
Diabetes	2,325	11.4%	2,229	11.1%	0.348	0.011
Heart Failure	278	1.4%	400	2.0%	-0.622	-0.048
Ischemic Heart Disease	805	4.0%	839	4.2%	-0.214	-0.011

Table 1o. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	2,944	14.5%	2,863	14.2%	0.239	0.007
Acquired Hypothyroidism ⁵	1,601	7.9%	1,552	7.7%	0.155	0.006
Acute Myocardial Infarction ⁵	151	0.7%	291	1.4%	-0.704	-0.068
Alzheimers Disease and Related Disorders ⁵	118	0.6%	117	0.6%	-0.002	-0.000
Anemia ⁵	1,179	5.8%	1,156	5.7%	0.049	0.002
Asthma ⁵	1,000	4.9%	682	3.4%	1.526	0.077
Atrial Fibrillation ⁵	186	0.9%	1,046	5.2%	-4.286	-0.251
Benign Prostatic Hyperplasia ⁵	354	1.7%	569	2.8%	-1.089	-0.073
Cataract ⁵	759	3.7%	890	4.4%	-0.693	-0.035
Chronic Kidney Disease ⁵	1,671	8.2%	1,373	6.8%	1.389	0.053
Bronchiectasis ⁵	605	3.0%	550	2.7%	0.240	0.014
Depression ⁵	2,244	11.0%	2,239	11.1%	-0.100	-0.003
Glaucoma ⁵	572	2.8%	580	2.9%	-0.072	-0.004
Hip or Pelvic Fracture ⁵	34	0.2%	29	0.1%	0.023	0.006
Hyperlipidemia ⁵	4,927	24.2%	5,168	25.7%	-1.472	-0.034
Hypertension ⁵	7,286	35.8%	6,105	30.4%	5.468	0.116
Osteoporosis ⁵	264	1.3%	273	1.4%	-0.059	-0.005
Rheumatoid Arthritis or Osteoarthritis ⁵	2,178	10.7%	2,249	11.2%	-0.474	-0.015
Stroke or Transient Ischemic Attack ⁵	384	1.9%	374	1.9%	0.028	0.002
Breast Cancer ⁵	284	1.4%	194	1.0%	0.432	0.040
Colorectal Cancer ⁵	90	0.4%	52	0.3%	0.184	0.031
Prostate Cancer ⁵	127	0.6%	150	0.7%	-0.121	-0.015
Lung Cancer ⁵	34	0.2%	39	0.2%	-0.027	-0.006
Endometrial Cancer ⁵	37	0.2%	14	0.1%	0.112	0.032
Urologic Cancer ⁵	39	0.2%	38	0.2%	0.003	0.001
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.7	7.2	5.8	6.5	-0.100	-0.015
Mean number of emergency room encounters	0.3	0.7	0.3	0.7	-0.016	-0.023
Mean number of inpatient hospital encounters	0.1	0.3	0.1	0.3	-0.014	-0.042
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.000
Mean number of other ambulatory encounters	1.8	4.1	1.9	4.1	-0.117	-0.028

Table 1o. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.8	8.4	7.0	8.3	-0.156	-0.019
Mean number of generics dispensed	3.7	3.6	3.8	3.5	-0.027	-0.008
Mean number of unique drug classes dispensed	3.5	3.3	3.5	3.2	-0.015	-0.005

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1p. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	19,930	98.0%	19,930	99.1%	N/A	N/A
Demographic Characteristics						
Age (years)	49.6	12.6	50.3	14.8	-0.762	-0.055
Age						
18-44 years	7,144	35.8%	7,207	36.2%	-0.316	-0.007
45-64 years	11,199	56.2%	10,285	51.6%	4.586	0.092
≥ 65 years	1,587	8.0%	2,438	12.2%	-4.270	-0.142
Sex						
Female	10,561	53.0%	9,917	49.8%	3.231	0.065
Male	9,369	47.0%	10,013	50.2%	-3.231	-0.065
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	19,930	100.0%	19,930	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	19,930	100.0%	19,930	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	19,930	100.0%	19,930	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.3	0.4	1.3	-0.080	-0.061
Allergic Reaction	1,361	6.8%	1,371	6.9%	-0.050	-0.002
Diabetes	2,295	11.5%	2,161	10.8%	0.672	0.021
Heart Failure	275	1.4%	394	2.0%	-0.597	-0.046
Ischemic Heart Disease	787	3.9%	832	4.2%	-0.226	-0.011

Table 1p. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	2,888	14.5%	2,836	14.2%	0.261	0.007
Acquired Hypothyroidism ⁵	1,570	7.9%	1,536	7.7%	0.171	0.006
Acute Myocardial Infarction ⁵	147	0.7%	287	1.4%	-0.702	-0.068
Alzheimers Disease and Related Disorders ⁵	117	0.6%	116	0.6%	0.005	0.001
Anemia ⁵	1,158	5.8%	1,137	5.7%	0.105	0.005
Asthma ⁵	976	4.9%	671	3.4%	1.530	0.077
Atrial Fibrillation ⁵	181	0.9%	1,038	5.2%	-4.300	-0.252
Benign Prostatic Hyperplasia ⁵	348	1.7%	556	2.8%	-1.044	-0.070
Cataract ⁵	745	3.7%	880	4.4%	-0.677	-0.034
Chronic Kidney Disease ⁵	1,644	8.2%	1,351	6.8%	1.470	0.056
Bronchiectasis ⁵	591	3.0%	549	2.8%	0.211	0.013
Depression ⁵	2,189	11.0%	2,206	11.1%	-0.085	-0.003
Glaucoma ⁵	559	2.8%	572	2.9%	-0.065	-0.004
Hip or Pelvic Fracture ⁵	33	0.2%	29	0.1%	0.020	0.005
Hyperlipidemia ⁵	4,849	24.3%	5,098	25.6%	-1.249	-0.029
Hypertension ⁵	7,150	35.9%	6,030	30.3%	5.620	0.120
Osteoporosis ⁵	260	1.3%	271	1.4%	-0.055	-0.005
Rheumatoid Arthritis or Osteoarthritis ⁵	2,132	10.7%	2,223	11.2%	-0.457	-0.015
Stroke or Transient Ischemic Attack ⁵	374	1.9%	370	1.9%	0.020	0.001
Breast Cancer ⁵	278	1.4%	192	1.0%	0.432	0.040
Colorectal Cancer ⁵	89	0.4%	52	0.3%	0.186	0.031
Prostate Cancer ⁵	123	0.6%	147	0.7%	-0.120	-0.015
Lung Cancer ⁵	32	0.2%	38	0.2%	-0.030	-0.007
Endometrial Cancer ⁵	35	0.2%	14	0.1%	0.105	0.030
Urologic Cancer ⁵	39	0.2%	37	0.2%	0.010	0.002
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.7	7.2	5.8	6.5	-0.103	-0.015
Mean number of emergency room encounters	0.3	0.7	0.3	0.7	-0.017	-0.024
Mean number of inpatient hospital encounters	0.1	0.3	0.1	0.3	-0.013	-0.040
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.000
Mean number of other ambulatory encounters	1.8	4.1	1.9	4.1	-0.111	-0.027

Table 1p. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.8	8.4	7.0	8.3	-0.158	-0.019
Mean number of generics dispensed	3.7	3.6	3.8	3.5	-0.028	-0.008
Mean number of unique drug classes dispensed	3.5	3.3	3.5	3.2	-0.018	-0.006

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1q. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	152,513	100.0%	183,104	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.0	12.1	45.4	15.7	5.551	0.397
Age						
18-44 years	45,977	30.1%	91,969	50.2%	-20.081	-0.418
45-64 years	94,553	62.0%	75,691	41.3%	20.659	0.423
≥ 65 years	11,983	7.9%	15,444	8.4%	-0.578	-0.021
Sex						
Female	66,418	43.5%	116,196	63.5%	-19.910	-0.407
Male	86,095	56.5%	66,908	36.5%	19.910	0.407
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	152,513	100.0%	183,104	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	152,513	100.0%	183,104	100.0%	0.000	NaN
Year						
2020	30,026	19.7%	33,990	18.6%	1.124	0.029
2021	97,032	63.6%	116,972	63.9%	-0.261	-0.005
2022	25,455	16.7%	32,142	17.6%	-0.864	-0.023
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.3	1.4	1.1	2.0	-0.801	-0.475
Allergic Reaction	14,730	9.7%	24,988	13.6%	-3.989	-0.125
Diabetes	26,812	17.6%	15,721	8.6%	8.994	0.269
Heart Failure	1,680	1.1%	8,583	4.7%	-3.586	-0.215
Ischemic Heart Disease	4,827	3.2%	18,723	10.2%	-7.060	-0.285

Table 1q. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	31,207	20.5%	41,173	22.5%	-2.024	-0.049
Acquired Hypothyroidism ⁵	13,585	8.9%	19,845	10.8%	-1.931	-0.065
Acute Myocardial Infarction ⁵	915	0.6%	7,485	4.1%	-3.488	-0.232
Alzheimers Disease and Related Disorders ⁵	721	0.5%	1,811	1.0%	-0.516	-0.061
Anemia ⁵	9,365	6.1%	21,998	12.0%	-5.873	-0.206
Asthma ⁵	8,224	5.4%	14,420	7.9%	-2.483	-0.100
Atrial Fibrillation ⁵	1,433	0.9%	10,907	6.0%	-5.017	-0.278
Benign Prostatic Hyperplasia ⁵	4,553	3.0%	5,261	2.9%	0.112	0.007
Cataract ⁵	9,239	6.1%	9,597	5.2%	0.817	0.035
Chronic Kidney Disease ⁵	16,123	10.6%	16,287	8.9%	1.677	0.057
Bronchiectasis ⁵	4,794	3.1%	8,541	4.7%	-1.521	-0.079
Depression ⁵	17,218	11.3%	42,789	23.4%	-12.079	-0.323
Glaucoma ⁵	5,614	3.7%	6,058	3.3%	0.372	0.020
Hip or Pelvic Fracture ⁵	247	0.2%	513	0.3%	-0.118	-0.025
Hyperlipidemia ⁵	48,856	32.0%	50,557	27.6%	4.423	0.097
Hypertension ⁵	64,220	42.1%	53,584	29.3%	12.844	0.271
Osteoporosis ⁵	2,086	1.4%	3,291	1.8%	-0.430	-0.034
Rheumatoid Arthritis or Osteoarthritis ⁵	21,395	14.0%	26,084	14.2%	-0.217	-0.006
Stroke or Transient Ischemic Attack ⁵	3,023	2.0%	4,809	2.6%	-0.644	-0.043
Breast Cancer ⁵	1,973	1.3%	2,899	1.6%	-0.290	-0.024
Colorectal Cancer ⁵	646	0.4%	807	0.4%	-0.017	-0.003
Prostate Cancer ⁵	1,174	0.8%	1,413	0.8%	-0.002	-0.000
Lung Cancer ⁵	248	0.2%	749	0.4%	-0.246	-0.046
Endometrial Cancer ⁵	306	0.2%	291	0.2%	0.042	0.010
Urologic Cancer ⁵	316	0.2%	450	0.2%	-0.039	-0.008
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	8.9	11.2	13.4	15.3	-4.596	-0.343
Mean number of emergency room encounters	0.3	0.9	0.6	1.4	-0.255	-0.220
Mean number of inpatient hospital encounters	0.1	0.4	0.3	0.7	-0.189	-0.355
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.018
Mean number of other ambulatory encounters	2.7	5.8	4.7	9.1	-2.025	-0.267

Table 1q. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	11.7	15.2	15.7	18.4	-4.036	-0.239
Mean number of generics dispensed	4.5	4.3	6.0	5.3	-1.567	-0.325
Mean number of unique drug classes dispensed	4.1	3.8	5.6	4.7	-1.452	-0.339

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³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1r. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	107,560	70.5%	107,560	58.7%	N/A	N/A
Demographic Characteristics						
Age (years)	49.3	12.4	49.9	14.5	-0.641	-0.047
Age						
18-44 years	38,549	35.8%	39,157	36.4%	-0.565	-0.012
45-64 years	61,757	57.4%	56,922	52.9%	4.495	0.090
≥ 65 years	7,254	6.7%	11,481	10.7%	-3.930	-0.140
Sex						
Female	56,863	52.9%	54,628	50.8%	2.078	0.042
Male	50,697	47.1%	52,932	49.2%	-2.078	-0.042
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	107,560	100.0%	107,560	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	107,560	100.0%	107,560	100.0%	0.000	NaN
Year						
2020	21,182	19.7%	20,228	18.8%	0.887	0.022
2021	68,476	63.7%	68,359	63.6%	0.109	0.002
2022	17,902	16.6%	18,973	17.6%	-0.996	-0.026
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.5	1.5	0.6	1.4	-0.070	-0.048
Allergic Reaction	11,345	10.5%	12,558	11.7%	-1.128	-0.036
Diabetes	20,397	19.0%	8,745	8.1%	10.833	0.321
Heart Failure	1,579	1.5%	3,132	2.9%	-1.444	-0.099
Ischemic Heart Disease	3,692	3.4%	11,529	10.7%	-7.286	-0.287

Table 1r. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	23,736	22.1%	21,479	20.0%	2.098	0.052
Acquired Hypothyroidism ⁵	10,721	10.0%	10,712	10.0%	0.008	0.000
Acute Myocardial Infarction ⁵	787	0.7%	4,204	3.9%	-3.177	-0.212
Alzheimers Disease and Related Disorders ⁵	634	0.6%	656	0.6%	-0.020	-0.003
Anemia ⁵	8,414	7.8%	7,789	7.2%	0.581	0.022
Asthma ⁵	7,279	6.8%	5,527	5.1%	1.629	0.069
Atrial Fibrillation ⁵	1,148	1.1%	6,385	5.9%	-4.869	-0.267
Benign Prostatic Hyperplasia ⁵	2,570	2.4%	4,107	3.8%	-1.429	-0.082
Cataract ⁵	6,157	5.7%	6,887	6.4%	-0.679	-0.028
Chronic Kidney Disease ⁵	13,321	12.4%	7,344	6.8%	5.557	0.189
Bronchiectasis ⁵	4,087	3.8%	3,816	3.5%	0.252	0.013
Depression ⁵	15,341	14.3%	15,976	14.9%	-0.590	-0.017
Glaucoma ⁵	3,850	3.6%	4,105	3.8%	-0.237	-0.013
Hip or Pelvic Fracture ⁵	221	0.2%	203	0.2%	0.017	0.004
Hyperlipidemia ⁵	33,818	31.4%	34,424	32.0%	-0.563	-0.012
Hypertension ⁵	43,922	40.8%	35,895	33.4%	7.463	0.155
Osteoporosis ⁵	1,610	1.5%	2,053	1.9%	-0.412	-0.032
Rheumatoid Arthritis or Osteoarthritis ⁵	15,862	14.7%	15,647	14.5%	0.200	0.006
Stroke or Transient Ischemic Attack ⁵	2,503	2.3%	2,305	2.1%	0.184	0.012
Breast Cancer ⁵	1,747	1.6%	1,353	1.3%	0.366	0.031
Colorectal Cancer ⁵	540	0.5%	342	0.3%	0.184	0.029
Prostate Cancer ⁵	708	0.7%	1,022	1.0%	-0.292	-0.033
Lung Cancer ⁵	228	0.2%	207	0.2%	0.020	0.004
Endometrial Cancer ⁵	281	0.3%	115	0.1%	0.154	0.036
Urologic Cancer ⁵	270	0.3%	203	0.2%	0.062	0.013
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	10.1	12.5	10.3	11.5	-0.277	-0.023
Mean number of emergency room encounters	0.4	1.0	0.4	1.0	-0.020	-0.020
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.022	-0.052
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.001
Mean number of other ambulatory encounters	3.1	6.6	3.2	5.9	-0.130	-0.021

Table 1r. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	13.0	16.3	13.1	16.2	-0.143	-0.009
Mean number of generics dispensed	5.0	4.6	5.0	4.5	-0.032	-0.007
Mean number of unique drug classes dispensed	4.6	4.1	4.6	4.0	-0.024	-0.006

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1s. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	21,182	100.0%	20,228	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	11.9	49.7	14.0	-0.601	-0.046
Age						
18-44 years	7,416	35.0%	7,197	35.6%	-0.569	-0.012
45-64 years	12,660	59.8%	11,250	55.6%	4.152	0.084
≥ 65 years	1,106	5.2%	1,781	8.8%	-3.583	-0.141
Sex						
Female	11,385	53.7%	10,377	51.3%	2.448	0.049
Male	9,797	46.3%	9,851	48.7%	-2.448	-0.049
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	21,182	100.0%	20,228	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	21,182	100.0%	20,228	100.0%	0.000	NaN
Year						
2020	21,182	100.0%	20,228	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.5	1.5	0.6	1.4	-0.049	-0.035
Allergic Reaction	2,149	10.1%	2,208	10.9%	-0.770	-0.025
Diabetes	3,974	18.8%	1,484	7.3%	11.425	0.344
Heart Failure	264	1.2%	510	2.5%	-1.275	-0.094
Ischemic Heart Disease	699	3.3%	2,167	10.7%	-7.413	-0.294

Table 1s. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	4,778	22.6%	4,197	20.7%	1.808	0.044
Acquired Hypothyroidism ⁵	2,108	10.0%	2,056	10.2%	-0.212	-0.007
Acute Myocardial Infarction ⁵	141	0.7%	792	3.9%	-3.250	-0.219
Alzheimers Disease and Related Disorders ⁵	95	0.4%	85	0.4%	0.028	0.004
Anemia ⁵	1,618	7.6%	1,376	6.8%	0.836	0.032
Asthma ⁵	1,510	7.1%	1,067	5.3%	1.854	0.077
Atrial Fibrillation ⁵	202	1.0%	1,127	5.6%	-4.618	-0.262
Benign Prostatic Hyperplasia ⁵	481	2.3%	737	3.6%	-1.373	-0.081
Cataract ⁵	1,187	5.6%	1,219	6.0%	-0.422	-0.018
Chronic Kidney Disease ⁵	2,499	11.8%	1,274	6.3%	5.500	0.193
Bronchiectasis ⁵	850	4.0%	760	3.8%	0.256	0.013
Depression ⁵	2,945	13.9%	2,930	14.5%	-0.582	-0.017
Glaucoma ⁵	782	3.7%	711	3.5%	0.177	0.009
Hip or Pelvic Fracture ⁵	40	0.2%	38	0.2%	0.001	0.000
Hyperlipidemia ⁵	6,434	30.4%	6,272	31.0%	-0.632	-0.014
Hypertension ⁵	8,404	39.7%	6,721	33.2%	6.449	0.134
Osteoporosis ⁵	301	1.4%	356	1.8%	-0.339	-0.027
Rheumatoid Arthritis or Osteoarthritis ⁵	3,047	14.4%	2,799	13.8%	0.548	0.016
Stroke or Transient Ischemic Attack ⁵	504	2.4%	435	2.2%	0.229	0.015
Breast Cancer ⁵	348	1.6%	287	1.4%	0.224	0.018
Colorectal Cancer ⁵	95	0.4%	67	0.3%	0.117	0.019
Prostate Cancer ⁵	126	0.6%	185	0.9%	-0.320	-0.037
Lung Cancer ⁵	46	0.2%	38	0.2%	0.029	0.007
Endometrial Cancer ⁵	49	0.2%	23	0.1%	0.118	0.028
Urologic Cancer ⁵	52	0.2%	36	0.2%	0.068	0.015
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	9.7	11.7	9.9	11.2	-0.236	-0.021
Mean number of emergency room encounters	0.4	0.9	0.4	1.0	-0.034	-0.035
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.018	-0.043
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.001
Mean number of other ambulatory encounters	2.7	5.4	2.7	5.3	-0.060	-0.011

Table 1s. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	13.1	16.6	13.2	16.3	-0.108	-0.007
Mean number of generics dispensed	4.9	4.6	5.0	4.6	-0.060	-0.013
Mean number of unique drug classes dispensed	4.6	4.1	4.6	4.1	-0.048	-0.012

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1t. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	20,112	94.9%	20,112	99.4%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	11.9	49.7	14.0	-0.566	-0.044
Age						
18-44 years	6,999	34.8%	7,150	35.6%	-0.751	-0.016
45-64 years	12,063	60.0%	11,198	55.7%	4.301	0.087
≥ 65 years	1,050	5.2%	1,764	8.8%	-3.550	-0.140
Sex						
Female	10,745	53.4%	10,323	51.3%	2.098	0.042
Male	9,367	46.6%	9,789	48.7%	-2.098	-0.042
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	20,112	100.0%	20,112	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	20,112	100.0%	20,112	100.0%	0.000	NaN
Year						
2020	20,112	100.0%	20,112	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.5	1.5	0.6	1.4	-0.057	-0.040
Allergic Reaction	2,052	10.2%	2,199	10.9%	-0.731	-0.024
Diabetes	3,757	18.7%	1,479	7.4%	11.327	0.341
Heart Failure	253	1.3%	505	2.5%	-1.253	-0.092
Ischemic Heart Disease	661	3.3%	2,156	10.7%	-7.433	-0.294

Table 1t. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	4,518	22.5%	4,179	20.8%	1.686	0.041
Acquired Hypothyroidism ⁵	2,004	10.0%	2,047	10.2%	-0.214	-0.007
Acute Myocardial Infarction ⁵	131	0.7%	788	3.9%	-3.267	-0.220
Alzheimers Disease and Related Disorders ⁵	87	0.4%	84	0.4%	0.015	0.002
Anemia ⁵	1,525	7.6%	1,367	6.8%	0.786	0.030
Asthma ⁵	1,427	7.1%	1,057	5.3%	1.840	0.076
Atrial Fibrillation ⁵	193	1.0%	1,122	5.6%	-4.619	-0.262
Benign Prostatic Hyperplasia ⁵	460	2.3%	728	3.6%	-1.333	-0.079
Cataract ⁵	1,129	5.6%	1,208	6.0%	-0.393	-0.017
Chronic Kidney Disease ⁵	2,367	11.8%	1,267	6.3%	5.469	0.192
Bronchiectasis ⁵	794	3.9%	753	3.7%	0.204	0.011
Depression ⁵	2,777	13.8%	2,915	14.5%	-0.686	-0.020
Glaucoma ⁵	753	3.7%	709	3.5%	0.219	0.012
Hip or Pelvic Fracture ⁵	37	0.2%	37	0.2%	0.000	0.000
Hyperlipidemia ⁵	6,107	30.4%	6,243	31.0%	-0.676	-0.015
Hypertension ⁵	8,009	39.8%	6,684	33.2%	6.588	0.137
Osteoporosis ⁵	286	1.4%	356	1.8%	-0.348	-0.028
Rheumatoid Arthritis or Osteoarthritis ⁵	2,869	14.3%	2,780	13.8%	0.443	0.013
Stroke or Transient Ischemic Attack ⁵	472	2.3%	433	2.2%	0.194	0.013
Breast Cancer ⁵	328	1.6%	286	1.4%	0.209	0.017
Colorectal Cancer ⁵	88	0.4%	67	0.3%	0.104	0.017
Prostate Cancer ⁵	118	0.6%	184	0.9%	-0.328	-0.038
Lung Cancer ⁵	43	0.2%	37	0.2%	0.030	0.007
Endometrial Cancer ⁵	45	0.2%	23	0.1%	0.109	0.027
Urologic Cancer ⁵	49	0.2%	36	0.2%	0.065	0.014
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	9.7	11.7	9.9	11.2	-0.293	-0.026
Mean number of emergency room encounters	0.4	0.9	0.4	1.0	-0.035	-0.036
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.021	-0.050
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.000
Mean number of other ambulatory encounters	2.7	5.3	2.7	5.3	-0.068	-0.013

Table 1t. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	13.1	16.6	13.2	16.3	-0.139	-0.008
Mean number of generics dispensed	4.9	4.6	5.0	4.6	-0.077	-0.017
Mean number of unique drug classes dispensed	4.6	4.1	4.6	4.1	-0.064	-0.016

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1u. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	68,476	100.0%	68,359	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.4	49.7	14.5	-0.590	-0.044
Age						
18-44 years	24,910	36.4%	25,192	36.9%	-0.475	-0.010
45-64 years	38,995	56.9%	36,054	52.7%	4.205	0.085
≥ 65 years	4,571	6.7%	7,113	10.4%	-3.730	-0.134
Sex						
Female	35,950	52.5%	34,645	50.7%	1.819	0.036
Male	32,526	47.5%	33,714	49.3%	-1.819	-0.036
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	68,476	100.0%	68,359	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	68,476	100.0%	68,359	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	68,476	100.0%	68,359	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.5	1.5	0.6	1.4	-0.076	-0.052
Allergic Reaction	7,211	10.5%	7,963	11.6%	-1.118	-0.036
Diabetes	12,984	19.0%	5,601	8.2%	10.768	0.318
Heart Failure	1,036	1.5%	2,023	3.0%	-1.446	-0.098
Ischemic Heart Disease	2,333	3.4%	7,246	10.6%	-7.193	-0.285

Table 1u. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	14,963	21.9%	13,567	19.8%	2.005	0.049
Acquired Hypothyroidism ⁵	6,706	9.8%	6,728	9.8%	-0.049	-0.002
Acute Myocardial Infarction ⁵	512	0.7%	2,691	3.9%	-3.189	-0.212
Alzheimers Disease and Related Disorders ⁵	416	0.6%	428	0.6%	-0.019	-0.002
Anemia ⁵	5,283	7.7%	4,939	7.2%	0.490	0.019
Asthma ⁵	4,523	6.6%	3,519	5.1%	1.457	0.062
Atrial Fibrillation ⁵	759	1.1%	4,109	6.0%	-4.902	-0.267
Benign Prostatic Hyperplasia ⁵	1,619	2.4%	2,551	3.7%	-1.367	-0.080
Cataract ⁵	3,777	5.5%	4,261	6.2%	-0.717	-0.031
Chronic Kidney Disease ⁵	8,557	12.5%	4,670	6.8%	5.665	0.193
Bronchiectasis ⁵	2,501	3.7%	2,320	3.4%	0.259	0.014
Depression ⁵	9,899	14.5%	10,172	14.9%	-0.424	-0.012
Glaucoma ⁵	2,312	3.4%	2,586	3.8%	-0.407	-0.022
Hip or Pelvic Fracture ⁵	137	0.2%	127	0.2%	0.014	0.003
Hyperlipidemia ⁵	21,349	31.2%	21,713	31.8%	-0.586	-0.013
Hypertension ⁵	28,013	40.9%	22,692	33.2%	7.714	0.160
Osteoporosis ⁵	991	1.4%	1,283	1.9%	-0.430	-0.034
Rheumatoid Arthritis or Osteoarthritis ⁵	10,024	14.6%	9,858	14.4%	0.218	0.006
Stroke or Transient Ischemic Attack ⁵	1,575	2.3%	1,387	2.0%	0.271	0.019
Breast Cancer ⁵	1,087	1.6%	828	1.2%	0.376	0.032
Colorectal Cancer ⁵	341	0.5%	216	0.3%	0.182	0.029
Prostate Cancer ⁵	454	0.7%	627	0.9%	-0.254	-0.029
Lung Cancer ⁵	146	0.2%	131	0.2%	0.022	0.005
Endometrial Cancer ⁵	190	0.3%	75	0.1%	0.168	0.038
Urologic Cancer ⁵	174	0.3%	125	0.2%	0.071	0.015
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	10.0	12.7	10.3	11.5	-0.245	-0.020
Mean number of emergency room encounters	0.4	1.0	0.4	1.0	-0.015	-0.015
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.024	-0.057
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.001
Mean number of other ambulatory encounters	3.2	6.8	3.3	6.0	-0.131	-0.020

Table 1u. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	12.9	16.3	13.0	16.1	-0.057	-0.003
Mean number of generics dispensed	4.9	4.6	4.9	4.5	-0.006	-0.001
Mean number of unique drug classes dispensed	4.5	4.1	4.5	4.0	-0.002	-0.001

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1v. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

	Medical Product		Covariate Balance			
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	67,983	99.3%	67,983	99.4%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.4	49.8	14.5	-0.649	-0.048
Age						
18-44 years	24,786	36.5%	24,990	36.8%	-0.300	-0.006
45-64 years	38,685	56.9%	35,904	52.8%	4.091	0.082
≥ 65 years	4,512	6.6%	7,089	10.4%	-3.791	-0.136
Sex						
Female	35,787	52.6%	34,410	50.6%	2.026	0.041
Male	32,196	47.4%	33,573	49.4%	-2.026	-0.041
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	67,983	100.0%	67,983	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	67,983	100.0%	67,983	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	67,983	100.0%	67,983	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.5	1.5	0.6	1.4	-0.073	-0.050
Allergic Reaction	7,154	10.5%	7,927	11.7%	-1.137	-0.036
Diabetes	12,904	19.0%	5,572	8.2%	10.785	0.319
Heart Failure	1,032	1.5%	2,009	3.0%	-1.437	-0.097
Ischemic Heart Disease	2,315	3.4%	7,203	10.6%	-7.190	-0.285

Table 1v. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	14,875	21.9%	13,499	19.9%	2.024	0.050
Acquired Hypothyroidism ⁵	6,667	9.8%	6,695	9.8%	-0.041	-0.001
Acute Myocardial Infarction ⁵	510	0.8%	2,675	3.9%	-3.185	-0.212
Alzheimers Disease and Related Disorders ⁵	414	0.6%	425	0.6%	-0.016	-0.002
Anemia ⁵	5,256	7.7%	4,907	7.2%	0.513	0.020
Asthma ⁵	4,496	6.6%	3,493	5.1%	1.475	0.063
Atrial Fibrillation ⁵	753	1.1%	4,082	6.0%	-4.897	-0.267
Benign Prostatic Hyperplasia ⁵	1,599	2.4%	2,545	3.7%	-1.392	-0.081
Cataract ⁵	3,743	5.5%	4,250	6.3%	-0.746	-0.032
Chronic Kidney Disease ⁵	8,506	12.5%	4,642	6.8%	5.684	0.193
Bronchiectasis ⁵	2,487	3.7%	2,309	3.4%	0.262	0.014
Depression ⁵	9,862	14.5%	10,091	14.8%	-0.337	-0.010
Glaucoma ⁵	2,296	3.4%	2,578	3.8%	-0.415	-0.022
Hip or Pelvic Fracture ⁵	137	0.2%	127	0.2%	0.015	0.003
Hyperlipidemia ⁵	21,186	31.2%	21,602	31.8%	-0.612	-0.013
Hypertension ⁵	27,808	40.9%	22,582	33.2%	7.687	0.160
Osteoporosis ⁵	984	1.4%	1,280	1.9%	-0.435	-0.034
Rheumatoid Arthritis or Osteoarthritis ⁵	9,948	14.6%	9,816	14.4%	0.194	0.006
Stroke or Transient Ischemic Attack ⁵	1,570	2.3%	1,382	2.0%	0.277	0.019
Breast Cancer ⁵	1,079	1.6%	824	1.2%	0.375	0.032
Colorectal Cancer ⁵	336	0.5%	216	0.3%	0.177	0.028
Prostate Cancer ⁵	447	0.7%	625	0.9%	-0.262	-0.030
Lung Cancer ⁵	146	0.2%	129	0.2%	0.025	0.006
Endometrial Cancer ⁵	189	0.3%	74	0.1%	0.169	0.039
Urologic Cancer ⁵	174	0.3%	124	0.2%	0.074	0.016
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	10.0	12.7	10.3	11.5	-0.226	-0.019
Mean number of emergency room encounters	0.4	1.0	0.4	1.0	-0.015	-0.015
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.023	-0.055
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.001
Mean number of other ambulatory encounters	3.2	6.8	3.3	6.0	-0.121	-0.019

Table 1v. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	12.9	16.3	13.0	16.1	-0.035	-0.002
Mean number of generics dispensed	4.9	4.6	4.9	4.5	0.003	0.001
Mean number of unique drug classes dispensed	4.5	4.1	4.5	4.0	0.006	0.001

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1w. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	17,902	100.0%	18,973	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.9	12.8	50.8	15.2	-0.819	-0.058
Age						
18-44 years	6,223	34.8%	6,768	35.7%	-0.910	-0.019
45-64 years	10,102	56.4%	9,618	50.7%	5.736	0.115
≥ 65 years	1,577	8.8%	2,587	13.6%	-4.826	-0.153
Sex						
Female	9,528	53.2%	9,606	50.6%	2.593	0.052
Male	8,374	46.8%	9,367	49.4%	-2.593	-0.052
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	17,902	100.0%	18,973	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	17,902	100.0%	18,973	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	17,902	100.0%	18,973	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.6	1.6	0.6	1.4	-0.068	-0.046
Allergic Reaction	1,985	11.1%	2,387	12.6%	-1.493	-0.046
Diabetes	3,439	19.2%	1,660	8.7%	10.461	0.305
Heart Failure	279	1.6%	599	3.2%	-1.599	-0.106
Ischemic Heart Disease	660	3.7%	2,116	11.2%	-7.466	-0.288

Table 1w. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	3,995	22.3%	3,715	19.6%	2.735	0.067
Acquired Hypothyroidism ⁵	1,907	10.7%	1,928	10.2%	0.491	0.016
Acute Myocardial Infarction ⁵	134	0.7%	721	3.8%	-3.052	-0.206
Alzheimers Disease and Related Disorders ⁵	123	0.7%	143	0.8%	-0.067	-0.008
Anemia ⁵	1,513	8.5%	1,474	7.8%	0.683	0.025
Asthma ⁵	1,246	7.0%	941	5.0%	2.000	0.085
Atrial Fibrillation ⁵	187	1.0%	1,149	6.1%	-5.011	-0.273
Benign Prostatic Hyperplasia ⁵	470	2.6%	819	4.3%	-1.691	-0.092
Cataract ⁵	1,193	6.7%	1,407	7.4%	-0.752	-0.029
Chronic Kidney Disease ⁵	2,265	12.7%	1,400	7.4%	5.273	0.176
Bronchiectasis ⁵	736	4.1%	736	3.9%	0.232	0.012
Depression ⁵	2,497	13.9%	2,874	15.1%	-1.200	-0.034
Glaucoma ⁵	756	4.2%	808	4.3%	-0.036	-0.002
Hip or Pelvic Fracture ⁵	44	0.2%	38	0.2%	0.045	0.010
Hyperlipidemia ⁵	6,035	33.7%	6,439	33.9%	-0.226	-0.005
Hypertension ⁵	7,505	41.9%	6,482	34.2%	7.758	0.160
Osteoporosis ⁵	318	1.8%	414	2.2%	-0.406	-0.029
Rheumatoid Arthritis or Osteoarthritis ⁵	2,791	15.6%	2,990	15.8%	-0.169	-0.005
Stroke or Transient Ischemic Attack ⁵	424	2.4%	483	2.5%	-0.177	-0.011
Breast Cancer ⁵	312	1.7%	238	1.3%	0.488	0.040
Colorectal Cancer ⁵	104	0.6%	59	0.3%	0.270	0.041
Prostate Cancer ⁵	128	0.7%	210	1.1%	-0.392	-0.041
Lung Cancer ⁵	36	0.2%	38	0.2%	0.001	0.000
Endometrial Cancer ⁵	42	0.2%	17	0.1%	0.145	0.036
Urologic Cancer ⁵	44	0.2%	42	0.2%	0.024	0.005
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	10.6	12.3	11.0	11.8	-0.387	-0.032
Mean number of emergency room encounters	0.4	1.0	0.4	1.0	-0.020	-0.020
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.018	-0.044
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.004
Mean number of other ambulatory encounters	3.3	7.1	3.5	6.1	-0.171	-0.026

Table 1w. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	13.2	15.9	13.7	16.3	-0.485	-0.030
Mean number of generics dispensed	5.3	4.6	5.4	4.6	-0.075	-0.016
Mean number of unique drug classes dispensed	4.8	4.1	4.9	4.1	-0.062	-0.015

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1x. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	17,836	99.6%	17,836	94.0%	N/A	N/A
Demographic Characteristics						
Age (years)	50.0	12.8	50.7	15.2	-0.688	-0.049
Age						
18-44 years	6,189	34.7%	6,431	36.1%	-1.357	-0.028
45-64 years	10,072	56.5%	8,984	50.4%	6.100	0.123
≥ 65 years	1,575	8.8%	2,421	13.6%	-4.743	-0.151
Sex						
Female	9,472	53.1%	9,074	50.9%	2.231	0.045
Male	8,364	46.9%	8,762	49.1%	-2.231	-0.045
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	17,836	100.0%	17,836	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	17,836	100.0%	17,836	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	17,836	100.0%	17,836	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.6	1.6	0.6	1.4	-0.072	-0.048
Allergic Reaction	1,974	11.1%	2,246	12.6%	-1.525	-0.047
Diabetes	3,423	19.2%	1,561	8.8%	10.440	0.305
Heart Failure	276	1.5%	566	3.2%	-1.626	-0.107
Ischemic Heart Disease	657	3.7%	1,986	11.1%	-7.451	-0.287

Table 1x. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	3,975	22.3%	3,505	19.7%	2.635	0.065
Acquired Hypothyroidism ⁵	1,901	10.7%	1,818	10.2%	0.465	0.015
Acute Myocardial Infarction ⁵	133	0.7%	682	3.8%	-3.078	-0.207
Alzheimers Disease and Related Disorders ⁵	123	0.7%	133	0.7%	-0.056	-0.007
Anemia ⁵	1,508	8.5%	1,391	7.8%	0.656	0.024
Asthma ⁵	1,241	7.0%	881	4.9%	2.018	0.085
Atrial Fibrillation ⁵	187	1.0%	1,063	6.0%	-4.911	-0.270
Benign Prostatic Hyperplasia ⁵	470	2.6%	767	4.3%	-1.665	-0.091
Cataract ⁵	1,191	6.7%	1,311	7.4%	-0.673	-0.026
Chronic Kidney Disease ⁵	2,251	12.6%	1,322	7.4%	5.209	0.174
Bronchiectasis ⁵	728	4.1%	691	3.9%	0.207	0.011
Depression ⁵	2,479	13.9%	2,711	15.2%	-1.301	-0.037
Glaucoma ⁵	754	4.2%	746	4.2%	0.045	0.002
Hip or Pelvic Fracture ⁵	44	0.2%	37	0.2%	0.039	0.008
Hyperlipidemia ⁵	6,013	33.7%	6,018	33.7%	-0.028	-0.001
Hypertension ⁵	7,478	41.9%	6,073	34.0%	7.877	0.163
Osteoporosis ⁵	318	1.8%	389	2.2%	-0.398	-0.029
Rheumatoid Arthritis or Osteoarthritis ⁵	2,777	15.6%	2,827	15.8%	-0.280	-0.008
Stroke or Transient Ischemic Attack ⁵	422	2.4%	456	2.6%	-0.191	-0.012
Breast Cancer ⁵	311	1.7%	226	1.3%	0.477	0.039
Colorectal Cancer ⁵	104	0.6%	55	0.3%	0.275	0.041
Prostate Cancer ⁵	128	0.7%	200	1.1%	-0.404	-0.042
Lung Cancer ⁵	36	0.2%	36	0.2%	0.000	0.000
Endometrial Cancer ⁵	42	0.2%	14	0.1%	0.157	0.040
Urologic Cancer ⁵	43	0.2%	39	0.2%	0.022	0.005
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	10.6	12.3	11.0	11.8	-0.442	-0.037
Mean number of emergency room encounters	0.4	1.0	0.4	1.0	-0.020	-0.020
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.019	-0.045
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.004
Mean number of other ambulatory encounters	3.3	7.1	3.5	6.1	-0.188	-0.028

Table 1x. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	13.2	15.8	13.8	16.4	-0.565	-0.035
Mean number of generics dispensed	5.3	4.6	5.4	4.6	-0.099	-0.021
Mean number of unique drug classes dispensed	4.8	4.1	4.9	4.1	-0.083	-0.020

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1y. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	152,513	100.0%	183,104	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.0	12.1	45.4	15.7	5.551	0.397
Age						
18-44 years	45,977	30.1%	91,969	50.2%	-20.081	-0.418
45-64 years	94,553	62.0%	75,691	41.3%	20.659	0.423
≥ 65 years	11,983	7.9%	15,444	8.4%	-0.578	-0.021
Sex						
Female	66,418	43.5%	116,196	63.5%	-19.910	-0.407
Male	86,095	56.5%	66,908	36.5%	19.910	0.407
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	152,513	100.0%	183,104	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	152,513	100.0%	183,104	100.0%	0.000	NaN
Year						
2020	30,026	19.7%	33,990	18.6%	1.124	0.029
2021	97,032	63.6%	116,972	63.9%	-0.261	-0.005
2022	25,455	16.7%	32,142	17.6%	-0.864	-0.023
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.3	1.4	1.1	2.0	-0.801	-0.475
Allergic Reaction	14,730	9.7%	24,988	13.6%	-3.989	-0.125
Diabetes	26,812	17.6%	15,721	8.6%	8.994	0.269
Heart Failure	1,680	1.1%	8,583	4.7%	-3.586	-0.215
Ischemic Heart Disease	4,827	3.2%	18,723	10.2%	-7.060	-0.285

Table 1y. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	31,207	20.5%	41,173	22.5%	-2.024	-0.049
Acquired Hypothyroidism ⁵	13,585	8.9%	19,845	10.8%	-1.931	-0.065
Acute Myocardial Infarction ⁵	915	0.6%	7,485	4.1%	-3.488	-0.232
Alzheimers Disease and Related Disorders ⁵	721	0.5%	1,811	1.0%	-0.516	-0.061
Anemia ⁵	9,365	6.1%	21,998	12.0%	-5.873	-0.206
Asthma ⁵	8,224	5.4%	14,420	7.9%	-2.483	-0.100
Atrial Fibrillation ⁵	1,433	0.9%	10,907	6.0%	-5.017	-0.278
Benign Prostatic Hyperplasia ⁵	4,553	3.0%	5,261	2.9%	0.112	0.007
Cataract ⁵	9,239	6.1%	9,597	5.2%	0.817	0.035
Chronic Kidney Disease ⁵	16,123	10.6%	16,287	8.9%	1.677	0.057
Bronchiectasis ⁵	4,794	3.1%	8,541	4.7%	-1.521	-0.079
Depression ⁵	17,218	11.3%	42,789	23.4%	-12.079	-0.323
Glaucoma ⁵	5,614	3.7%	6,058	3.3%	0.372	0.020
Hip or Pelvic Fracture ⁵	247	0.2%	513	0.3%	-0.118	-0.025
Hyperlipidemia ⁵	48,856	32.0%	50,557	27.6%	4.423	0.097
Hypertension ⁵	64,220	42.1%	53,584	29.3%	12.844	0.271
Osteoporosis ⁵	2,086	1.4%	3,291	1.8%	-0.430	-0.034
Rheumatoid Arthritis or Osteoarthritis ⁵	21,395	14.0%	26,084	14.2%	-0.217	-0.006
Stroke or Transient Ischemic Attack ⁵	3,023	2.0%	4,809	2.6%	-0.644	-0.043
Breast Cancer ⁵	1,973	1.3%	2,899	1.6%	-0.290	-0.024
Colorectal Cancer ⁵	646	0.4%	807	0.4%	-0.017	-0.003
Prostate Cancer ⁵	1,174	0.8%	1,413	0.8%	-0.002	-0.000
Lung Cancer ⁵	248	0.2%	749	0.4%	-0.246	-0.046
Endometrial Cancer ⁵	306	0.2%	291	0.2%	0.042	0.010
Urologic Cancer ⁵	316	0.2%	450	0.2%	-0.039	-0.008
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	8.9	11.2	13.4	15.3	-4.596	-0.343
Mean number of emergency room encounters	0.3	0.9	0.6	1.4	-0.255	-0.220
Mean number of inpatient hospital encounters	0.1	0.4	0.3	0.7	-0.189	-0.355
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.018
Mean number of other ambulatory encounters	2.7	5.8	4.7	9.1	-2.025	-0.267

Table 1y. Unadjusted Characteristics of New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	11.7	15.2	15.7	18.4	-4.036	-0.239
Mean number of generics dispensed	4.5	4.3	6.0	5.3	-1.567	-0.325
Mean number of unique drug classes dispensed	4.1	3.8	5.6	4.7	-1.452	-0.339

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1z. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	107,581	70.5%	107,581	58.8%	N/A	N/A
Demographic Characteristics						
Age (years)	49.3	12.4	49.9	14.5	-0.655	-0.049
Age						
18-44 years	38,653	35.9%	39,074	36.3%	-0.391	-0.008
45-64 years	61,728	57.4%	57,059	53.0%	4.340	0.087
≥ 65 years	7,200	6.7%	11,448	10.6%	-3.949	-0.141
Sex						
Female	56,813	52.8%	54,697	50.8%	1.967	0.039
Male	50,768	47.2%	52,884	49.2%	-1.967	-0.039
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	107,581	100.0%	107,581	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	107,581	100.0%	107,581	100.0%	0.000	NaN
Year						
2020	20,720	19.3%	20,721	19.3%	-0.001	-0.000
2021	68,452	63.6%	68,483	63.7%	-0.029	-0.001
2022	18,409	17.1%	18,377	17.1%	0.030	0.001
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.5	1.5	0.6	1.4	-0.070	-0.048
Allergic Reaction	11,463	10.7%	12,629	11.7%	-1.084	-0.034
Diabetes	20,356	18.9%	8,743	8.1%	10.795	0.320
Heart Failure	1,579	1.5%	3,121	2.9%	-1.433	-0.098
Ischemic Heart Disease	3,710	3.4%	11,528	10.7%	-7.267	-0.286

Table 1z. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	23,711	22.0%	21,423	19.9%	2.127	0.052
Acquired Hypothyroidism ⁵	10,742	10.0%	10,825	10.1%	-0.077	-0.003
Acute Myocardial Infarction ⁵	771	0.7%	4,184	3.9%	-3.172	-0.213
Alzheimers Disease and Related Disorders ⁵	653	0.6%	649	0.6%	0.004	0.000
Anemia ⁵	8,360	7.8%	7,674	7.1%	0.638	0.024
Asthma ⁵	7,297	6.8%	5,496	5.1%	1.674	0.071
Atrial Fibrillation ⁵	1,168	1.1%	6,369	5.9%	-4.834	-0.265
Benign Prostatic Hyperplasia ⁵	2,552	2.4%	4,100	3.8%	-1.439	-0.083
Cataract ⁵	6,121	5.7%	6,924	6.4%	-0.746	-0.031
Chronic Kidney Disease ⁵	13,345	12.4%	7,343	6.8%	5.579	0.190
Bronchiectasis ⁵	4,040	3.8%	3,897	3.6%	0.133	0.007
Depression ⁵	15,350	14.3%	15,997	14.9%	-0.601	-0.017
Glaucoma ⁵	3,838	3.6%	4,168	3.9%	-0.307	-0.016
Hip or Pelvic Fracture ⁵	217	0.2%	188	0.2%	0.027	0.006
Hyperlipidemia ⁵	33,891	31.5%	34,470	32.0%	-0.538	-0.012
Hypertension ⁵	43,927	40.8%	35,979	33.4%	7.388	0.153
Osteoporosis ⁵	1,571	1.5%	2,017	1.9%	-0.415	-0.032
Rheumatoid Arthritis or Osteoarthritis ⁵	15,851	14.7%	15,638	14.5%	0.198	0.006
Stroke or Transient Ischemic Attack ⁵	2,472	2.3%	2,264	2.1%	0.193	0.013
Breast Cancer ⁵	1,747	1.6%	1,377	1.3%	0.344	0.029
Colorectal Cancer ⁵	532	0.5%	332	0.3%	0.186	0.029
Prostate Cancer ⁵	767	0.7%	974	0.9%	-0.192	-0.021
Lung Cancer ⁵	231	0.2%	206	0.2%	0.023	0.005
Endometrial Cancer ⁵	282	0.3%	116	0.1%	0.154	0.036
Urologic Cancer ⁵	273	0.3%	205	0.2%	0.063	0.013
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	10.1	12.5	10.3	11.3	-0.247	-0.021
Mean number of emergency room encounters	0.4	1.0	0.4	1.0	-0.020	-0.020
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.023	-0.054
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.001
Mean number of other ambulatory encounters	3.1	6.6	3.2	5.6	-0.094	-0.015

Table 1z. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	13.0	16.3	13.1	16.1	-0.101	-0.006
Mean number of generics dispensed	5.0	4.6	5.0	4.5	-0.016	-0.004
Mean number of unique drug classes dispensed	4.6	4.1	4.6	4.0	-0.010	-0.002

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1aa. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	20,720	100.0%	20,721	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.0	11.9	49.5	14.0	-0.518	-0.040
Age						
18-44 years	7,325	35.4%	7,490	36.1%	-0.795	-0.017
45-64 years	12,356	59.6%	11,424	55.1%	4.501	0.091
≥ 65 years	1,039	5.0%	1,807	8.7%	-3.706	-0.147
Sex						
Female	11,141	53.8%	10,718	51.7%	2.044	0.041
Male	9,579	46.2%	10,003	48.3%	-2.044	-0.041
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	20,720	100.0%	20,721	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	20,720	100.0%	20,721	100.0%	0.000	NaN
Year						
2020	20,720	100.0%	20,721	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.5	1.5	0.6	1.3	-0.028	-0.020
Allergic Reaction	2,144	10.3%	2,283	11.0%	-0.670	-0.022
Diabetes	3,936	19.0%	1,536	7.4%	11.583	0.347
Heart Failure	264	1.3%	531	2.6%	-1.288	-0.094
Ischemic Heart Disease	697	3.4%	2,166	10.5%	-7.089	-0.282

Table 1aa. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	4,696	22.7%	4,237	20.4%	2.216	0.054
Acquired Hypothyroidism ⁵	2,076	10.0%	2,076	10.0%	0.000	0.000
Acute Myocardial Infarction ⁵	131	0.6%	783	3.8%	-3.147	-0.215
Alzheimers Disease and Related Disorders ⁵	94	0.5%	82	0.4%	0.058	0.009
Anemia ⁵	1,580	7.6%	1,428	6.9%	0.734	0.028
Asthma ⁵	1,491	7.2%	1,052	5.1%	2.119	0.088
Atrial Fibrillation ⁵	212	1.0%	1,135	5.5%	-4.454	-0.253
Benign Prostatic Hyperplasia ⁵	464	2.2%	745	3.6%	-1.356	-0.081
Cataract ⁵	1,158	5.6%	1,262	6.1%	-0.502	-0.021
Chronic Kidney Disease ⁵	2,472	11.9%	1,306	6.3%	5.628	0.196
Bronchiectasis ⁵	832	4.0%	781	3.8%	0.246	0.013
Depression ⁵	2,914	14.1%	3,045	14.7%	-0.632	-0.018
Glaucoma ⁵	773	3.7%	756	3.6%	0.082	0.004
Hip or Pelvic Fracture ⁵	43	0.2%	31	0.1%	0.058	0.014
Hyperlipidemia ⁵	6,282	30.3%	6,430	31.0%	-0.713	-0.015
Hypertension ⁵	8,218	39.7%	6,874	33.2%	6.488	0.135
Osteoporosis ⁵	296	1.4%	360	1.7%	-0.309	-0.025
Rheumatoid Arthritis or Osteoarthritis ⁵	2,916	14.1%	2,897	14.0%	0.092	0.003
Stroke or Transient Ischemic Attack ⁵	482	2.3%	402	1.9%	0.386	0.027
Breast Cancer ⁵	345	1.7%	302	1.5%	0.208	0.017
Colorectal Cancer ⁵	88	0.4%	60	0.3%	0.135	0.023
Prostate Cancer ⁵	132	0.6%	180	0.9%	-0.232	-0.027
Lung Cancer ⁵	46	0.2%	36	0.2%	0.048	0.011
Endometrial Cancer ⁵	45	0.2%	23	0.1%	0.106	0.026
Urologic Cancer ⁵	55	0.3%	42	0.2%	0.063	0.013
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	9.8	11.8	9.9	11.0	-0.149	-0.013
Mean number of emergency room encounters	0.4	0.9	0.4	0.9	-0.024	-0.027
Mean number of inpatient hospital encounters	0.1	0.5	0.1	0.4	-0.017	-0.040
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.004
Mean number of other ambulatory encounters	2.7	5.4	2.7	4.9	-0.020	-0.004

Table 1aa. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	13.2	16.8	13.2	16.1	0.088	0.005
Mean number of generics dispensed	5.0	4.6	5.0	4.5	-0.013	-0.003
Mean number of unique drug classes dispensed	4.6	4.1	4.6	4.0	-0.011	-0.003

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1ab. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product		Covariate Balance			
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	20,386	98.4%	20,386	98.4%	N/A	N/A
Demographic Characteristics						
Age (years)	49.0	11.9	49.5	14.0	-0.539	-0.042
Age						
18-44 years	7,208	35.4%	7,362	36.1%	-0.755	-0.016
45-64 years	12,158	59.6%	11,244	55.2%	4.483	0.091
≥ 65 years	1,020	5.0%	1,780	8.7%	-3.728	-0.148
Sex						
Female	10,934	53.6%	10,551	51.8%	1.879	0.038
Male	9,452	46.4%	9,835	48.2%	-1.879	-0.038
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	20,386	100.0%	20,386	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	20,386	100.0%	20,386	100.0%	0.000	NaN
Year						
2020	20,386	100.0%	20,386	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.5	1.4	0.6	1.3	-0.049	-0.035
Allergic Reaction	2,103	10.3%	2,252	11.0%	-0.731	-0.024
Diabetes	3,854	18.9%	1,520	7.5%	11.449	0.343
Heart Failure	248	1.2%	524	2.6%	-1.354	-0.099
Ischemic Heart Disease	677	3.3%	2,130	10.4%	-7.127	-0.284

Table 1ab. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	4,610	22.6%	4,166	20.4%	2.178	0.053
Acquired Hypothyroidism ⁵	2,027	9.9%	2,044	10.0%	-0.083	-0.003
Acute Myocardial Infarction ⁵	129	0.6%	766	3.8%	-3.125	-0.214
Alzheimers Disease and Related Disorders ⁵	87	0.4%	82	0.4%	0.025	0.004
Anemia ⁵	1,527	7.5%	1,404	6.9%	0.603	0.023
Asthma ⁵	1,459	7.2%	1,031	5.1%	2.099	0.088
Atrial Fibrillation ⁵	207	1.0%	1,115	5.5%	-4.454	-0.253
Benign Prostatic Hyperplasia ⁵	454	2.2%	736	3.6%	-1.383	-0.082
Cataract ⁵	1,133	5.6%	1,239	6.1%	-0.520	-0.022
Chronic Kidney Disease ⁵	2,406	11.8%	1,291	6.3%	5.469	0.191
Bronchiectasis ⁵	807	4.0%	769	3.8%	0.186	0.010
Depression ⁵	2,845	14.0%	2,991	14.7%	-0.716	-0.020
Glaucoma ⁵	761	3.7%	739	3.6%	0.108	0.006
Hip or Pelvic Fracture ⁵	43	0.2%	31	0.2%	0.059	0.014
Hyperlipidemia ⁵	6,174	30.3%	6,333	31.1%	-0.780	-0.017
Hypertension ⁵	8,067	39.6%	6,758	33.2%	6.421	0.134
Osteoporosis ⁵	290	1.4%	358	1.8%	-0.334	-0.027
Rheumatoid Arthritis or Osteoarthritis ⁵	2,860	14.0%	2,862	14.0%	-0.010	-0.000
Stroke or Transient Ischemic Attack ⁵	471	2.3%	397	1.9%	0.363	0.025
Breast Cancer ⁵	337	1.7%	299	1.5%	0.186	0.015
Colorectal Cancer ⁵	78	0.4%	59	0.3%	0.093	0.016
Prostate Cancer ⁵	127	0.6%	178	0.9%	-0.250	-0.029
Lung Cancer ⁵	42	0.2%	35	0.2%	0.034	0.008
Endometrial Cancer ⁵	43	0.2%	22	0.1%	0.103	0.026
Urologic Cancer ⁵	55	0.3%	42	0.2%	0.064	0.013
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	9.7	11.6	9.9	11.1	-0.248	-0.022
Mean number of emergency room encounters	0.4	0.9	0.4	0.9	-0.028	-0.031
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.023	-0.057
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.004
Mean number of other ambulatory encounters	2.7	5.4	2.7	4.9	-0.057	-0.011

Table 1ab. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	13.2	16.6	13.2	16.2	-0.016	-0.001
Mean number of generics dispensed	4.9	4.6	5.0	4.5	-0.044	-0.010
Mean number of unique drug classes dispensed	4.6	4.1	4.6	4.0	-0.038	-0.009

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1ac. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	68,452	100.0%	68,483	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.4	49.7	14.5	-0.597	-0.044
Age						
18-44 years	24,957	36.5%	25,127	36.7%	-0.232	-0.005
45-64 years	38,938	56.9%	36,285	53.0%	3.900	0.078
≥ 65 years	4,557	6.7%	7,071	10.3%	-3.668	-0.132
Sex						
Female	35,916	52.5%	34,785	50.8%	1.675	0.034
Male	32,536	47.5%	33,698	49.2%	-1.675	-0.034
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	68,452	100.0%	68,483	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	68,452	100.0%	68,483	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	68,452	100.0%	68,483	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.5	1.5	0.6	1.4	-0.080	-0.055
Allergic Reaction	7,244	10.6%	8,026	11.7%	-1.137	-0.036
Diabetes	12,952	18.9%	5,592	8.2%	10.756	0.318
Heart Failure	1,030	1.5%	2,028	3.0%	-1.457	-0.099
Ischemic Heart Disease	2,324	3.4%	7,307	10.7%	-7.275	-0.287

Table 1ac. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	14,939	21.8%	13,555	19.8%	2.031	0.050
Acquired Hypothyroidism ⁵	6,756	9.9%	6,858	10.0%	-0.144	-0.005
Acute Myocardial Infarction ⁵	502	0.7%	2,713	4.0%	-3.228	-0.214
Alzheimers Disease and Related Disorders ⁵	428	0.6%	417	0.6%	0.016	0.002
Anemia ⁵	5,259	7.7%	4,852	7.1%	0.598	0.023
Asthma ⁵	4,556	6.7%	3,518	5.1%	1.519	0.065
Atrial Fibrillation ⁵	768	1.1%	4,120	6.0%	-4.894	-0.266
Benign Prostatic Hyperplasia ⁵	1,602	2.3%	2,565	3.7%	-1.405	-0.082
Cataract ⁵	3,762	5.5%	4,256	6.2%	-0.719	-0.031
Chronic Kidney Disease ⁵	8,564	12.5%	4,674	6.8%	5.686	0.193
Bronchiectasis ⁵	2,464	3.6%	2,380	3.5%	0.124	0.007
Depression ⁵	9,905	14.5%	10,189	14.9%	-0.408	-0.012
Glaucoma ⁵	2,274	3.3%	2,618	3.8%	-0.501	-0.027
Hip or Pelvic Fracture ⁵	132	0.2%	122	0.2%	0.015	0.003
Hyperlipidemia ⁵	21,393	31.3%	21,751	31.8%	-0.509	-0.011
Hypertension ⁵	28,057	41.0%	22,746	33.2%	7.774	0.161
Osteoporosis ⁵	966	1.4%	1,258	1.8%	-0.426	-0.034
Rheumatoid Arthritis or Osteoarthritis ⁵	10,044	14.7%	9,853	14.4%	0.286	0.008
Stroke or Transient Ischemic Attack ⁵	1,566	2.3%	1,405	2.1%	0.236	0.016
Breast Cancer ⁵	1,094	1.6%	851	1.2%	0.356	0.030
Colorectal Cancer ⁵	340	0.5%	216	0.3%	0.181	0.029
Prostate Cancer ⁵	503	0.7%	601	0.9%	-0.143	-0.016
Lung Cancer ⁵	146	0.2%	133	0.2%	0.019	0.004
Endometrial Cancer ⁵	192	0.3%	77	0.1%	0.168	0.038
Urologic Cancer ⁵	171	0.2%	124	0.2%	0.069	0.015
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	10.0	12.7	10.3	11.3	-0.245	-0.020
Mean number of emergency room encounters	0.4	1.0	0.4	1.0	-0.017	-0.017
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.024	-0.058
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.001
Mean number of other ambulatory encounters	3.2	6.8	3.3	5.8	-0.095	-0.015

Table 1ac. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	12.9	16.3	13.0	16.1	-0.084	-0.005
Mean number of generics dispensed	4.9	4.6	4.9	4.5	0.001	0.000
Mean number of unique drug classes dispensed	4.5	4.1	4.5	4.0	0.006	0.001

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1ad. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	68,117	99.5%	68,117	99.5%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.4	49.8	14.5	-0.667	-0.050
Age						
18-44 years	24,906	36.6%	24,913	36.6%	-0.010	-0.000
45-64 years	38,699	56.8%	36,154	53.1%	3.736	0.075
≥ 65 years	4,512	6.6%	7,050	10.3%	-3.726	-0.134
Sex						
Female	35,841	52.6%	34,532	50.7%	1.922	0.038
Male	32,276	47.4%	33,585	49.3%	-1.922	-0.038
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	68,117	100.0%	68,117	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	68,117	100.0%	68,117	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	68,117	100.0%	68,117	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.5	1.5	0.6	1.4	-0.076	-0.052
Allergic Reaction	7,211	10.6%	7,977	11.7%	-1.125	-0.036
Diabetes	12,894	18.9%	5,563	8.2%	10.762	0.318
Heart Failure	1,026	1.5%	2,011	3.0%	-1.446	-0.098
Ischemic Heart Disease	2,317	3.4%	7,271	10.7%	-7.273	-0.287

Table 1ad. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	14,883	21.8%	13,463	19.8%	2.085	0.051
Acquired Hypothyroidism ⁵	6,729	9.9%	6,815	10.0%	-0.126	-0.004
Acute Myocardial Infarction ⁵	500	0.7%	2,694	4.0%	-3.221	-0.214
Alzheimers Disease and Related Disorders ⁵	428	0.6%	415	0.6%	0.019	0.002
Anemia ⁵	5,243	7.7%	4,823	7.1%	0.617	0.024
Asthma ⁵	4,548	6.7%	3,498	5.1%	1.541	0.065
Atrial Fibrillation ⁵	765	1.1%	4,102	6.0%	-4.899	-0.266
Benign Prostatic Hyperplasia ⁵	1,589	2.3%	2,558	3.8%	-1.423	-0.083
Cataract ⁵	3,735	5.5%	4,230	6.2%	-0.727	-0.031
Chronic Kidney Disease ⁵	8,533	12.5%	4,657	6.8%	5.690	0.193
Bronchiectasis ⁵	2,454	3.6%	2,367	3.5%	0.128	0.007
Depression ⁵	9,890	14.5%	10,094	14.8%	-0.299	-0.008
Glaucoma ⁵	2,260	3.3%	2,605	3.8%	-0.506	-0.027
Hip or Pelvic Fracture ⁵	132	0.2%	122	0.2%	0.015	0.003
Hyperlipidemia ⁵	21,274	31.2%	21,650	31.8%	-0.552	-0.012
Hypertension ⁵	27,907	41.0%	22,635	33.2%	7.740	0.161
Osteoporosis ⁵	963	1.4%	1,256	1.8%	-0.430	-0.034
Rheumatoid Arthritis or Osteoarthritis ⁵	10,001	14.7%	9,793	14.4%	0.305	0.009
Stroke or Transient Ischemic Attack ⁵	1,565	2.3%	1,396	2.0%	0.248	0.017
Breast Cancer ⁵	1,090	1.6%	846	1.2%	0.358	0.030
Colorectal Cancer ⁵	339	0.5%	214	0.3%	0.184	0.029
Prostate Cancer ⁵	501	0.7%	598	0.9%	-0.142	-0.016
Lung Cancer ⁵	145	0.2%	133	0.2%	0.018	0.004
Endometrial Cancer ⁵	192	0.3%	77	0.1%	0.169	0.038
Urologic Cancer ⁵	171	0.3%	123	0.2%	0.070	0.015
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	10.0	12.7	10.3	11.3	-0.210	-0.017
Mean number of emergency room encounters	0.4	1.0	0.4	1.0	-0.015	-0.015
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.023	-0.055
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.001
Mean number of other ambulatory encounters	3.2	6.8	3.3	5.7	-0.083	-0.013

Table 1ad. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	13.0	16.3	13.0	16.1	-0.045	-0.003
Mean number of generics dispensed	4.9	4.6	4.9	4.5	0.015	0.003
Mean number of unique drug classes dispensed	4.6	4.1	4.5	4.0	0.019	0.005

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1ae. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	18,409	100.0%	18,377	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	50.0	12.7	51.0	15.1	-1.030	-0.074
Age						
18-44 years	6,371	34.6%	6,457	35.1%	-0.528	-0.011
45-64 years	10,434	56.7%	9,350	50.9%	5.800	0.117
≥ 65 years	1,604	8.7%	2,570	14.0%	-5.272	-0.167
Sex						
Female	9,756	53.0%	9,194	50.0%	2.966	0.059
Male	8,653	47.0%	9,183	50.0%	-2.966	-0.059
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	18,409	100.0%	18,377	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	18,409	100.0%	18,377	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	18,409	100.0%	18,377	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.6	1.5	0.6	1.4	-0.081	-0.055
Allergic Reaction	2,075	11.3%	2,320	12.6%	-1.353	-0.042
Diabetes	3,468	18.8%	1,615	8.8%	10.050	0.294
Heart Failure	285	1.5%	562	3.1%	-1.510	-0.101
Ischemic Heart Disease	689	3.7%	2,055	11.2%	-7.440	-0.286

Table 1ae. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	4,076	22.1%	3,631	19.8%	2.383	0.059
Acquired Hypothyroidism ⁵	1,910	10.4%	1,891	10.3%	0.085	0.003
Acute Myocardial Infarction ⁵	138	0.7%	688	3.7%	-2.994	-0.203
Alzheimers Disease and Related Disorders ⁵	131	0.7%	150	0.8%	-0.105	-0.012
Anemia ⁵	1,521	8.3%	1,394	7.6%	0.677	0.025
Asthma ⁵	1,250	6.8%	926	5.0%	1.751	0.074
Atrial Fibrillation ⁵	188	1.0%	1,114	6.1%	-5.041	-0.275
Benign Prostatic Hyperplasia ⁵	486	2.6%	790	4.3%	-1.659	-0.091
Cataract ⁵	1,201	6.5%	1,406	7.7%	-1.127	-0.044
Chronic Kidney Disease ⁵	2,309	12.5%	1,363	7.4%	5.126	0.172
Bronchiectasis ⁵	744	4.0%	736	4.0%	0.036	0.002
Depression ⁵	2,531	13.7%	2,763	15.0%	-1.286	-0.037
Glaucoma ⁵	791	4.3%	794	4.3%	-0.024	-0.001
Hip or Pelvic Fracture ⁵	42	0.2%	35	0.2%	0.038	0.008
Hyperlipidemia ⁵	6,216	33.8%	6,289	34.2%	-0.456	-0.010
Hypertension ⁵	7,652	41.6%	6,359	34.6%	6.964	0.144
Osteoporosis ⁵	309	1.7%	399	2.2%	-0.493	-0.036
Rheumatoid Arthritis or Osteoarthritis ⁵	2,891	15.7%	2,888	15.7%	-0.011	-0.000
Stroke or Transient Ischemic Attack ⁵	424	2.3%	457	2.5%	-0.184	-0.012
Breast Cancer ⁵	308	1.7%	224	1.2%	0.454	0.038
Colorectal Cancer ⁵	104	0.6%	56	0.3%	0.260	0.040
Prostate Cancer ⁵	132	0.7%	193	1.1%	-0.333	-0.036
Lung Cancer ⁵	39	0.2%	37	0.2%	0.011	0.002
Endometrial Cancer ⁵	45	0.2%	16	0.1%	0.157	0.039
Urologic Cancer ⁵	47	0.3%	39	0.2%	0.043	0.009
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	10.5	12.2	10.9	11.8	-0.365	-0.030
Mean number of emergency room encounters	0.4	1.0	0.4	1.0	-0.025	-0.025
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.024	-0.057
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.004
Mean number of other ambulatory encounters	3.3	7.0	3.5	5.9	-0.176	-0.027

Table 1ae. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	13.1	15.7	13.4	15.8	-0.381	-0.024
Mean number of generics dispensed	5.2	4.5	5.3	4.5	-0.083	-0.018
Mean number of unique drug classes dispensed	4.8	4.1	4.8	4.0	-0.068	-0.017

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1af. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	17,980	97.7%	17,980	97.8%	N/A	N/A
Demographic Characteristics						
Age (years)	50.1	12.7	51.0	15.1	-0.882	-0.063
Age						
18-44 years	6,174	34.3%	6,344	35.3%	-0.945	-0.020
45-64 years	10,221	56.8%	9,143	50.9%	5.996	0.120
≥ 65 years	1,585	8.8%	2,493	13.9%	-5.050	-0.160
Sex						
Female	9,449	52.6%	9,041	50.3%	2.269	0.045
Male	8,531	47.4%	8,939	49.7%	-2.269	-0.045
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	17,980	100.0%	17,980	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	17,980	100.0%	17,980	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	17,980	100.0%	17,980	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.5	1.5	0.6	1.4	-0.087	-0.059
Allergic Reaction	2,018	11.2%	2,264	12.6%	-1.368	-0.042
Diabetes	3,366	18.7%	1,568	8.7%	10.000	0.294
Heart Failure	272	1.5%	549	3.1%	-1.541	-0.103
Ischemic Heart Disease	665	3.7%	2,010	11.2%	-7.481	-0.288

Table 1af. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	3,959	22.0%	3,567	19.8%	2.180	0.054
Acquired Hypothyroidism ⁵	1,849	10.3%	1,844	10.3%	0.028	0.001
Acute Myocardial Infarction ⁵	133	0.7%	673	3.7%	-3.003	-0.204
Alzheimers Disease and Related Disorders ⁵	129	0.7%	147	0.8%	-0.100	-0.011
Anemia ⁵	1,464	8.1%	1,354	7.5%	0.612	0.023
Asthma ⁵	1,209	6.7%	903	5.0%	1.702	0.072
Atrial Fibrillation ⁵	183	1.0%	1,091	6.1%	-5.050	-0.276
Benign Prostatic Hyperplasia ⁵	478	2.7%	758	4.2%	-1.557	-0.086
Cataract ⁵	1,169	6.5%	1,369	7.6%	-1.112	-0.043
Chronic Kidney Disease ⁵	2,235	12.4%	1,320	7.3%	5.089	0.171
Bronchiectasis ⁵	726	4.0%	718	4.0%	0.044	0.002
Depression ⁵	2,443	13.6%	2,709	15.1%	-1.479	-0.042
Glaucoma ⁵	775	4.3%	771	4.3%	0.022	0.001
Hip or Pelvic Fracture ⁵	41	0.2%	34	0.2%	0.039	0.009
Hyperlipidemia ⁵	6,089	33.9%	6,151	34.2%	-0.345	-0.007
Hypertension ⁵	7,470	41.5%	6,187	34.4%	7.136	0.147
Osteoporosis ⁵	301	1.7%	392	2.2%	-0.506	-0.037
Rheumatoid Arthritis or Osteoarthritis ⁵	2,815	15.7%	2,831	15.7%	-0.089	-0.002
Stroke or Transient Ischemic Attack ⁵	410	2.3%	445	2.5%	-0.195	-0.013
Breast Cancer ⁵	297	1.7%	218	1.2%	0.439	0.037
Colorectal Cancer ⁵	102	0.6%	54	0.3%	0.267	0.041
Prostate Cancer ⁵	130	0.7%	188	1.0%	-0.323	-0.034
Lung Cancer ⁵	38	0.2%	36	0.2%	0.011	0.002
Endometrial Cancer ⁵	45	0.3%	16	0.1%	0.161	0.039
Urologic Cancer ⁵	46	0.3%	39	0.2%	0.039	0.008
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	10.5	12.2	10.9	11.7	-0.406	-0.034
Mean number of emergency room encounters	0.4	1.0	0.4	1.0	-0.027	-0.027
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.023	-0.055
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.004
Mean number of other ambulatory encounters	3.3	7.1	3.5	5.8	-0.182	-0.028

Table 1af. Adjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.025) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	13.0	15.7	13.5	15.8	-0.466	-0.030
Mean number of generics dispensed	5.2	4.5	5.3	4.5	-0.108	-0.024
Mean number of unique drug classes dispensed	4.7	4.0	4.8	4.0	-0.093	-0.023

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1ag. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	195,763	100.0%	232,684	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.5	13.2	48.9	15.6	0.564	0.039
Age						
18-44 years	71,365	36.5%	93,528	40.2%	-3.740	-0.077
45-64 years	107,796	55.1%	111,900	48.1%	6.974	0.140
≥ 65 years	16,602	8.5%	27,257	11.7%	-3.233	-0.107
Sex						
Female	105,216	53.7%	125,311	53.9%	-0.108	-0.002
Male	90,547	46.3%	107,373	46.1%	0.108	0.002
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	195,763	100.0%	232,684	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	195,763	100.0%	232,684	100.0%	0.000	NaN
Year						
2020	42,568	21.7%	48,117	20.7%	1.066	0.026
2021	123,093	62.9%	146,937	63.1%	-0.270	-0.006
2022	30,102	15.4%	37,630	16.2%	-0.795	-0.022
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.7	1.8	0.7	1.6	0.005	0.003
Allergic Reaction	15,165	7.7%	17,775	7.6%	0.108	0.004
Diabetes	26,566	13.6%	25,950	11.2%	2.418	0.074
Heart Failure	5,695	2.9%	7,528	3.2%	-0.326	-0.019
Ischemic Heart Disease	13,593	6.9%	15,709	6.8%	0.193	0.008

Table 1ag. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	30,062	15.4%	34,890	15.0%	0.362	0.010
Acquired Hypothyroidism ⁶	16,667	8.5%	19,295	8.3%	0.221	0.008
Acute Myocardial Infarction ⁶	3,139	1.6%	6,103	2.6%	-1.019	-0.071
Alzheimers Disease and Related Disorders ⁶	1,740	0.9%	1,718	0.7%	0.150	0.017
Anemia ⁶	16,074	8.2%	17,895	7.7%	0.520	0.019
Asthma ⁶	12,124	6.2%	10,410	4.5%	1.719	0.077
Atrial Fibrillation ⁶	3,245	1.7%	12,971	5.6%	-3.917	-0.211
Benign Prostatic Hyperplasia ⁶	3,859	2.0%	6,171	2.7%	-0.681	-0.045
Cataract ⁶	7,572	3.9%	9,505	4.1%	-0.217	-0.011
Chronic Kidney Disease ⁶	21,044	10.7%	18,340	7.9%	2.868	0.099
Bronchiectasis ⁶	7,348	3.8%	7,070	3.0%	0.715	0.039
Depression ⁶	27,842	14.2%	33,855	14.5%	-0.327	-0.009
Glaucoma ⁶	5,136	2.6%	6,480	2.8%	-0.161	-0.010
Hip or Pelvic Fracture ⁶	440	0.2%	411	0.2%	0.048	0.011
Hyperlipidemia ⁶	50,910	26.0%	58,621	25.2%	0.813	0.019
Hypertension ⁶	76,626	39.1%	71,669	30.8%	8.342	0.176
Osteoporosis ⁶	2,611	1.3%	3,062	1.3%	0.018	0.002
Rheumatoid Arthritis or Osteoarthritis ⁶	23,648	12.1%	24,996	10.7%	1.338	0.042
Stroke or Transient Ischemic Attack ⁶	5,226	2.7%	4,794	2.1%	0.609	0.040
Breast Cancer ⁶	3,317	1.7%	2,599	1.1%	0.577	0.049
Colorectal Cancer ⁶	1,317	0.7%	743	0.3%	0.353	0.050
Prostate Cancer ⁶	1,471	0.8%	1,822	0.8%	-0.032	-0.004
Lung Cancer ⁶	743	0.4%	637	0.3%	0.106	0.019
Endometrial Cancer ⁶	553	0.3%	257	0.1%	0.172	0.039
Urologic Cancer ⁶	568	0.3%	446	0.2%	0.099	0.020
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	6.7	9.1	6.5	7.9	0.148	0.017
Mean number of emergency room encounters	0.3	0.9	0.3	0.9	0.004	0.005
Mean number of inpatient hospital encounters	0.1	0.5	0.2	0.5	-0.016	-0.034
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.004
Mean number of other ambulatory encounters	2.3	5.4	2.3	4.8	-0.002	-0.000

Table 1ag. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Patient Characteristics^{1,2}						
Mean number of filled prescriptions	7.8	9.8	7.5	9.1	0.329	0.035
Mean number of generics dispensed	4.0	4.0	3.8	3.7	0.144	0.037
Mean number of unique drug classes dispensed	3.7	3.7	3.6	3.4	0.131	0.037

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1ah. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	42,887	100.0%	47,812	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.0	12.1	45.9	15.8	5.077	0.361
Age						
18-44 years	12,877	30.0%	23,350	48.8%	-18.812	-0.392
45-64 years	26,542	61.9%	20,116	42.1%	19.815	0.405
≥ 65 years	3,468	8.1%	4,346	9.1%	-1.003	-0.036
Sex						
Female	18,826	43.9%	30,182	63.1%	-19.230	-0.393
Male	24,061	56.1%	17,630	36.9%	19.230	0.393
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	42,887	100.0%	47,812	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	42,887	100.0%	47,812	100.0%	0.000	NaN
Year						
2020	42,887	100.0%	47,812	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.2	1.2	0.9	1.9	-0.723	-0.462
Allergic Reaction	2,446	5.7%	3,965	8.3%	-2.590	-0.102
Diabetes	7,063	16.5%	3,844	8.0%	8.429	0.259
Heart Failure	419	1.0%	2,157	4.5%	-3.534	-0.218
Ischemic Heart Disease	1,112	2.6%	4,745	9.9%	-7.331	-0.306

Table 1ah. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	6,118	14.3%	7,357	15.4%	-1.122	-0.032
Acquired Hypothyroidism ⁵	2,948	6.9%	4,308	9.0%	-2.136	-0.079
Acute Myocardial Infarction ⁵	223	0.5%	1,905	4.0%	-3.464	-0.235
Alzheimers Disease and Related Disorders ⁵	175	0.4%	436	0.9%	-0.504	-0.062
Anemia ⁵	1,926	4.5%	4,775	10.0%	-5.496	-0.213
Asthma ⁵	1,651	3.8%	2,767	5.8%	-1.938	-0.091
Atrial Fibrillation ⁵	388	0.9%	2,719	5.7%	-4.782	-0.270
Benign Prostatic Hyperplasia ⁵	882	2.1%	1,028	2.2%	-0.094	-0.007
Cataract ⁵	1,657	3.9%	1,605	3.4%	0.507	0.027
Chronic Kidney Disease ⁵	3,808	8.9%	3,893	8.1%	0.737	0.026
Bronchiectasis ⁵	869	2.0%	1,744	3.6%	-1.621	-0.098
Depression ⁵	3,600	8.4%	8,710	18.2%	-9.823	-0.292
Glaucoma ⁵	1,067	2.5%	1,123	2.3%	0.139	0.009
Hip or Pelvic Fracture ⁵	57	0.1%	120	0.3%	-0.118	-0.027
Hyperlipidemia ⁵	10,671	24.9%	10,999	23.0%	1.877	0.044
Hypertension ⁵	15,713	36.6%	13,335	27.9%	8.748	0.188
Osteoporosis ⁵	415	1.0%	626	1.3%	-0.342	-0.032
Rheumatoid Arthritis or Osteoarthritis ⁵	4,165	9.7%	5,025	10.5%	-0.798	-0.026
Stroke or Transient Ischemic Attack ⁵	782	1.8%	1,153	2.4%	-0.588	-0.041
Breast Cancer ⁵	445	1.0%	688	1.4%	-0.401	-0.036
Colorectal Cancer ⁵	133	0.3%	210	0.4%	-0.129	-0.021
Prostate Cancer ⁵	275	0.6%	349	0.7%	-0.089	-0.011
Lung Cancer ⁵	73	0.2%	215	0.4%	-0.279	-0.050
Endometrial Cancer ⁵	60	0.1%	62	0.1%	0.010	0.003
Urologic Cancer ⁵	72	0.2%	114	0.2%	-0.071	-0.016
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	4.6	6.5	7.3	8.8	-2.675	-0.346
Mean number of emergency room encounters	0.2	0.6	0.4	1.0	-0.180	-0.219
Mean number of inpatient hospital encounters	0.1	0.3	0.2	0.6	-0.169	-0.366
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.001	-0.024
Mean number of other ambulatory encounters	1.5	3.3	2.7	5.7	-1.239	-0.267

Table 1ah. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.0	8.1	8.3	10.1	-2.324	-0.254
Mean number of generics dispensed	3.0	3.2	4.1	4.0	-1.081	-0.295
Mean number of unique drug classes dispensed	2.9	3.0	3.9	3.7	-1.037	-0.308

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1ai. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	42,885	100.0%	47,810	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.5	13.1	49.0	15.4	0.423	0.030
Age						
18-44 years	15,502	36.1%	18,818	39.4%	-3.210	-0.066
45-64 years	23,945	55.8%	23,624	49.4%	6.422	0.129
≥ 65 years	3,438	8.0%	5,368	11.2%	-3.212	-0.109
Sex						
Female	23,101	53.9%	25,629	53.6%	0.261	0.005
Male	19,784	46.1%	22,181	46.4%	-0.261	-0.005
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	42,885	100.0%	47,810	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	42,885	100.0%	47,810	100.0%	0.000	NaN
Year						
2020	42,885	100.0%	47,810	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.6	1.7	0.6	1.6	0.005	0.003
Allergic Reaction	3,184	7.4%	3,406	7.1%	0.299	0.012
Diabetes	5,808	13.5%	4,997	10.5%	3.091	0.095
Heart Failure	1,161	2.7%	1,463	3.1%	-0.351	-0.021
Ischemic Heart Disease	2,878	6.7%	3,248	6.8%	-0.081	-0.003

Table 1ai. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	6,549	15.3%	7,165	15.0%	0.284	0.008
Acquired Hypothyroidism ⁶	3,611	8.4%	3,988	8.3%	0.077	0.003
Acute Myocardial Infarction ⁶	649	1.5%	1,275	2.7%	-1.155	-0.081
Alzheimers Disease and Related Disorders ⁶	374	0.9%	322	0.7%	0.199	0.023
Anemia ⁶	3,388	7.9%	3,632	7.6%	0.304	0.011
Asthma ⁶	2,655	6.2%	2,115	4.4%	1.765	0.079
Atrial Fibrillation ⁶	727	1.7%	2,572	5.4%	-3.685	-0.200
Benign Prostatic Hyperplasia ⁶	843	2.0%	1,261	2.6%	-0.672	-0.045
Cataract ⁶	1,614	3.8%	1,876	3.9%	-0.160	-0.008
Chronic Kidney Disease ⁶	4,399	10.3%	3,675	7.7%	2.573	0.090
Bronchiectasis ⁶	1,508	3.5%	1,401	2.9%	0.586	0.033
Depression ⁶	5,974	13.9%	6,588	13.8%	0.149	0.004
Glaucoma ⁶	1,045	2.4%	1,291	2.7%	-0.265	-0.017
Hip or Pelvic Fracture ⁶	116	0.3%	99	0.2%	0.063	0.013
Hyperlipidemia ⁶	10,833	25.3%	11,807	24.7%	0.564	0.013
Hypertension ⁶	16,375	38.2%	14,675	30.7%	7.490	0.158
Osteoporosis ⁶	571	1.3%	603	1.3%	0.072	0.006
Rheumatoid Arthritis or Osteoarthritis ⁶	4,989	11.6%	4,981	10.4%	1.215	0.039
Stroke or Transient Ischemic Attack ⁶	1,154	2.7%	1,012	2.1%	0.574	0.037
Breast Cancer ⁶	722	1.7%	573	1.2%	0.487	0.041
Colorectal Cancer ⁶	254	0.6%	162	0.3%	0.254	0.037
Prostate Cancer ⁶	314	0.7%	404	0.8%	-0.112	-0.013
Lung Cancer ⁶	185	0.4%	143	0.3%	0.132	0.022
Endometrial Cancer ⁶	110	0.3%	52	0.1%	0.148	0.035
Urologic Cancer ⁶	117	0.3%	100	0.2%	0.065	0.013
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	6.3	8.9	6.2	7.7	0.177	0.021
Mean number of emergency room encounters	0.3	0.9	0.3	0.8	-0.011	-0.013
Mean number of inpatient hospital encounters	0.1	0.5	0.2	0.5	-0.017	-0.036
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.012
Mean number of other ambulatory encounters	2.2	4.9	2.2	4.8	0.002	0.001

Table 1ai. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Patient Characteristics^{1,2}						
Mean number of filled prescriptions	7.6	9.7	7.4	9.3	0.187	0.020
Mean number of generics dispensed	3.8	3.9	3.7	3.7	0.107	0.028
Mean number of unique drug classes dispensed	3.6	3.6	3.5	3.4	0.095	0.027

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1aj. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	122,695	100.0%	147,225	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.0	12.2	45.8	15.9	5.195	0.366
Age						
18-44 years	37,367	30.5%	73,094	49.6%	-19.193	-0.399
45-64 years	75,018	61.1%	60,284	40.9%	20.195	0.412
≥ 65 years	10,310	8.4%	13,847	9.4%	-1.002	-0.035
Sex						
Female	52,926	43.1%	92,746	63.0%	-19.860	-0.406
Male	69,769	56.9%	54,479	37.0%	19.860	0.406
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	122,695	100.0%	147,225	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	122,695	100.0%	147,225	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	122,695	100.0%	147,225	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.2	1.2	1.0	1.8	-0.739	-0.473
Allergic Reaction	7,368	6.0%	13,096	8.9%	-2.890	-0.110
Diabetes	20,632	16.8%	12,714	8.6%	8.180	0.247
Heart Failure	1,304	1.1%	6,954	4.7%	-3.661	-0.220
Ischemic Heart Disease	3,291	2.7%	14,146	9.6%	-6.926	-0.291

Table 1aj. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	17,704	14.4%	22,758	15.5%	-1.029	-0.029
Acquired Hypothyroidism ⁵	8,394	6.8%	13,059	8.9%	-2.029	-0.075
Acute Myocardial Infarction ⁵	666	0.5%	5,691	3.9%	-3.323	-0.228
Alzheimers Disease and Related Disorders ⁵	536	0.4%	1,423	1.0%	-0.530	-0.063
Anemia ⁵	5,712	4.7%	14,703	10.0%	-5.331	-0.206
Asthma ⁵	4,586	3.7%	8,578	5.8%	-2.089	-0.098
Atrial Fibrillation ⁵	1,098	0.9%	8,703	5.9%	-5.016	-0.279
Benign Prostatic Hyperplasia ⁵	2,574	2.1%	3,112	2.1%	-0.016	-0.001
Cataract ⁵	4,821	3.9%	5,081	3.5%	0.478	0.025
Chronic Kidney Disease ⁵	11,591	9.4%	12,180	8.3%	1.174	0.041
Bronchiectasis ⁵	2,668	2.2%	5,381	3.7%	-1.480	-0.088
Depression ⁵	10,657	8.7%	28,268	19.2%	-10.515	-0.307
Glaucoma ⁵	3,214	2.6%	3,624	2.5%	0.158	0.010
Hip or Pelvic Fracture ⁵	132	0.1%	321	0.2%	-0.110	-0.027
Hyperlipidemia ⁵	31,692	25.8%	34,224	23.2%	2.584	0.060
Hypertension ⁵	46,917	38.2%	41,099	27.9%	10.323	0.221
Osteoporosis ⁵	1,152	0.9%	1,966	1.3%	-0.396	-0.037
Rheumatoid Arthritis or Osteoarthritis ⁵	12,619	10.3%	15,657	10.6%	-0.350	-0.011
Stroke or Transient Ischemic Attack ⁵	2,089	1.7%	3,322	2.3%	-0.554	-0.040
Breast Cancer ⁵	1,228	1.0%	1,912	1.3%	-0.298	-0.028
Colorectal Cancer ⁵	427	0.3%	555	0.4%	-0.029	-0.005
Prostate Cancer ⁵	796	0.6%	1,005	0.7%	-0.034	-0.004
Lung Cancer ⁵	176	0.1%	540	0.4%	-0.223	-0.044
Endometrial Cancer ⁵	204	0.2%	217	0.1%	0.019	0.005
Urologic Cancer ⁵	195	0.2%	307	0.2%	-0.050	-0.012
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.0	6.7	7.7	9.0	-2.746	-0.346
Mean number of emergency room encounters	0.2	0.7	0.4	1.0	-0.177	-0.203
Mean number of inpatient hospital encounters	0.1	0.3	0.2	0.6	-0.167	-0.368
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.012
Mean number of other ambulatory encounters	1.6	3.6	2.9	5.8	-1.295	-0.269

Table 1aj. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	6.1	8.0	8.3	9.8	-2.181	-0.244
Mean number of generics dispensed	3.2	3.3	4.2	4.0	-1.046	-0.286
Mean number of unique drug classes dispensed	3.0	3.0	4.0	3.7	-1.008	-0.299

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1ak. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	122,686	100.0%	147,223	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.4	13.2	48.9	15.6	0.553	0.038
Age						
18-44 years	44,907	36.6%	59,360	40.3%	-3.717	-0.076
45-64 years	67,440	55.0%	70,658	48.0%	6.976	0.140
≥ 65 years	10,340	8.4%	17,206	11.7%	-3.259	-0.109
Sex						
Female	65,770	53.6%	79,394	53.9%	-0.319	-0.006
Male	56,916	46.4%	67,829	46.1%	0.319	0.006
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	122,686	100.0%	147,223	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	122,686	100.0%	147,223	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	122,686	100.0%	147,223	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.7	1.8	0.7	1.6	0.004	0.002
Allergic Reaction	9,587	7.8%	11,446	7.8%	0.040	0.001
Diabetes	16,756	13.7%	16,732	11.4%	2.292	0.069
Heart Failure	3,702	3.0%	4,861	3.3%	-0.284	-0.016
Ischemic Heart Disease	8,495	6.9%	9,950	6.8%	0.166	0.007

Table 1ak. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	18,900	15.4%	22,177	15.1%	0.342	0.010
Acquired Hypothyroidism ⁶	10,376	8.5%	12,256	8.3%	0.132	0.005
Acute Myocardial Infarction ⁶	2,009	1.6%	3,878	2.6%	-0.996	-0.069
Alzheimers Disease and Related Disorders ⁶	1,088	0.9%	1,112	0.8%	0.132	0.015
Anemia ⁶	10,148	8.3%	11,377	7.7%	0.544	0.020
Asthma ⁶	7,558	6.2%	6,622	4.5%	1.662	0.074
Atrial Fibrillation ⁶	2,084	1.7%	8,382	5.7%	-3.995	-0.213
Benign Prostatic Hyperplasia ⁶	2,359	1.9%	3,838	2.6%	-0.684	-0.046
Cataract ⁶	4,695	3.8%	6,022	4.1%	-0.263	-0.014
Chronic Kidney Disease ⁶	13,506	11.0%	11,725	8.0%	3.045	0.104
Bronchiectasis ⁶	4,652	3.8%	4,412	3.0%	0.795	0.044
Depression ⁶	17,557	14.3%	21,578	14.7%	-0.346	-0.010
Glaucoma ⁶	3,182	2.6%	4,105	2.8%	-0.195	-0.012
Hip or Pelvic Fracture ⁶	254	0.2%	250	0.2%	0.037	0.009
Hyperlipidemia ⁶	31,965	26.1%	37,210	25.3%	0.780	0.018
Hypertension ⁶	48,529	39.6%	45,647	31.0%	8.550	0.180
Osteoporosis ⁶	1,587	1.3%	1,954	1.3%	-0.034	-0.003
Rheumatoid Arthritis or Osteoarthritis ⁶	14,963	12.2%	15,833	10.8%	1.442	0.045
Stroke or Transient Ischemic Attack ⁶	3,283	2.7%	2,988	2.0%	0.646	0.043
Breast Cancer ⁶	2,023	1.6%	1,611	1.1%	0.555	0.048
Colorectal Cancer ⁶	844	0.7%	471	0.3%	0.368	0.052
Prostate Cancer ⁶	912	0.7%	1,134	0.8%	-0.027	-0.003
Lung Cancer ⁶	458	0.4%	385	0.3%	0.112	0.020
Endometrial Cancer ⁶	367	0.3%	179	0.1%	0.177	0.039
Urologic Cancer ⁶	361	0.3%	269	0.2%	0.112	0.023
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	6.8	9.3	6.6	8.0	0.144	0.017
Mean number of emergency room encounters	0.3	1.0	0.3	0.9	0.011	0.011
Mean number of inpatient hospital encounters	0.1	0.5	0.2	0.5	-0.017	-0.036
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.000
Mean number of other ambulatory encounters	2.3	5.6	2.3	4.9	0.003	0.001

Table 1ak. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Patient Characteristics^{1,2}						
Mean number of filled prescriptions	7.8	9.9	7.4	9.0	0.411	0.043
Mean number of generics dispensed	3.9	4.0	3.8	3.7	0.168	0.044
Mean number of unique drug classes dispensed	3.7	3.7	3.6	3.4	0.152	0.043

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1a. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	30,187	100.0%	37,648	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.3	12.4	45.9	16.1	5.465	0.381
Age						
18-44 years	8,992	29.8%	18,798	49.9%	-20.143	-0.420
45-64 years	18,379	60.9%	15,055	40.0%	20.895	0.427
≥ 65 years	2,816	9.3%	3,795	10.1%	-0.752	-0.025
Sex						
Female	13,036	43.2%	23,704	63.0%	-19.778	-0.404
Male	17,151	56.8%	13,944	37.0%	19.778	0.404
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	30,187	100.0%	37,648	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	30,187	100.0%	37,648	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	30,187	100.0%	37,648	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.2	1.2	0.9	1.8	-0.722	-0.467
Allergic Reaction	1,810	6.0%	3,313	8.8%	-2.804	-0.107
Diabetes	4,928	16.3%	3,202	8.5%	7.820	0.239
Heart Failure	290	1.0%	1,699	4.5%	-3.552	-0.219
Ischemic Heart Disease	834	2.8%	3,528	9.4%	-6.608	-0.280

Table 1a. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	4,281	14.2%	5,674	15.1%	-0.890	-0.025
Acquired Hypothyroidism ⁵	2,146	7.1%	3,258	8.7%	-1.545	-0.057
Acute Myocardial Infarction ⁵	160	0.5%	1,383	3.7%	-3.143	-0.220
Alzheimers Disease and Related Disorders ⁵	137	0.5%	353	0.9%	-0.484	-0.058
Anemia ⁵	1,414	4.7%	3,670	9.7%	-5.064	-0.197
Asthma ⁵	1,172	3.9%	2,140	5.7%	-1.802	-0.085
Atrial Fibrillation ⁵	245	0.8%	2,112	5.6%	-4.798	-0.275
Benign Prostatic Hyperplasia ⁵	675	2.2%	850	2.3%	-0.022	-0.001
Cataract ⁵	1,261	4.2%	1,361	3.6%	0.562	0.029
Chronic Kidney Disease ⁵	2,696	8.9%	3,034	8.1%	0.872	0.031
Bronchiectasis ⁵	725	2.4%	1,501	4.0%	-1.585	-0.090
Depression ⁵	2,595	8.6%	7,429	19.7%	-11.136	-0.324
Glaucoma ⁵	902	3.0%	960	2.5%	0.438	0.027
Hip or Pelvic Fracture ⁵	39	0.1%	82	0.2%	-0.089	-0.021
Hyperlipidemia ⁵	7,990	26.5%	8,801	23.4%	3.091	0.072
Hypertension ⁵	11,355	37.6%	10,189	27.1%	10.552	0.227
Osteoporosis ⁵	341	1.1%	513	1.4%	-0.233	-0.021
Rheumatoid Arthritis or Osteoarthritis ⁵	3,134	10.4%	4,094	10.9%	-0.492	-0.016
Stroke or Transient Ischemic Attack ⁵	493	1.6%	851	2.3%	-0.627	-0.045
Breast Cancer ⁵	333	1.1%	488	1.3%	-0.193	-0.018
Colorectal Cancer ⁵	114	0.4%	124	0.3%	0.048	0.008
Prostate Cancer ⁵	211	0.7%	254	0.7%	0.024	0.003
Lung Cancer ⁵	38	0.1%	145	0.4%	-0.259	-0.051
Endometrial Cancer ⁵	45	0.1%	30	0.1%	0.069	0.021
Urologic Cancer ⁵	49	0.2%	83	0.2%	-0.058	-0.013
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.0	6.5	7.7	8.8	-2.675	-0.348
Mean number of emergency room encounters	0.2	0.6	0.4	1.0	-0.181	-0.216
Mean number of inpatient hospital encounters	0.1	0.3	0.2	0.5	-0.155	-0.363
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.015
Mean number of other ambulatory encounters	1.6	3.6	2.9	5.5	-1.305	-0.282

Table 1a. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.3	7.8	8.5	9.7	-2.278	-0.259
Mean number of generics dispensed	3.4	3.3	4.5	4.1	-1.085	-0.291
Mean number of unique drug classes dispensed	3.2	3.1	4.2	3.7	-1.040	-0.304

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1am. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	30,185	100.0%	37,641	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.8	13.4	49.0	15.9	0.814	0.056
Age						
18-44 years	10,949	36.3%	15,334	40.7%	-4.467	-0.092
45-64 years	16,408	54.4%	17,633	46.8%	7.512	0.151
≥ 65 years	2,829	9.4%	4,673	12.4%	-3.045	-0.098
Sex						
Female	16,326	54.1%	20,284	53.9%	0.200	0.004
Male	13,859	45.9%	17,357	46.1%	-0.200	-0.004
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	30,185	100.0%	37,641	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	30,185	100.0%	37,641	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	30,185	100.0%	37,641	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.7	1.8	0.7	1.6	0.012	0.007
Allergic Reaction	2,404	8.0%	2,924	7.8%	0.198	0.007
Diabetes	3,993	13.2%	4,220	11.2%	2.016	0.062
Heart Failure	831	2.8%	1,204	3.2%	-0.443	-0.026
Ischemic Heart Disease	2,215	7.3%	2,507	6.7%	0.677	0.027

Table 1am. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	4,598	15.2%	5,545	14.7%	0.503	0.014
Acquired Hypothyroidism ⁶	2,671	8.8%	3,050	8.1%	0.747	0.027
Acute Myocardial Infarction ⁶	477	1.6%	946	2.5%	-0.933	-0.066
Alzheimers Disease and Related Disorders ⁶	274	0.9%	284	0.8%	0.154	0.017
Anemia ⁶	2,551	8.5%	2,883	7.7%	0.793	0.029
Asthma ⁶	1,916	6.3%	1,672	4.4%	1.904	0.084
Atrial Fibrillation ⁶	426	1.4%	2,015	5.4%	-3.943	-0.219
Benign Prostatic Hyperplasia ⁶	657	2.2%	1,067	2.8%	-0.658	-0.042
Cataract ⁶	1,256	4.2%	1,607	4.3%	-0.111	-0.006
Chronic Kidney Disease ⁶	3,147	10.4%	2,946	7.8%	2.600	0.090
Bronchiectasis ⁶	1,193	4.0%	1,256	3.3%	0.616	0.033
Depression ⁶	4,297	14.2%	5,685	15.1%	-0.869	-0.025
Glaucoma ⁶	912	3.0%	1,080	2.9%	0.150	0.009
Hip or Pelvic Fracture ⁶	68	0.2%	62	0.2%	0.058	0.013
Hyperlipidemia ⁶	8,100	26.8%	9,590	25.5%	1.357	0.031
Hypertension ⁶	11,717	38.8%	11,334	30.1%	8.708	0.184
Osteoporosis ⁶	448	1.5%	502	1.3%	0.149	0.013
Rheumatoid Arthritis or Osteoarthritis ⁶	3,698	12.3%	4,179	11.1%	1.148	0.036
Stroke or Transient Ischemic Attack ⁶	789	2.6%	791	2.1%	0.511	0.034
Breast Cancer ⁶	564	1.9%	416	1.1%	0.764	0.063
Colorectal Cancer ⁶	223	0.7%	109	0.3%	0.450	0.063
Prostate Cancer ⁶	244	0.8%	284	0.8%	0.052	0.006
Lung Cancer ⁶	99	0.3%	109	0.3%	0.040	0.007
Endometrial Cancer ⁶	73	0.2%	26	0.1%	0.173	0.044
Urologic Cancer ⁶	91	0.3%	76	0.2%	0.101	0.020
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	6.8	8.9	6.6	7.7	0.137	0.016
Mean number of emergency room encounters	0.3	0.8	0.3	0.9	-0.003	-0.004
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	-0.016	-0.037
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.001
Mean number of other ambulatory encounters	2.4	5.6	2.4	4.7	-0.015	-0.003

Table 1am. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Mean number of filled prescriptions	7.9	9.5	7.7	9.1	0.186	0.020
Mean number of generics dispensed	4.2	4.0	4.1	3.8	0.115	0.029
Mean number of unique drug classes dispensed	3.9	3.7	3.8	3.5	0.112	0.031

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1an. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	195,765	100.0%	232,683	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.5	13.2	48.9	15.6	0.565	0.039
Age						
18-44 years	71,374	36.5%	93,536	40.2%	-3.740	-0.077
45-64 years	107,790	55.1%	111,897	48.1%	6.971	0.140
≥ 65 years	16,602	8.5%	27,250	11.7%	-3.231	-0.107
Sex						
Female	105,276	53.8%	125,285	53.8%	-0.067	-0.001
Male	90,489	46.2%	107,398	46.2%	0.067	0.001
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	195,765	100.0%	232,683	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	195,765	100.0%	232,683	100.0%	0.000	NaN
Year						
2020	41,397	21.1%	49,169	21.1%	0.015	0.000
2021	123,412	63.0%	146,627	63.0%	0.025	0.001
2022	30,956	15.8%	36,887	15.9%	-0.040	-0.001
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.7	1.8	0.7	1.6	0.005	0.003
Allergic Reaction	15,187	7.8%	17,771	7.6%	0.120	0.005
Diabetes	26,563	13.6%	25,930	11.1%	2.425	0.074
Heart Failure	5,681	2.9%	7,529	3.2%	-0.334	-0.019
Ischemic Heart Disease	13,581	6.9%	15,715	6.8%	0.184	0.007

Table 1an. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	30,056	15.4%	34,878	15.0%	0.363	0.010
Acquired Hypothyroidism ⁶	16,634	8.5%	19,299	8.3%	0.202	0.007
Acute Myocardial Infarction ⁶	3,140	1.6%	6,105	2.6%	-1.020	-0.071
Alzheimers Disease and Related Disorders ⁶	1,740	0.9%	1,715	0.7%	0.152	0.017
Anemia ⁶	16,068	8.2%	17,899	7.7%	0.516	0.019
Asthma ⁶	12,107	6.2%	10,412	4.5%	1.709	0.076
Atrial Fibrillation ⁶	3,234	1.7%	12,977	5.6%	-3.925	-0.211
Benign Prostatic Hyperplasia ⁶	3,850	2.0%	6,174	2.7%	-0.687	-0.046
Cataract ⁶	7,570	3.9%	9,506	4.1%	-0.218	-0.011
Chronic Kidney Disease ⁶	21,053	10.8%	18,338	7.9%	2.873	0.099
Bronchiectasis ⁶	7,367	3.8%	7,066	3.0%	0.727	0.040
Depression ⁶	27,831	14.2%	33,838	14.5%	-0.326	-0.009
Glaucoma ⁶	5,138	2.6%	6,491	2.8%	-0.165	-0.010
Hip or Pelvic Fracture ⁶	444	0.2%	411	0.2%	0.050	0.011
Hyperlipidemia ⁶	50,868	26.0%	58,624	25.2%	0.789	0.018
Hypertension ⁶	76,617	39.1%	71,683	30.8%	8.330	0.175
Osteoporosis ⁶	2,621	1.3%	3,058	1.3%	0.024	0.002
Rheumatoid Arthritis or Osteoarthritis ⁶	23,633	12.1%	24,980	10.7%	1.336	0.042
Stroke or Transient Ischemic Attack ⁶	5,208	2.7%	4,795	2.1%	0.599	0.039
Breast Cancer ⁶	3,319	1.7%	2,596	1.1%	0.579	0.049
Colorectal Cancer ⁶	1,314	0.7%	742	0.3%	0.353	0.050
Prostate Cancer ⁶	1,470	0.8%	1,825	0.8%	-0.034	-0.004
Lung Cancer ⁶	743	0.4%	637	0.3%	0.106	0.019
Endometrial Cancer ⁶	549	0.3%	257	0.1%	0.170	0.039
Urologic Cancer ⁶	570	0.3%	448	0.2%	0.098	0.020
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	6.7	9.1	6.5	7.9	0.145	0.017
Mean number of emergency room encounters	0.3	0.9	0.3	0.9	0.004	0.005
Mean number of inpatient hospital encounters	0.1	0.5	0.2	0.5	-0.016	-0.034
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.004
Mean number of other ambulatory encounters	2.3	5.4	2.3	4.8	-0.003	-0.001

Table 1a. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Patient Characteristics^{1,2}						
Mean number of filled prescriptions	7.8	9.8	7.5	9.1	0.326	0.034
Mean number of generics dispensed	4.0	4.0	3.8	3.7	0.143	0.037
Mean number of unique drug classes dispensed	3.7	3.7	3.6	3.4	0.130	0.037

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1a0. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	42,887	100.0%	47,812	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.0	12.1	45.9	15.8	5.077	0.361
Age						
18-44 years	12,877	30.0%	23,350	48.8%	-18.812	-0.392
45-64 years	26,542	61.9%	20,116	42.1%	19.815	0.405
≥ 65 years	3,468	8.1%	4,346	9.1%	-1.003	-0.036
Sex						
Female	18,826	43.9%	30,182	63.1%	-19.230	-0.393
Male	24,061	56.1%	17,630	36.9%	19.230	0.393
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	42,887	100.0%	47,812	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	42,887	100.0%	47,812	100.0%	0.000	NaN
Year						
2020	42,887	100.0%	47,812	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.2	1.2	0.9	1.9	-0.723	-0.462
Allergic Reaction	2,446	5.7%	3,965	8.3%	-2.590	-0.102
Diabetes	7,063	16.5%	3,844	8.0%	8.429	0.259
Heart Failure	419	1.0%	2,157	4.5%	-3.534	-0.218
Ischemic Heart Disease	1,112	2.6%	4,745	9.9%	-7.331	-0.306

Table 1a0. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	6,118	14.3%	7,357	15.4%	-1.122	-0.032
Acquired Hypothyroidism ⁵	2,948	6.9%	4,308	9.0%	-2.136	-0.079
Acute Myocardial Infarction ⁵	223	0.5%	1,905	4.0%	-3.464	-0.235
Alzheimers Disease and Related Disorders ⁵	175	0.4%	436	0.9%	-0.504	-0.062
Anemia ⁵	1,926	4.5%	4,775	10.0%	-5.496	-0.213
Asthma ⁵	1,651	3.8%	2,767	5.8%	-1.938	-0.091
Atrial Fibrillation ⁵	388	0.9%	2,719	5.7%	-4.782	-0.270
Benign Prostatic Hyperplasia ⁵	882	2.1%	1,028	2.2%	-0.094	-0.007
Cataract ⁵	1,657	3.9%	1,605	3.4%	0.507	0.027
Chronic Kidney Disease ⁵	3,808	8.9%	3,893	8.1%	0.737	0.026
Bronchiectasis ⁵	869	2.0%	1,744	3.6%	-1.621	-0.098
Depression ⁵	3,600	8.4%	8,710	18.2%	-9.823	-0.292
Glaucoma ⁵	1,067	2.5%	1,123	2.3%	0.139	0.009
Hip or Pelvic Fracture ⁵	57	0.1%	120	0.3%	-0.118	-0.027
Hyperlipidemia ⁵	10,671	24.9%	10,999	23.0%	1.877	0.044
Hypertension ⁵	15,713	36.6%	13,335	27.9%	8.748	0.188
Osteoporosis ⁵	415	1.0%	626	1.3%	-0.342	-0.032
Rheumatoid Arthritis or Osteoarthritis ⁵	4,165	9.7%	5,025	10.5%	-0.798	-0.026
Stroke or Transient Ischemic Attack ⁵	782	1.8%	1,153	2.4%	-0.588	-0.041
Breast Cancer ⁵	445	1.0%	688	1.4%	-0.401	-0.036
Colorectal Cancer ⁵	133	0.3%	210	0.4%	-0.129	-0.021
Prostate Cancer ⁵	275	0.6%	349	0.7%	-0.089	-0.011
Lung Cancer ⁵	73	0.2%	215	0.4%	-0.279	-0.050
Endometrial Cancer ⁵	60	0.1%	62	0.1%	0.010	0.003
Urologic Cancer ⁵	72	0.2%	114	0.2%	-0.071	-0.016
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	4.6	6.5	7.3	8.8	-2.675	-0.346
Mean number of emergency room encounters	0.2	0.6	0.4	1.0	-0.180	-0.219
Mean number of inpatient hospital encounters	0.1	0.3	0.2	0.6	-0.169	-0.366
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.001	-0.024
Mean number of other ambulatory encounters	1.5	3.3	2.7	5.7	-1.239	-0.267

Table 1ao. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.0	8.1	8.3	10.1	-2.324	-0.254
Mean number of generics dispensed	3.0	3.2	4.1	4.0	-1.081	-0.295
Mean number of unique drug classes dispensed	2.9	3.0	3.9	3.7	-1.037	-0.308

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1ap. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	42,886	100.0%	47,810	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.5	13.1	49.0	15.4	0.416	0.029
Age						
18-44 years	15,505	36.2%	18,813	39.3%	-3.195	-0.066
45-64 years	23,944	55.8%	23,629	49.4%	6.409	0.129
≥ 65 years	3,437	8.0%	5,369	11.2%	-3.214	-0.109
Sex						
Female	23,109	53.9%	25,626	53.6%	0.286	0.006
Male	19,777	46.1%	22,184	46.4%	-0.286	-0.006
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	42,886	100.0%	47,810	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	42,886	100.0%	47,810	100.0%	0.000	NaN
Year						
2020	42,886	100.0%	47,810	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.6	1.7	0.6	1.6	0.006	0.003
Allergic Reaction	3,185	7.4%	3,406	7.1%	0.302	0.012
Diabetes	5,808	13.5%	4,997	10.5%	3.090	0.095
Heart Failure	1,161	2.7%	1,462	3.1%	-0.352	-0.021
Ischemic Heart Disease	2,880	6.7%	3,247	6.8%	-0.076	-0.003

Table 1ap. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	6,547	15.3%	7,166	15.0%	0.276	0.008
Acquired Hypothyroidism ⁶	3,610	8.4%	3,989	8.3%	0.075	0.003
Acute Myocardial Infarction ⁶	649	1.5%	1,275	2.7%	-1.154	-0.081
Alzheimers Disease and Related Disorders ⁶	374	0.9%	322	0.7%	0.200	0.023
Anemia ⁶	3,394	7.9%	3,633	7.6%	0.314	0.012
Asthma ⁶	2,651	6.2%	2,116	4.4%	1.754	0.078
Atrial Fibrillation ⁶	727	1.7%	2,573	5.4%	-3.686	-0.200
Benign Prostatic Hyperplasia ⁶	843	2.0%	1,261	2.6%	-0.671	-0.045
Cataract ⁶	1,613	3.8%	1,877	3.9%	-0.163	-0.008
Chronic Kidney Disease ⁶	4,399	10.3%	3,675	7.7%	2.570	0.090
Bronchiectasis ⁶	1,510	3.5%	1,401	2.9%	0.589	0.033
Depression ⁶	5,977	13.9%	6,588	13.8%	0.157	0.005
Glaucoma ⁶	1,044	2.4%	1,291	2.7%	-0.265	-0.017
Hip or Pelvic Fracture ⁶	116	0.3%	99	0.2%	0.063	0.013
Hyperlipidemia ⁶	10,828	25.2%	11,808	24.7%	0.551	0.013
Hypertension ⁶	16,370	38.2%	14,677	30.7%	7.472	0.158
Osteoporosis ⁶	571	1.3%	603	1.3%	0.070	0.006
Rheumatoid Arthritis or Osteoarthritis ⁶	4,989	11.6%	4,983	10.4%	1.212	0.039
Stroke or Transient Ischemic Attack ⁶	1,153	2.7%	1,012	2.1%	0.571	0.037
Breast Cancer ⁶	723	1.7%	573	1.2%	0.487	0.041
Colorectal Cancer ⁶	254	0.6%	162	0.3%	0.254	0.037
Prostate Cancer ⁶	314	0.7%	404	0.8%	-0.113	-0.013
Lung Cancer ⁶	185	0.4%	143	0.3%	0.132	0.022
Endometrial Cancer ⁶	110	0.3%	52	0.1%	0.148	0.035
Urologic Cancer ⁶	117	0.3%	100	0.2%	0.065	0.013
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	6.3	8.9	6.2	7.7	0.175	0.021
Mean number of emergency room encounters	0.3	0.9	0.3	0.8	-0.012	-0.013
Mean number of inpatient hospital encounters	0.1	0.5	0.2	0.5	-0.016	-0.033
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.012
Mean number of other ambulatory encounters	2.2	4.9	2.2	4.8	0.003	0.001

Table 1ap. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Patient Characteristics^{1,2}						
Mean number of filled prescriptions	7.6	9.7	7.4	9.3	0.187	0.020
Mean number of generics dispensed	3.8	3.9	3.7	3.7	0.105	0.028
Mean number of unique drug classes dispensed	3.6	3.6	3.5	3.4	0.093	0.026

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1a. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	122,695	100.0%	147,225	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.0	12.2	45.8	15.9	5.195	0.366
Age						
18-44 years	37,367	30.5%	73,094	49.6%	-19.193	-0.399
45-64 years	75,018	61.1%	60,284	40.9%	20.195	0.412
≥ 65 years	10,310	8.4%	13,847	9.4%	-1.002	-0.035
Sex						
Female	52,926	43.1%	92,746	63.0%	-19.860	-0.406
Male	69,769	56.9%	54,479	37.0%	19.860	0.406
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	122,695	100.0%	147,225	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	122,695	100.0%	147,225	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	122,695	100.0%	147,225	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.2	1.2	1.0	1.8	-0.739	-0.473
Allergic Reaction	7,368	6.0%	13,096	8.9%	-2.890	-0.110
Diabetes	20,632	16.8%	12,714	8.6%	8.180	0.247
Heart Failure	1,304	1.1%	6,954	4.7%	-3.661	-0.220
Ischemic Heart Disease	3,291	2.7%	14,146	9.6%	-6.926	-0.291

Table 1a. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	17,704	14.4%	22,758	15.5%	-1.029	-0.029
Acquired Hypothyroidism ⁵	8,394	6.8%	13,059	8.9%	-2.029	-0.075
Acute Myocardial Infarction ⁵	666	0.5%	5,691	3.9%	-3.323	-0.228
Alzheimers Disease and Related Disorders ⁵	536	0.4%	1,423	1.0%	-0.530	-0.063
Anemia ⁵	5,712	4.7%	14,703	10.0%	-5.331	-0.206
Asthma ⁵	4,586	3.7%	8,578	5.8%	-2.089	-0.098
Atrial Fibrillation ⁵	1,098	0.9%	8,703	5.9%	-5.016	-0.279
Benign Prostatic Hyperplasia ⁵	2,574	2.1%	3,112	2.1%	-0.016	-0.001
Cataract ⁵	4,821	3.9%	5,081	3.5%	0.478	0.025
Chronic Kidney Disease ⁵	11,591	9.4%	12,180	8.3%	1.174	0.041
Bronchiectasis ⁵	2,668	2.2%	5,381	3.7%	-1.480	-0.088
Depression ⁵	10,657	8.7%	28,268	19.2%	-10.515	-0.307
Glaucoma ⁵	3,214	2.6%	3,624	2.5%	0.158	0.010
Hip or Pelvic Fracture ⁵	132	0.1%	321	0.2%	-0.110	-0.027
Hyperlipidemia ⁵	31,692	25.8%	34,224	23.2%	2.584	0.060
Hypertension ⁵	46,917	38.2%	41,099	27.9%	10.323	0.221
Osteoporosis ⁵	1,152	0.9%	1,966	1.3%	-0.396	-0.037
Rheumatoid Arthritis or Osteoarthritis ⁵	12,619	10.3%	15,657	10.6%	-0.350	-0.011
Stroke or Transient Ischemic Attack ⁵	2,089	1.7%	3,322	2.3%	-0.554	-0.040
Breast Cancer ⁵	1,228	1.0%	1,912	1.3%	-0.298	-0.028
Colorectal Cancer ⁵	427	0.3%	555	0.4%	-0.029	-0.005
Prostate Cancer ⁵	796	0.6%	1,005	0.7%	-0.034	-0.004
Lung Cancer ⁵	176	0.1%	540	0.4%	-0.223	-0.044
Endometrial Cancer ⁵	204	0.2%	217	0.1%	0.019	0.005
Urologic Cancer ⁵	195	0.2%	307	0.2%	-0.050	-0.012
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.0	6.7	7.7	9.0	-2.746	-0.346
Mean number of emergency room encounters	0.2	0.7	0.4	1.0	-0.177	-0.203
Mean number of inpatient hospital encounters	0.1	0.3	0.2	0.6	-0.167	-0.368
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.012
Mean number of other ambulatory encounters	1.6	3.6	2.9	5.8	-1.295	-0.269

Table 1a. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.1	8.0	8.3	9.8	-2.181	-0.244
Mean number of generics dispensed	3.2	3.3	4.2	4.0	-1.046	-0.286
Mean number of unique drug classes dispensed	3.0	3.0	4.0	3.7	-1.008	-0.299

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1ar. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	122,686	100.0%	147,224	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.4	13.2	48.9	15.6	0.554	0.038
Age						
18-44 years	44,906	36.6%	59,362	40.3%	-3.719	-0.076
45-64 years	67,438	55.0%	70,656	48.0%	6.975	0.140
≥ 65 years	10,342	8.4%	17,205	11.7%	-3.257	-0.108
Sex						
Female	65,777	53.6%	79,396	53.9%	-0.315	-0.006
Male	56,909	46.4%	67,828	46.1%	0.315	0.006
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	122,686	100.0%	147,224	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	122,686	100.0%	147,224	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	122,686	100.0%	147,224	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.7	1.8	0.7	1.6	0.004	0.003
Allergic Reaction	9,582	7.8%	11,446	7.8%	0.035	0.001
Diabetes	16,757	13.7%	16,732	11.4%	2.293	0.069
Heart Failure	3,703	3.0%	4,862	3.3%	-0.284	-0.016
Ischemic Heart Disease	8,497	6.9%	9,951	6.8%	0.167	0.007

Table 1ar. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	18,898	15.4%	22,176	15.1%	0.340	0.009
Acquired Hypothyroidism ⁶	10,379	8.5%	12,258	8.3%	0.134	0.005
Acute Myocardial Infarction ⁶	2,010	1.6%	3,878	2.6%	-0.995	-0.069
Alzheimers Disease and Related Disorders ⁶	1,088	0.9%	1,112	0.8%	0.132	0.015
Anemia ⁶	10,148	8.3%	11,378	7.7%	0.543	0.020
Asthma ⁶	7,557	6.2%	6,623	4.5%	1.661	0.074
Atrial Fibrillation ⁶	2,084	1.7%	8,383	5.7%	-3.996	-0.213
Benign Prostatic Hyperplasia ⁶	2,360	1.9%	3,839	2.6%	-0.684	-0.046
Cataract ⁶	4,696	3.8%	6,022	4.1%	-0.263	-0.013
Chronic Kidney Disease ⁶	13,501	11.0%	11,726	8.0%	3.040	0.104
Bronchiectasis ⁶	4,656	3.8%	4,415	3.0%	0.796	0.044
Depression ⁶	17,555	14.3%	21,581	14.7%	-0.350	-0.010
Glaucoma ⁶	3,183	2.6%	4,107	2.8%	-0.195	-0.012
Hip or Pelvic Fracture ⁶	254	0.2%	250	0.2%	0.037	0.009
Hyperlipidemia ⁶	31,967	26.1%	37,214	25.3%	0.779	0.018
Hypertension ⁶	48,520	39.5%	45,649	31.0%	8.541	0.179
Osteoporosis ⁶	1,587	1.3%	1,956	1.3%	-0.035	-0.003
Rheumatoid Arthritis or Osteoarthritis ⁶	14,964	12.2%	15,836	10.8%	1.441	0.045
Stroke or Transient Ischemic Attack ⁶	3,284	2.7%	2,988	2.0%	0.647	0.043
Breast Cancer ⁶	2,023	1.6%	1,612	1.1%	0.554	0.048
Colorectal Cancer ⁶	844	0.7%	471	0.3%	0.368	0.052
Prostate Cancer ⁶	912	0.7%	1,133	0.8%	-0.026	-0.003
Lung Cancer ⁶	458	0.4%	385	0.3%	0.112	0.020
Endometrial Cancer ⁶	367	0.3%	179	0.1%	0.177	0.039
Urologic Cancer ⁶	361	0.3%	269	0.2%	0.111	0.023
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	6.8	9.3	6.6	8.0	0.139	0.016
Mean number of emergency room encounters	0.3	1.0	0.3	0.9	0.010	0.011
Mean number of inpatient hospital encounters	0.1	0.5	0.2	0.5	-0.017	-0.036
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.000
Mean number of other ambulatory encounters	2.3	5.6	2.3	4.9	0.002	0.000

Table 1ar. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Patient Characteristics^{1,2}						
Mean number of filled prescriptions	7.8	9.9	7.4	9.0	0.409	0.043
Mean number of generics dispensed	3.9	4.0	3.8	3.7	0.164	0.043
Mean number of unique drug classes dispensed	3.7	3.7	3.6	3.4	0.149	0.042

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1as. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	30,187	100.0%	37,648	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.3	12.4	45.9	16.1	5.465	0.381
Age						
18-44 years	8,992	29.8%	18,798	49.9%	-20.143	-0.420
45-64 years	18,379	60.9%	15,055	40.0%	20.895	0.427
≥ 65 years	2,816	9.3%	3,795	10.1%	-0.752	-0.025
Sex						
Female	13,036	43.2%	23,704	63.0%	-19.778	-0.404
Male	17,151	56.8%	13,944	37.0%	19.778	0.404
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	30,187	100.0%	37,648	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	30,187	100.0%	37,648	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	30,187	100.0%	37,648	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.2	1.2	0.9	1.8	-0.722	-0.467
Allergic Reaction	1,810	6.0%	3,313	8.8%	-2.804	-0.107
Diabetes	4,928	16.3%	3,202	8.5%	7.820	0.239
Heart Failure	290	1.0%	1,699	4.5%	-3.552	-0.219
Ischemic Heart Disease	834	2.8%	3,528	9.4%	-6.608	-0.280

Table 1as. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	4,281	14.2%	5,674	15.1%	-0.890	-0.025
Acquired Hypothyroidism ⁵	2,146	7.1%	3,258	8.7%	-1.545	-0.057
Acute Myocardial Infarction ⁵	160	0.5%	1,383	3.7%	-3.143	-0.220
Alzheimers Disease and Related Disorders ⁵	137	0.5%	353	0.9%	-0.484	-0.058
Anemia ⁵	1,414	4.7%	3,670	9.7%	-5.064	-0.197
Asthma ⁵	1,172	3.9%	2,140	5.7%	-1.802	-0.085
Atrial Fibrillation ⁵	245	0.8%	2,112	5.6%	-4.798	-0.275
Benign Prostatic Hyperplasia ⁵	675	2.2%	850	2.3%	-0.022	-0.001
Cataract ⁵	1,261	4.2%	1,361	3.6%	0.562	0.029
Chronic Kidney Disease ⁵	2,696	8.9%	3,034	8.1%	0.872	0.031
Bronchiectasis ⁵	725	2.4%	1,501	4.0%	-1.585	-0.090
Depression ⁵	2,595	8.6%	7,429	19.7%	-11.136	-0.324
Glaucoma ⁵	902	3.0%	960	2.5%	0.438	0.027
Hip or Pelvic Fracture ⁵	39	0.1%	82	0.2%	-0.089	-0.021
Hyperlipidemia ⁵	7,990	26.5%	8,801	23.4%	3.091	0.072
Hypertension ⁵	11,355	37.6%	10,189	27.1%	10.552	0.227
Osteoporosis ⁵	341	1.1%	513	1.4%	-0.233	-0.021
Rheumatoid Arthritis or Osteoarthritis ⁵	3,134	10.4%	4,094	10.9%	-0.492	-0.016
Stroke or Transient Ischemic Attack ⁵	493	1.6%	851	2.3%	-0.627	-0.045
Breast Cancer ⁵	333	1.1%	488	1.3%	-0.193	-0.018
Colorectal Cancer ⁵	114	0.4%	124	0.3%	0.048	0.008
Prostate Cancer ⁵	211	0.7%	254	0.7%	0.024	0.003
Lung Cancer ⁵	38	0.1%	145	0.4%	-0.259	-0.051
Endometrial Cancer ⁵	45	0.1%	30	0.1%	0.069	0.021
Urologic Cancer ⁵	49	0.2%	83	0.2%	-0.058	-0.013
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	5.0	6.5	7.7	8.8	-2.675	-0.348
Mean number of emergency room encounters	0.2	0.6	0.4	1.0	-0.181	-0.216
Mean number of inpatient hospital encounters	0.1	0.3	0.2	0.5	-0.155	-0.363
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.015
Mean number of other ambulatory encounters	1.6	3.6	2.9	5.5	-1.305	-0.282

Table 1as. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	6.3	7.8	8.5	9.7	-2.278	-0.259
Mean number of generics dispensed	3.4	3.3	4.5	4.1	-1.085	-0.291
Mean number of unique drug classes dispensed	3.2	3.1	4.2	3.7	-1.040	-0.304

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1at. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	30,186	100.0%	37,641	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.8	13.4	49.0	15.9	0.809	0.055
Age						
18-44 years	10,957	36.3%	15,333	40.7%	-4.438	-0.091
45-64 years	16,401	54.3%	17,632	46.8%	7.493	0.150
≥ 65 years	2,828	9.4%	4,676	12.4%	-3.055	-0.098
Sex						
Female	16,332	54.1%	20,282	53.9%	0.221	0.004
Male	13,854	45.9%	17,359	46.1%	-0.221	-0.004
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	30,186	100.0%	37,641	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	30,186	100.0%	37,641	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	30,186	100.0%	37,641	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.7	1.8	0.7	1.6	0.013	0.007
Allergic Reaction	2,407	8.0%	2,923	7.8%	0.208	0.008
Diabetes	3,995	13.2%	4,223	11.2%	2.014	0.062
Heart Failure	831	2.8%	1,204	3.2%	-0.445	-0.026
Ischemic Heart Disease	2,214	7.3%	2,508	6.7%	0.672	0.026

Table 1at. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	4,596	15.2%	5,541	14.7%	0.504	0.014
Acquired Hypothyroidism ⁶	2,671	8.8%	3,050	8.1%	0.746	0.027
Acute Myocardial Infarction ⁶	477	1.6%	946	2.5%	-0.934	-0.066
Alzheimers Disease and Related Disorders ⁶	274	0.9%	284	0.8%	0.154	0.017
Anemia ⁶	2,556	8.5%	2,883	7.7%	0.809	0.030
Asthma ⁶	1,914	6.3%	1,673	4.4%	1.897	0.084
Atrial Fibrillation ⁶	426	1.4%	2,016	5.4%	-3.946	-0.220
Benign Prostatic Hyperplasia ⁶	657	2.2%	1,069	2.8%	-0.662	-0.042
Cataract ⁶	1,255	4.2%	1,609	4.3%	-0.117	-0.006
Chronic Kidney Disease ⁶	3,149	10.4%	2,945	7.8%	2.606	0.091
Bronchiectasis ⁶	1,193	4.0%	1,257	3.3%	0.613	0.033
Depression ⁶	4,301	14.2%	5,684	15.1%	-0.855	-0.024
Glaucoma ⁶	911	3.0%	1,080	2.9%	0.147	0.009
Hip or Pelvic Fracture ⁶	68	0.2%	62	0.2%	0.059	0.013
Hyperlipidemia ⁶	8,097	26.8%	9,591	25.5%	1.343	0.031
Hypertension ⁶	11,719	38.8%	11,333	30.1%	8.713	0.184
Osteoporosis ⁶	447	1.5%	502	1.3%	0.149	0.013
Rheumatoid Arthritis or Osteoarthritis ⁶	3,697	12.2%	4,180	11.1%	1.141	0.036
Stroke or Transient Ischemic Attack ⁶	791	2.6%	791	2.1%	0.518	0.034
Breast Cancer ⁶	564	1.9%	416	1.1%	0.764	0.063
Colorectal Cancer ⁶	223	0.7%	110	0.3%	0.448	0.063
Prostate Cancer ⁶	244	0.8%	284	0.8%	0.052	0.006
Lung Cancer ⁶	99	0.3%	109	0.3%	0.040	0.007
Endometrial Cancer ⁶	73	0.2%	26	0.1%	0.173	0.044
Urologic Cancer ⁶	91	0.3%	76	0.2%	0.100	0.020
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	6.8	8.9	6.6	7.7	0.134	0.016
Mean number of emergency room encounters	0.3	0.8	0.3	0.9	-0.003	-0.003
Mean number of inpatient hospital encounters	0.1	0.5	0.1	0.4	-0.015	-0.033
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.001
Mean number of other ambulatory encounters	2.4	5.6	2.4	4.7	-0.013	-0.003

Table 1at. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Mean number of filled prescriptions	7.9	9.5	7.7	9.1	0.181	0.020
Mean number of generics dispensed	4.2	4.0	4.1	3.8	0.111	0.028
Mean number of unique drug classes dispensed	3.9	3.7	3.8	3.5	0.108	0.030

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1au. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	152,512	100.0%	183,102	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.9	48.5	15.5	0.599	0.042
Age						
18-44 years	56,459	37.0%	74,942	40.9%	-3.910	-0.080
45-64 years	85,039	55.8%	88,751	48.5%	7.288	0.146
≥ 65 years	11,014	7.2%	19,409	10.6%	-3.378	-0.119
Sex						
Female	82,390	54.0%	99,280	54.2%	-0.199	-0.004
Male	70,122	46.0%	83,822	45.8%	0.199	0.004
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	152,512	100.0%	183,102	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	152,512	100.0%	183,102	100.0%	0.000	NaN
Year						
2020	29,884	19.6%	34,221	18.7%	0.905	0.023
2021	97,176	63.7%	116,570	63.7%	0.053	0.001
2022	25,453	16.7%	32,311	17.6%	-0.957	-0.025
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.8	1.9	0.8	1.7	0.000	0.000
Allergic Reaction	17,492	11.5%	22,863	12.5%	-1.017	-0.031
Diabetes	31,402	20.6%	15,486	8.5%	12.132	0.350
Heart Failure	3,474	2.3%	6,691	3.7%	-1.376	-0.081
Ischemic Heart Disease	6,365	4.2%	19,499	10.6%	-6.476	-0.249

Table 1au. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	35,363	23.2%	38,337	20.9%	2.250	0.054
Acquired Hypothyroidism ⁶	16,270	10.7%	18,689	10.2%	0.461	0.015
Acute Myocardial Infarction ⁶	1,489	1.0%	7,122	3.9%	-2.913	-0.190
Alzheimers Disease and Related Disorders ⁶	1,317	0.9%	1,439	0.8%	0.077	0.009
Anemia ⁶	15,768	10.3%	17,247	9.4%	0.920	0.031
Asthma ⁶	12,328	8.1%	11,514	6.3%	1.795	0.070
Atrial Fibrillation ⁶	2,151	1.4%	10,949	6.0%	-4.569	-0.244
Benign Prostatic Hyperplasia ⁶	3,890	2.6%	6,873	3.8%	-1.203	-0.069
Cataract ⁶	9,000	5.9%	11,238	6.1%	-0.236	-0.010
Chronic Kidney Disease ⁶	22,673	14.9%	14,234	7.8%	7.093	0.225
Bronchiectasis ⁶	7,110	4.7%	7,477	4.1%	0.579	0.028
Depression ⁶	26,270	17.2%	33,664	18.4%	-1.161	-0.030
Glaucoma ⁶	5,599	3.7%	6,794	3.7%	-0.039	-0.002
Hip or Pelvic Fracture ⁶	437	0.3%	414	0.2%	0.061	0.012
Hyperlipidemia ⁶	49,221	32.3%	56,125	30.7%	1.621	0.035
Hypertension ⁶	64,491	42.3%	59,585	32.5%	9.744	0.202
Osteoporosis ⁶	2,500	1.6%	3,331	1.8%	-0.180	-0.014
Rheumatoid Arthritis or Osteoarthritis ⁶	24,101	15.8%	26,524	14.5%	1.317	0.037
Stroke or Transient Ischemic Attack ⁶	4,424	2.9%	4,369	2.4%	0.514	0.032
Breast Cancer ⁶	2,991	2.0%	2,493	1.4%	0.600	0.047
Colorectal Cancer ⁶	1,110	0.7%	701	0.4%	0.345	0.046
Prostate Cancer ⁶	1,167	0.8%	1,692	0.9%	-0.158	-0.017
Lung Cancer ⁶	548	0.4%	557	0.3%	0.055	0.010
Endometrial Cancer ⁶	529	0.3%	238	0.1%	0.217	0.044
Urologic Cancer ⁶	533	0.3%	405	0.2%	0.129	0.024
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	11.7	15.0	11.7	13.5	-0.027	-0.002
Mean number of emergency room encounters	0.5	1.2	0.5	1.2	-0.011	-0.009
Mean number of inpatient hospital encounters	0.2	0.5	0.2	0.6	-0.022	-0.040
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.006
Mean number of other ambulatory encounters	3.8	8.4	3.9	7.7	-0.110	-0.014

Table 1au. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Mean number of filled prescriptions	14.5	18.0	14.2	17.2	0.268	0.015
Mean number of generics dispensed	5.5	5.1	5.4	4.9	0.071	0.014
Mean number of unique drug classes dispensed	5.1	4.5	5.0	4.4	0.063	0.014

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1av. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	30,026	100.0%	33,990	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	50.7	11.6	45.2	15.2	5.569	0.412
Age						
18-44 years	8,885	29.6%	16,869	49.6%	-20.038	-0.419
45-64 years	19,288	64.2%	14,827	43.6%	20.616	0.423
≥ 65 years	1,853	6.2%	2,294	6.7%	-0.578	-0.024
Sex						
Female	13,300	44.3%	21,660	63.7%	-19.430	-0.397
Male	16,726	55.7%	12,330	36.3%	19.430	0.397
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	30,026	100.0%	33,990	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	30,026	100.0%	33,990	100.0%	0.000	NaN
Year						
2020	30,026	100.0%	33,990	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.3	1.3	1.1	1.9	-0.758	-0.461
Allergic Reaction	2,801	9.3%	4,400	12.9%	-3.616	-0.115
Diabetes	5,240	17.5%	2,679	7.9%	9.570	0.291
Heart Failure	278	0.9%	1,454	4.3%	-3.352	-0.212
Ischemic Heart Disease	894	3.0%	3,461	10.2%	-7.205	-0.294

Table 1av. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	6,293	21.0%	7,864	23.1%	-2.178	-0.053
Acquired Hypothyroidism ⁵	2,665	8.9%	3,726	11.0%	-2.086	-0.070
Acute Myocardial Infarction ⁵	161	0.5%	1,385	4.1%	-3.539	-0.237
Alzheimers Disease and Related Disorders ⁵	102	0.3%	264	0.8%	-0.437	-0.059
Anemia ⁵	1,792	6.0%	3,977	11.7%	-5.732	-0.203
Asthma ⁵	1,708	5.7%	2,662	7.8%	-2.143	-0.085
Atrial Fibrillation ⁵	257	0.9%	1,898	5.6%	-4.728	-0.270
Benign Prostatic Hyperplasia ⁵	842	2.8%	922	2.7%	0.092	0.006
Cataract ⁵	1,774	5.9%	1,672	4.9%	0.989	0.044
Chronic Kidney Disease ⁵	3,003	10.0%	2,808	8.3%	1.740	0.060
Bronchiectasis ⁵	988	3.3%	1,665	4.9%	-1.608	-0.081
Depression ⁵	3,299	11.0%	7,720	22.7%	-11.725	-0.317
Glaucoma ⁵	1,133	3.8%	1,026	3.0%	0.755	0.042
Hip or Pelvic Fracture ⁵	46	0.2%	84	0.2%	-0.094	-0.021
Hyperlipidemia ⁵	9,333	31.1%	9,146	26.9%	4.175	0.092
Hypertension ⁵	12,313	41.0%	9,904	29.1%	11.870	0.251
Osteoporosis ⁵	400	1.3%	575	1.7%	-0.359	-0.029
Rheumatoid Arthritis or Osteoarthritis ⁵	4,087	13.6%	4,688	13.8%	-0.181	-0.005
Stroke or Transient Ischemic Attack ⁵	608	2.0%	883	2.6%	-0.573	-0.038
Breast Cancer ⁵	388	1.3%	586	1.7%	-0.432	-0.035
Colorectal Cancer ⁵	114	0.4%	153	0.5%	-0.070	-0.011
Prostate Cancer ⁵	207	0.7%	236	0.7%	-0.005	-0.001
Lung Cancer ⁵	47	0.2%	139	0.4%	-0.252	-0.048
Endometrial Cancer ⁵	55	0.2%	59	0.2%	0.010	0.002
Urologic Cancer ⁵	65	0.2%	86	0.3%	-0.037	-0.008
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	8.5	10.6	13.0	14.7	-4.507	-0.351
Mean number of emergency room encounters	0.3	0.8	0.6	1.3	-0.260	-0.237
Mean number of inpatient hospital encounters	0.1	0.4	0.3	0.7	-0.188	-0.345
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.001	-0.029
Mean number of other ambulatory encounters	2.3	4.8	4.0	7.8	-1.676	-0.259

Table 1av. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	11.8	15.5	16.0	18.9	-4.175	-0.242
Mean number of generics dispensed	4.4	4.3	6.1	5.4	-1.634	-0.334
Mean number of unique drug classes dispensed	4.1	3.9	5.6	4.8	-1.508	-0.347

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1aw. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	30,023	100.0%	33,988	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	48.9	12.4	48.3	14.9	0.676	0.049
Age						
18-44 years	10,854	36.2%	13,679	40.2%	-4.094	-0.084
45-64 years	17,497	58.3%	17,358	51.1%	7.208	0.145
≥ 65 years	1,672	5.6%	2,951	8.7%	-3.113	-0.121
Sex						
Female	16,296	54.3%	18,465	54.3%	-0.048	-0.001
Male	13,727	45.7%	15,523	45.7%	0.048	0.001
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	30,023	100.0%	33,988	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	30,023	100.0%	33,988	100.0%	0.000	NaN
Year						
2020	30,023	100.0%	33,988	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.8	1.8	0.8	1.7	0.022	0.013
Allergic Reaction	3,300	11.0%	3,980	11.7%	-0.719	-0.023
Diabetes	6,113	20.4%	2,607	7.7%	12.691	0.372
Heart Failure	601	2.0%	1,118	3.3%	-1.288	-0.080
Ischemic Heart Disease	1,206	4.0%	3,578	10.5%	-6.510	-0.253

Table 1aw. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardize d Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	7,104	23.7%	7,320	21.5%	2.123	0.051
Acquired Hypothyroidism ⁶	3,148	10.5%	3,483	10.2%	0.238	0.008
Acute Myocardial Infarction ⁶	271	0.9%	1,307	3.8%	-2.940	-0.194
Alzheimers Disease and Related Disorders ⁶	218	0.7%	198	0.6%	0.141	0.018
Anemia ⁶	2,993	10.0%	3,042	9.0%	1.018	0.035
Asthma ⁶	2,538	8.5%	2,117	6.2%	2.225	0.085
Atrial Fibrillation ⁶	365	1.2%	1,907	5.6%	-4.394	-0.244
Benign Prostatic Hyperplasia ⁶	723	2.4%	1,222	3.6%	-1.187	-0.070
Cataract ⁶	1,760	5.9%	1,965	5.8%	0.080	0.003
Chronic Kidney Disease ⁶	4,205	14.0%	2,414	7.1%	6.905	0.226
Bronchiectasis ⁶	1,432	4.8%	1,445	4.3%	0.517	0.025
Depression ⁶	4,959	16.5%	6,044	17.8%	-1.265	-0.034
Glaucoma ⁶	1,131	3.8%	1,156	3.4%	0.368	0.020
Hip or Pelvic Fracture ⁶	79	0.3%	71	0.2%	0.056	0.012
Hyperlipidemia ⁶	9,338	31.1%	10,111	29.7%	1.352	0.029
Hypertension ⁶	12,347	41.1%	11,030	32.5%	8.674	0.181
Osteoporosis ⁶	485	1.6%	582	1.7%	-0.095	-0.007
Rheumatoid Arthritis or Osteoarthritis ⁶	4,531	15.1%	4,739	13.9%	1.149	0.033
Stroke or Transient Ischemic Attack ⁶	868	2.9%	790	2.3%	0.567	0.036
Breast Cancer ⁶	592	2.0%	508	1.5%	0.475	0.036
Colorectal Cancer ⁶	196	0.7%	130	0.4%	0.271	0.038
Prostate Cancer ⁶	199	0.7%	303	0.9%	-0.230	-0.026
Lung Cancer ⁶	115	0.4%	98	0.3%	0.093	0.016
Endometrial Cancer ⁶	91	0.3%	49	0.1%	0.157	0.033
Urologic Cancer ⁶	98	0.3%	79	0.2%	0.092	0.018
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	11.1	13.8	11.2	13.0	-0.105	-0.008
Mean number of emergency room encounters	0.4	1.1	0.5	1.1	-0.029	-0.026
Mean number of inpatient hospital encounters	0.2	0.5	0.2	0.6	-0.020	-0.037
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.012
Mean number of other ambulatory encounters	3.2	6.8	3.3	6.6	-0.053	-0.008

Table 1aw. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Mean number of filled prescriptions	14.5	18.1	14.3	17.5	0.146	0.008
Mean number of generics dispensed	5.4	5.1	5.4	5.0	0.005	0.001
Mean number of unique drug classes dispensed	5.0	4.5	5.0	4.4	0.004	0.001

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1ax. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	97,032	100.0%	116,972	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	50.8	12.1	45.3	15.6	5.570	0.399
Age						
18-44 years	29,703	30.6%	59,242	50.6%	-20.035	-0.417
45-64 years	59,823	61.7%	48,108	41.1%	20.525	0.420
≥ 65 years	7,506	7.7%	9,622	8.2%	-0.490	-0.018
Sex						
Female	41,950	43.2%	74,217	63.4%	-20.215	-0.414
Male	55,082	56.8%	42,755	36.6%	20.215	0.414
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	97,032	100.0%	116,972	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	97,032	100.0%	116,972	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	97,032	100.0%	116,972	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.3	1.4	1.1	2.0	-0.808	-0.478
Allergic Reaction	9,307	9.6%	15,932	13.6%	-4.029	-0.126
Diabetes	17,052	17.6%	10,067	8.6%	8.967	0.268
Heart Failure	1,097	1.1%	5,516	4.7%	-3.585	-0.214
Ischemic Heart Disease	3,059	3.2%	11,856	10.1%	-6.983	-0.283

Table 1ax. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	19,654	20.3%	26,161	22.4%	-2.110	-0.052
Acquired Hypothyroidism ⁵	8,506	8.8%	12,581	10.8%	-1.989	-0.067
Acute Myocardial Infarction ⁵	598	0.6%	4,801	4.1%	-3.488	-0.231
Alzheimers Disease and Related Disorders ⁵	475	0.5%	1,180	1.0%	-0.519	-0.060
Anemia ⁵	5,887	6.1%	13,984	12.0%	-5.888	-0.207
Asthma ⁵	5,107	5.3%	9,264	7.9%	-2.657	-0.107
Atrial Fibrillation ⁵	940	1.0%	7,039	6.0%	-5.049	-0.278
Benign Prostatic Hyperplasia ⁵	2,888	3.0%	3,297	2.8%	0.158	0.009
Cataract ⁵	5,694	5.9%	5,929	5.1%	0.799	0.035
Chronic Kidney Disease ⁵	10,380	10.7%	10,432	8.9%	1.779	0.060
Bronchiectasis ⁵	2,936	3.0%	5,260	4.5%	-1.471	-0.077
Depression ⁵	11,094	11.4%	27,441	23.5%	-12.026	-0.321
Glaucoma ⁵	3,360	3.5%	3,822	3.3%	0.195	0.011
Hip or Pelvic Fracture ⁵	153	0.2%	332	0.3%	-0.126	-0.027
Hyperlipidemia ⁵	30,805	31.7%	31,916	27.3%	4.462	0.098
Hypertension ⁵	40,958	42.2%	34,040	29.1%	13.110	0.276
Osteoporosis ⁵	1,267	1.3%	2,051	1.8%	-0.448	-0.036
Rheumatoid Arthritis or Osteoarthritis ⁵	13,508	13.9%	16,461	14.1%	-0.151	-0.004
Stroke or Transient Ischemic Attack ⁵	1,898	2.0%	2,987	2.6%	-0.598	-0.040
Breast Cancer ⁵	1,231	1.3%	1,808	1.5%	-0.277	-0.024
Colorectal Cancer ⁵	409	0.4%	522	0.4%	-0.025	-0.004
Prostate Cancer ⁵	758	0.8%	893	0.8%	0.018	0.002
Lung Cancer ⁵	160	0.2%	472	0.4%	-0.239	-0.045
Endometrial Cancer ⁵	203	0.2%	192	0.2%	0.045	0.010
Urologic Cancer ⁵	198	0.2%	282	0.2%	-0.037	-0.008
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	8.8	11.4	13.4	15.4	-4.594	-0.339
Mean number of emergency room encounters	0.3	0.9	0.6	1.4	-0.252	-0.214
Mean number of inpatient hospital encounters	0.1	0.3	0.3	0.7	-0.192	-0.360
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.015
Mean number of other ambulatory encounters	2.8	6.0	4.8	9.3	-2.072	-0.266

Table 1ax. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	11.6	15.2	15.6	18.3	-3.952	-0.235
Mean number of generics dispensed	4.4	4.3	6.0	5.3	-1.539	-0.321
Mean number of unique drug classes dispensed	4.1	3.8	5.5	4.7	-1.429	-0.335

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1ay. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	97,030	100.0%	116,937	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	48.9	12.9	48.3	15.4	0.595	0.042
Age						
18-44 years	36,450	37.6%	48,246	41.3%	-3.693	-0.076
45-64 years	53,661	55.3%	56,602	48.4%	6.899	0.138
≥ 65 years	6,919	7.1%	12,089	10.3%	-3.207	-0.114
Sex						
Female	52,186	53.8%	63,285	54.1%	-0.335	-0.007
Male	44,844	46.2%	53,652	45.9%	0.335	0.007
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	97,030	100.0%	116,937	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	97,030	100.0%	116,937	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	97,030	100.0%	116,937	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.8	1.9	0.8	1.7	-0.003	-0.002
Allergic Reaction	11,094	11.4%	14,561	12.5%	-1.018	-0.031
Diabetes	20,006	20.6%	9,926	8.5%	12.130	0.349
Heart Failure	2,257	2.3%	4,288	3.7%	-1.342	-0.079
Ischemic Heart Disease	3,985	4.1%	12,358	10.6%	-6.462	-0.250

Table 1ay. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	22,236	22.9%	24,352	20.8%	2.093	0.051
Acquired Hypothyroidism ⁶	10,237	10.6%	11,853	10.1%	0.414	0.014
Acute Myocardial Infarction ⁶	952	1.0%	4,583	3.9%	-2.938	-0.191
Alzheimers Disease and Related Disorders ⁶	845	0.9%	932	0.8%	0.074	0.008
Anemia ⁶	9,928	10.2%	10,959	9.4%	0.860	0.029
Asthma ⁶	7,670	7.9%	7,387	6.3%	1.588	0.062
Atrial Fibrillation ⁶	1,445	1.5%	7,064	6.0%	-4.551	-0.241
Benign Prostatic Hyperplasia ⁶	2,445	2.5%	4,301	3.7%	-1.158	-0.067
Cataract ⁶	5,519	5.7%	6,958	6.0%	-0.262	-0.011
Chronic Kidney Disease ⁶	14,633	15.1%	9,097	7.8%	7.301	0.231
Bronchiectasis ⁶	4,354	4.5%	4,602	3.9%	0.552	0.027
Depression ⁶	16,925	17.4%	21,537	18.4%	-0.975	-0.025
Glaucoma ⁶	3,302	3.4%	4,302	3.7%	-0.276	-0.015
Hip or Pelvic Fracture ⁶	270	0.3%	262	0.2%	0.055	0.011
Hyperlipidemia ⁶	31,049	32.0%	35,538	30.4%	1.609	0.035
Hypertension ⁶	41,119	42.4%	37,861	32.4%	10.000	0.208
Osteoporosis ⁶	1,537	1.6%	2,074	1.8%	-0.190	-0.015
Rheumatoid Arthritis or Osteoarthritis ⁶	15,300	15.8%	16,747	14.3%	1.446	0.040
Stroke or Transient Ischemic Attack ⁶	2,800	2.9%	2,694	2.3%	0.581	0.037
Breast Cancer ⁶	1,868	1.9%	1,548	1.3%	0.601	0.048
Colorectal Cancer ⁶	708	0.7%	456	0.4%	0.339	0.046
Prostate Cancer ⁶	761	0.8%	1,057	0.9%	-0.120	-0.013
Lung Cancer ⁶	341	0.4%	350	0.3%	0.052	0.009
Endometrial Cancer ⁶	352	0.4%	156	0.1%	0.230	0.046
Urologic Cancer ⁶	344	0.4%	248	0.2%	0.142	0.027
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	11.7	15.4	11.6	13.5	0.036	0.002
Mean number of emergency room encounters	0.5	1.2	0.5	1.2	-0.004	-0.003
Mean number of inpatient hospital encounters	0.2	0.5	0.2	0.5	-0.022	-0.040
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.006
Mean number of other ambulatory encounters	3.9	8.7	4.0	7.8	-0.093	-0.011

Table 1ay. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Mean number of filled prescriptions	14.4	18.0	14.0	17.1	0.393	0.022
Mean number of generics dispensed	5.4	5.1	5.3	4.9	0.108	0.022
Mean number of unique drug classes dispensed	5.0	4.5	4.9	4.3	0.094	0.021

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1az. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	25,455	100.0%	32,142	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.7	12.5	46.2	16.4	5.515	0.378
Age						
18-44 years	7,389	29.0%	15,858	49.3%	-20.310	-0.425
45-64 years	15,442	60.7%	12,756	39.7%	20.978	0.429
≥ 65 years	2,624	10.3%	3,528	11.0%	-0.668	-0.022
Sex						
Female	11,168	43.9%	20,319	63.2%	-19.343	-0.395
Male	14,287	56.1%	11,823	36.8%	19.343	0.395
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	25,455	100.0%	32,142	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	25,455	100.0%	32,142	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	25,455	100.0%	32,142	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	1.2	2.0	-0.819	-0.474
Allergic Reaction	2,622	10.3%	4,656	14.5%	-4.185	-0.127
Diabetes	4,520	17.8%	2,975	9.3%	8.501	0.251
Heart Failure	305	1.2%	1,613	5.0%	-3.820	-0.221
Ischemic Heart Disease	874	3.4%	3,406	10.6%	-7.163	-0.283

Table 1az. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	5,260	20.7%	7,148	22.2%	-1.575	-0.038
Acquired Hypothyroidism ⁵	2,414	9.5%	3,538	11.0%	-1.524	-0.050
Acute Myocardial Infarction ⁵	156	0.6%	1,299	4.0%	-3.429	-0.229
Alzheimers Disease and Related Disorders ⁵	144	0.6%	367	1.1%	-0.576	-0.063
Anemia ⁵	1,686	6.6%	4,037	12.6%	-5.936	-0.203
Asthma ⁵	1,409	5.5%	2,494	7.8%	-2.224	-0.089
Atrial Fibrillation ⁵	236	0.9%	1,970	6.1%	-5.202	-0.285
Benign Prostatic Hyperplasia ⁵	823	3.2%	1,042	3.2%	-0.009	-0.000
Cataract ⁵	1,771	7.0%	1,996	6.2%	0.747	0.030
Chronic Kidney Disease ⁵	2,740	10.8%	3,047	9.5%	1.284	0.043
Bronchiectasis ⁵	870	3.4%	1,616	5.0%	-1.610	-0.080
Depression ⁵	2,825	11.1%	7,628	23.7%	-12.634	-0.338
Glaucoma ⁵	1,121	4.4%	1,210	3.8%	0.639	0.032
Hip or Pelvic Fracture ⁵	48	0.2%	97	0.3%	-0.113	-0.023
Hyperlipidemia ⁵	8,718	34.2%	9,495	29.5%	4.708	0.101
Hypertension ⁵	10,949	43.0%	9,640	30.0%	13.021	0.273
Osteoporosis ⁵	419	1.6%	665	2.1%	-0.423	-0.031
Rheumatoid Arthritis or Osteoarthritis ⁵	3,800	14.9%	4,935	15.4%	-0.425	-0.012
Stroke or Transient Ischemic Attack ⁵	517	2.0%	939	2.9%	-0.890	-0.057
Breast Cancer ⁵	354	1.4%	505	1.6%	-0.180	-0.015
Colorectal Cancer ⁵	123	0.5%	132	0.4%	0.073	0.011
Prostate Cancer ⁵	209	0.8%	284	0.9%	-0.063	-0.007
Lung Cancer ⁵	41	0.2%	138	0.4%	-0.268	-0.049
Endometrial Cancer ⁵	48	0.2%	40	0.1%	0.064	0.016
Urologic Cancer ⁵	53	0.2%	82	0.3%	-0.047	-0.010
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	9.4	11.2	14.0	15.4	-4.651	-0.345
Mean number of emergency room encounters	0.3	0.9	0.6	1.4	-0.258	-0.224
Mean number of inpatient hospital encounters	0.1	0.4	0.3	0.6	-0.181	-0.346
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.012
Mean number of other ambulatory encounters	2.9	6.2	5.1	9.5	-2.192	-0.274

Table 1az. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Patient Characteristics¹						
Mean number of filled prescriptions	11.9	14.8	16.1	18.3	-4.193	-0.252
Mean number of generics dispensed	4.8	4.3	6.3	5.3	-1.580	-0.327
Mean number of unique drug classes dispensed	4.3	3.8	5.8	4.7	-1.469	-0.343

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1ba. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	25,454	100.0%	32,140	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.9	13.3	49.3	16.2	0.598	0.040
Age						
18-44 years	9,126	35.9%	12,998	40.4%	-4.586	-0.095
45-64 years	13,905	54.6%	14,784	46.0%	8.631	0.173
≥ 65 years	2,422	9.5%	4,358	13.6%	-4.045	-0.127
Sex						
Female	13,887	54.6%	17,520	54.5%	0.048	0.001
Male	11,567	45.4%	14,620	45.5%	-0.048	-0.001
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	25,454	100.0%	32,140	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	25,454	100.0%	32,140	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	25,454	100.0%	32,140	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.9	1.9	0.9	1.8	-0.003	-0.002
Allergic Reaction	3,100	12.2%	4,318	13.4%	-1.257	-0.038
Diabetes	5,285	20.8%	2,948	9.2%	11.588	0.329
Heart Failure	619	2.4%	1,279	4.0%	-1.549	-0.088
Ischemic Heart Disease	1,179	4.6%	3,548	11.0%	-6.408	-0.240

Table 1ba. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	5,994	23.5%	6,655	20.7%	2.843	0.069
Acquired Hypothyroidism ⁶	2,882	11.3%	3,347	10.4%	0.908	0.029
Acute Myocardial Infarction ⁶	276	1.1%	1,231	3.8%	-2.748	-0.178
Alzheimers Disease and Related Disorders ⁶	254	1.0%	307	1.0%	0.042	0.004
Anemia ⁶	2,830	11.1%	3,229	10.0%	1.073	0.035
Asthma ⁶	2,110	8.3%	2,003	6.2%	2.059	0.079
Atrial Fibrillation ⁶	341	1.3%	1,968	6.1%	-4.787	-0.255
Benign Prostatic Hyperplasia ⁶	723	2.8%	1,349	4.2%	-1.354	-0.074
Cataract ⁶	1,722	6.8%	2,310	7.2%	-0.422	-0.017
Chronic Kidney Disease ⁶	3,835	15.1%	2,710	8.4%	6.635	0.207
Bronchiectasis ⁶	1,326	5.2%	1,428	4.4%	0.764	0.036
Depression ⁶	4,352	17.1%	6,064	18.9%	-1.772	-0.046
Glaucoma ⁶	1,171	4.6%	1,334	4.2%	0.449	0.022
Hip or Pelvic Fracture ⁶	88	0.3%	79	0.2%	0.099	0.018
Hyperlipidemia ⁶	8,836	34.7%	10,461	32.5%	2.166	0.046
Hypertension ⁶	11,016	43.3%	10,668	33.2%	10.085	0.209
Osteoporosis ⁶	481	1.9%	671	2.1%	-0.200	-0.014
Rheumatoid Arthritis or Osteoarthritis ⁶	4,264	16.8%	5,018	15.6%	1.138	0.031
Stroke or Transient Ischemic Attack ⁶	764	3.0%	880	2.7%	0.263	0.016
Breast Cancer ⁶	532	2.1%	435	1.4%	0.735	0.057
Colorectal Cancer ⁶	208	0.8%	116	0.4%	0.456	0.060
Prostate Cancer ⁶	209	0.8%	330	1.0%	-0.205	-0.021
Lung Cancer ⁶	92	0.4%	109	0.3%	0.022	0.004
Endometrial Cancer ⁶	87	0.3%	33	0.1%	0.239	0.051
Urologic Cancer ⁶	92	0.4%	76	0.2%	0.125	0.023
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	12.2	14.6	12.3	13.7	-0.084	-0.006
Mean number of emergency room encounters	0.5	1.2	0.5	1.2	-0.012	-0.010
Mean number of inpatient hospital encounters	0.2	0.5	0.2	0.5	-0.021	-0.038
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.003
Mean number of other ambulatory encounters	4.1	9.2	4.2	8.2	-0.167	-0.019

Table 1ba. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Patient Characteristics^{1,2}						
Mean number of filled prescriptions	14.7	17.5	14.7	17.2	-0.031	-0.002
Mean number of generics dispensed	5.8	5.1	5.8	5.0	0.031	0.006
Mean number of unique drug classes dispensed	5.3	4.5	5.3	4.4	0.027	0.006

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1bb. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
Patient Characteristics ^{1,2}	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	152,512	100.0%	183,103	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.1	12.9	48.5	15.5	0.599	0.042
Age						
18-44 years	56,472	37.0%	74,939	40.9%	-3.899	-0.080
45-64 years	85,022	55.7%	88,781	48.5%	7.261	0.146
≥ 65 years	11,017	7.2%	19,383	10.6%	-3.362	-0.118
Sex						
Female	82,383	54.0%	99,283	54.2%	-0.205	-0.004
Male	70,129	46.0%	83,820	45.8%	0.205	0.004
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	152,512	100.0%	183,103	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	152,512	100.0%	183,103	100.0%	0.000	NaN
Year						
2020	29,119	19.1%	34,923	19.1%	0.020	0.001
2021	97,126	63.7%	116,624	63.7%	-0.009	-0.000
2022	26,267	17.2%	31,556	17.2%	-0.011	-0.000
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.8	1.9	0.8	1.7	-0.000	-0.000
Allergic Reaction	17,492	11.5%	22,866	12.5%	-1.019	-0.031
Diabetes	31,397	20.6%	15,473	8.5%	12.136	0.350
Heart Failure	3,469	2.3%	6,685	3.7%	-1.376	-0.081
Ischemic Heart Disease	6,352	4.2%	19,505	10.7%	-6.488	-0.250

Table 1bb. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	35,331	23.2%	38,362	21.0%	2.215	0.053
Acquired Hypothyroidism ⁶	16,267	10.7%	18,684	10.2%	0.462	0.015
Acute Myocardial Infarction ⁶	1,485	1.0%	7,126	3.9%	-2.918	-0.190
Alzheimers Disease and Related Disorders ⁶	1,316	0.9%	1,437	0.8%	0.079	0.009
Anemia ⁶	15,760	10.3%	17,243	9.4%	0.916	0.031
Asthma ⁶	12,292	8.1%	11,514	6.3%	1.772	0.069
Atrial Fibrillation ⁶	2,145	1.4%	10,939	6.0%	-4.568	-0.244
Benign Prostatic Hyperplasia ⁶	3,889	2.6%	6,874	3.8%	-1.204	-0.069
Cataract ⁶	9,005	5.9%	11,240	6.1%	-0.235	-0.010
Chronic Kidney Disease ⁶	22,653	14.9%	14,227	7.8%	7.083	0.225
Bronchiectasis ⁶	7,105	4.7%	7,480	4.1%	0.573	0.028
Depression ⁶	26,235	17.2%	33,676	18.4%	-1.190	-0.031
Glaucoma ⁶	5,603	3.7%	6,793	3.7%	-0.036	-0.002
Hip or Pelvic Fracture ⁶	435	0.3%	413	0.2%	0.059	0.012
Hyperlipidemia ⁶	49,249	32.3%	56,105	30.6%	1.651	0.036
Hypertension ⁶	64,511	42.3%	59,581	32.5%	9.759	0.203
Osteoporosis ⁶	2,501	1.6%	3,329	1.8%	-0.178	-0.014
Rheumatoid Arthritis or Osteoarthritis ⁶	24,105	15.8%	26,526	14.5%	1.318	0.037
Stroke or Transient Ischemic Attack ⁶	4,424	2.9%	4,366	2.4%	0.516	0.032
Breast Cancer ⁶	2,995	2.0%	2,493	1.4%	0.602	0.047
Colorectal Cancer ⁶	1,110	0.7%	700	0.4%	0.345	0.046
Prostate Cancer ⁶	1,166	0.8%	1,689	0.9%	-0.158	-0.017
Lung Cancer ⁶	549	0.4%	558	0.3%	0.055	0.010
Endometrial Cancer ⁶	531	0.3%	238	0.1%	0.218	0.045
Urologic Cancer ⁶	534	0.4%	404	0.2%	0.129	0.024
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	11.7	15.0	11.7	13.5	-0.027	-0.002
Mean number of emergency room encounters	0.5	1.2	0.5	1.2	-0.011	-0.009
Mean number of inpatient hospital encounters	0.2	0.5	0.2	0.6	-0.022	-0.040
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.005
Mean number of other ambulatory encounters	3.8	8.4	3.9	7.7	-0.109	-0.013

Table 1bb. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Mean number of filled prescriptions	14.5	18.0	14.2	17.2	0.268	0.015
Mean number of generics dispensed	5.5	5.1	5.4	4.9	0.071	0.014
Mean number of unique drug classes dispensed	5.1	4.5	5.0	4.4	0.062	0.014

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1bc. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	30,026	100.0%	33,990	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	50.7	11.6	45.2	15.2	5.569	0.412
Age						
18-44 years	8,885	29.6%	16,869	49.6%	-20.038	-0.419
45-64 years	19,288	64.2%	14,827	43.6%	20.616	0.423
≥ 65 years	1,853	6.2%	2,294	6.7%	-0.578	-0.024
Sex						
Female	13,300	44.3%	21,660	63.7%	-19.430	-0.397
Male	16,726	55.7%	12,330	36.3%	19.430	0.397
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	30,026	100.0%	33,990	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	30,026	100.0%	33,990	100.0%	0.000	NaN
Year						
2020	30,026	100.0%	33,990	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.3	1.3	1.1	1.9	-0.758	-0.461
Allergic Reaction	2,801	9.3%	4,400	12.9%	-3.616	-0.115
Diabetes	5,240	17.5%	2,679	7.9%	9.570	0.291
Heart Failure	278	0.9%	1,454	4.3%	-3.352	-0.212
Ischemic Heart Disease	894	3.0%	3,461	10.2%	-7.205	-0.294

Table 1bc. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	6,293	21.0%	7,864	23.1%	-2.178	-0.053
Acquired Hypothyroidism ⁵	2,665	8.9%	3,726	11.0%	-2.086	-0.070
Acute Myocardial Infarction ⁵	161	0.5%	1,385	4.1%	-3.539	-0.237
Alzheimers Disease and Related Disorders ⁵	102	0.3%	264	0.8%	-0.437	-0.059
Anemia ⁵	1,792	6.0%	3,977	11.7%	-5.732	-0.203
Asthma ⁵	1,708	5.7%	2,662	7.8%	-2.143	-0.085
Atrial Fibrillation ⁵	257	0.9%	1,898	5.6%	-4.728	-0.270
Benign Prostatic Hyperplasia ⁵	842	2.8%	922	2.7%	0.092	0.006
Cataract ⁵	1,774	5.9%	1,672	4.9%	0.989	0.044
Chronic Kidney Disease ⁵	3,003	10.0%	2,808	8.3%	1.740	0.060
Bronchiectasis ⁵	988	3.3%	1,665	4.9%	-1.608	-0.081
Depression ⁵	3,299	11.0%	7,720	22.7%	-11.725	-0.317
Glaucoma ⁵	1,133	3.8%	1,026	3.0%	0.755	0.042
Hip or Pelvic Fracture ⁵	46	0.2%	84	0.2%	-0.094	-0.021
Hyperlipidemia ⁵	9,333	31.1%	9,146	26.9%	4.175	0.092
Hypertension ⁵	12,313	41.0%	9,904	29.1%	11.870	0.251
Osteoporosis ⁵	400	1.3%	575	1.7%	-0.359	-0.029
Rheumatoid Arthritis or Osteoarthritis ⁵	4,087	13.6%	4,688	13.8%	-0.181	-0.005
Stroke or Transient Ischemic Attack ⁵	608	2.0%	883	2.6%	-0.573	-0.038
Breast Cancer ⁵	388	1.3%	586	1.7%	-0.432	-0.035
Colorectal Cancer ⁵	114	0.4%	153	0.5%	-0.070	-0.011
Prostate Cancer ⁵	207	0.7%	236	0.7%	-0.005	-0.001
Lung Cancer ⁵	47	0.2%	139	0.4%	-0.252	-0.048
Endometrial Cancer ⁵	55	0.2%	59	0.2%	0.010	0.002
Urologic Cancer ⁵	65	0.2%	86	0.3%	-0.037	-0.008
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	8.5	10.6	13.0	14.7	-4.507	-0.351
Mean number of emergency room encounters	0.3	0.8	0.6	1.3	-0.260	-0.237
Mean number of inpatient hospital encounters	0.1	0.4	0.3	0.7	-0.188	-0.345
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.001	-0.029
Mean number of other ambulatory encounters	2.3	4.8	4.0	7.8	-1.676	-0.259

Table 1bc. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	11.8	15.5	16.0	18.9	-4.175	-0.242
Mean number of generics dispensed	4.4	4.3	6.1	5.4	-1.634	-0.334
Mean number of unique drug classes dispensed	4.1	3.9	5.6	4.8	-1.508	-0.347

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1bd. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	30,023	100.0%	33,989	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	48.9	12.4	48.3	14.9	0.668	0.049
Age						
18-44 years	10,859	36.2%	13,675	40.2%	-4.065	-0.084
45-64 years	17,495	58.3%	17,361	51.1%	7.194	0.145
≥ 65 years	1,669	5.6%	2,953	8.7%	-3.129	-0.122
Sex						
Female	16,300	54.3%	18,467	54.3%	-0.043	-0.001
Male	13,723	45.7%	15,522	45.7%	0.043	0.001
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	30,023	100.0%	33,989	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	30,023	100.0%	33,989	100.0%	0.000	NaN
Year						
2020	30,023	100.0%	33,989	100.0%	0.000	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.8	1.8	0.8	1.7	0.021	0.012
Allergic Reaction	3,297	11.0%	3,982	11.7%	-0.733	-0.023
Diabetes	6,110	20.4%	2,607	7.7%	12.682	0.372
Heart Failure	599	2.0%	1,118	3.3%	-1.296	-0.081
Ischemic Heart Disease	1,202	4.0%	3,579	10.5%	-6.526	-0.253

Table 1bd. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	7,101	23.7%	7,322	21.5%	2.109	0.050
Acquired Hypothyroidism ⁶	3,146	10.5%	3,482	10.2%	0.235	0.008
Acute Myocardial Infarction ⁶	268	0.9%	1,306	3.8%	-2.951	-0.195
Alzheimers Disease and Related Disorders ⁶	217	0.7%	198	0.6%	0.141	0.017
Anemia ⁶	2,991	10.0%	3,044	9.0%	1.008	0.034
Asthma ⁶	2,538	8.5%	2,118	6.2%	2.223	0.085
Atrial Fibrillation ⁶	364	1.2%	1,908	5.6%	-4.402	-0.244
Benign Prostatic Hyperplasia ⁶	722	2.4%	1,222	3.6%	-1.190	-0.070
Cataract ⁶	1,758	5.9%	1,966	5.8%	0.070	0.003
Chronic Kidney Disease ⁶	4,200	14.0%	2,415	7.1%	6.883	0.225
Bronchiectasis ⁶	1,432	4.8%	1,446	4.3%	0.513	0.025
Depression ⁶	4,957	16.5%	6,045	17.8%	-1.275	-0.034
Glaucoma ⁶	1,129	3.8%	1,156	3.4%	0.358	0.019
Hip or Pelvic Fracture ⁶	79	0.3%	71	0.2%	0.056	0.012
Hyperlipidemia ⁶	9,331	31.1%	10,115	29.8%	1.321	0.029
Hypertension ⁶	12,341	41.1%	11,031	32.5%	8.653	0.180
Osteoporosis ⁶	485	1.6%	582	1.7%	-0.099	-0.008
Rheumatoid Arthritis or Osteoarthritis ⁶	4,529	15.1%	4,741	13.9%	1.136	0.032
Stroke or Transient Ischemic Attack ⁶	868	2.9%	790	2.3%	0.565	0.035
Breast Cancer ⁶	591	2.0%	508	1.5%	0.475	0.036
Colorectal Cancer ⁶	196	0.7%	130	0.4%	0.270	0.038
Prostate Cancer ⁶	197	0.7%	303	0.9%	-0.237	-0.027
Lung Cancer ⁶	115	0.4%	98	0.3%	0.093	0.016
Endometrial Cancer ⁶	91	0.3%	49	0.1%	0.157	0.033
Urologic Cancer ⁶	98	0.3%	80	0.2%	0.091	0.017
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	11.1	13.8	11.2	13.0	-0.119	-0.009
Mean number of emergency room encounters	0.4	1.1	0.5	1.1	-0.029	-0.026
Mean number of inpatient hospital encounters	0.2	0.5	0.2	0.6	-0.020	-0.037
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.011
Mean number of other ambulatory encounters	3.2	6.7	3.3	6.6	-0.062	-0.009

Table 1bd. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Patient Characteristics^{1,2}						
Mean number of filled prescriptions	14.5	18.1	14.3	17.5	0.148	0.008
Mean number of generics dispensed	5.4	5.1	5.4	5.0	0.002	0.000
Mean number of unique drug classes dispensed	5.0	4.5	5.0	4.4	0.001	0.000

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1be. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	97,032	100.0%	116,972	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	50.8	12.1	45.3	15.6	5.570	0.399
Age						
18-44 years	29,703	30.6%	59,242	50.6%	-20.035	-0.417
45-64 years	59,823	61.7%	48,108	41.1%	20.525	0.420
≥ 65 years	7,506	7.7%	9,622	8.2%	-0.490	-0.018
Sex						
Female	41,950	43.2%	74,217	63.4%	-20.215	-0.414
Male	55,082	56.8%	42,755	36.6%	20.215	0.414
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	97,032	100.0%	116,972	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	97,032	100.0%	116,972	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	97,032	100.0%	116,972	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.3	1.4	1.1	2.0	-0.808	-0.478
Allergic Reaction	9,307	9.6%	15,932	13.6%	-4.029	-0.126
Diabetes	17,052	17.6%	10,067	8.6%	8.967	0.268
Heart Failure	1,097	1.1%	5,516	4.7%	-3.585	-0.214
Ischemic Heart Disease	3,059	3.2%	11,856	10.1%	-6.983	-0.283

Table 1be. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	19,654	20.3%	26,161	22.4%	-2.110	-0.052
Acquired Hypothyroidism ⁵	8,506	8.8%	12,581	10.8%	-1.989	-0.067
Acute Myocardial Infarction ⁵	598	0.6%	4,801	4.1%	-3.488	-0.231
Alzheimers Disease and Related Disorders ⁵	475	0.5%	1,180	1.0%	-0.519	-0.060
Anemia ⁵	5,887	6.1%	13,984	12.0%	-5.888	-0.207
Asthma ⁵	5,107	5.3%	9,264	7.9%	-2.657	-0.107
Atrial Fibrillation ⁵	940	1.0%	7,039	6.0%	-5.049	-0.278
Benign Prostatic Hyperplasia ⁵	2,888	3.0%	3,297	2.8%	0.158	0.009
Cataract ⁵	5,694	5.9%	5,929	5.1%	0.799	0.035
Chronic Kidney Disease ⁵	10,380	10.7%	10,432	8.9%	1.779	0.060
Bronchiectasis ⁵	2,936	3.0%	5,260	4.5%	-1.471	-0.077
Depression ⁵	11,094	11.4%	27,441	23.5%	-12.026	-0.321
Glaucoma ⁵	3,360	3.5%	3,822	3.3%	0.195	0.011
Hip or Pelvic Fracture ⁵	153	0.2%	332	0.3%	-0.126	-0.027
Hyperlipidemia ⁵	30,805	31.7%	31,916	27.3%	4.462	0.098
Hypertension ⁵	40,958	42.2%	34,040	29.1%	13.110	0.276
Osteoporosis ⁵	1,267	1.3%	2,051	1.8%	-0.448	-0.036
Rheumatoid Arthritis or Osteoarthritis ⁵	13,508	13.9%	16,461	14.1%	-0.151	-0.004
Stroke or Transient Ischemic Attack ⁵	1,898	2.0%	2,987	2.6%	-0.598	-0.040
Breast Cancer ⁵	1,231	1.3%	1,808	1.5%	-0.277	-0.024
Colorectal Cancer ⁵	409	0.4%	522	0.4%	-0.025	-0.004
Prostate Cancer ⁵	758	0.8%	893	0.8%	0.018	0.002
Lung Cancer ⁵	160	0.2%	472	0.4%	-0.239	-0.045
Endometrial Cancer ⁵	203	0.2%	192	0.2%	0.045	0.010
Urologic Cancer ⁵	198	0.2%	282	0.2%	-0.037	-0.008
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	8.8	11.4	13.4	15.4	-4.594	-0.339
Mean number of emergency room encounters	0.3	0.9	0.6	1.4	-0.252	-0.214
Mean number of inpatient hospital encounters	0.1	0.3	0.3	0.7	-0.192	-0.360
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.015
Mean number of other ambulatory encounters	2.8	6.0	4.8	9.3	-2.072	-0.266

Table 1be. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	11.6	15.2	15.6	18.3	-3.952	-0.235
Mean number of generics dispensed	4.4	4.3	6.0	5.3	-1.539	-0.321
Mean number of unique drug classes dispensed	4.1	3.8	5.5	4.7	-1.429	-0.335

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1bf. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	97,031	100.0%	116,938	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	48.9	12.9	48.3	15.4	0.590	0.041
Age						
18-44 years	36,459	37.6%	48,241	41.3%	-3.679	-0.075
45-64 years	53,657	55.3%	56,604	48.4%	6.894	0.138
≥ 65 years	6,915	7.1%	12,093	10.3%	-3.215	-0.114
Sex						
Female	52,184	53.8%	63,293	54.1%	-0.344	-0.007
Male	44,847	46.2%	53,645	45.9%	0.344	0.007
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	97,031	100.0%	116,938	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	97,031	100.0%	116,938	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	97,031	100.0%	116,938	100.0%	0.000	NaN
2022	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.8	1.9	0.8	1.7	-0.003	-0.002
Allergic Reaction	11,095	11.4%	14,565	12.5%	-1.021	-0.031
Diabetes	20,000	20.6%	9,929	8.5%	12.121	0.349
Heart Failure	2,261	2.3%	4,291	3.7%	-1.339	-0.079
Ischemic Heart Disease	3,983	4.1%	12,361	10.6%	-6.466	-0.250

Table 1bf. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	22,230	22.9%	24,359	20.8%	2.080	0.050
Acquired Hypothyroidism ⁶	10,235	10.5%	11,854	10.1%	0.411	0.013
Acute Myocardial Infarction ⁶	951	1.0%	4,583	3.9%	-2.939	-0.191
Alzheimers Disease and Related Disorders ⁶	846	0.9%	933	0.8%	0.074	0.008
Anemia ⁶	9,926	10.2%	10,961	9.4%	0.857	0.029
Asthma ⁶	7,670	7.9%	7,391	6.3%	1.584	0.062
Atrial Fibrillation ⁶	1,445	1.5%	7,066	6.0%	-4.553	-0.241
Benign Prostatic Hyperplasia ⁶	2,443	2.5%	4,302	3.7%	-1.161	-0.067
Cataract ⁶	5,518	5.7%	6,960	6.0%	-0.265	-0.011
Chronic Kidney Disease ⁶	14,628	15.1%	9,100	7.8%	7.294	0.231
Bronchiectasis ⁶	4,355	4.5%	4,603	3.9%	0.552	0.027
Depression ⁶	16,925	17.4%	21,541	18.4%	-0.977	-0.025
Glaucoma ⁶	3,301	3.4%	4,303	3.7%	-0.277	-0.015
Hip or Pelvic Fracture ⁶	267	0.3%	262	0.2%	0.052	0.010
Hyperlipidemia ⁶	31,054	32.0%	35,543	30.4%	1.609	0.035
Hypertension ⁶	41,124	42.4%	37,864	32.4%	10.004	0.208
Osteoporosis ⁶	1,537	1.6%	2,075	1.8%	-0.190	-0.015
Rheumatoid Arthritis or Osteoarthritis ⁶	15,292	15.8%	16,756	14.3%	1.431	0.040
Stroke or Transient Ischemic Attack ⁶	2,801	2.9%	2,694	2.3%	0.583	0.037
Breast Cancer ⁶	1,869	1.9%	1,547	1.3%	0.603	0.048
Colorectal Cancer ⁶	708	0.7%	456	0.4%	0.340	0.046
Prostate Cancer ⁶	759	0.8%	1,059	0.9%	-0.123	-0.013
Lung Cancer ⁶	342	0.4%	350	0.3%	0.053	0.009
Endometrial Cancer ⁶	353	0.4%	156	0.1%	0.230	0.046
Urologic Cancer ⁶	344	0.4%	248	0.2%	0.143	0.027
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	11.7	15.4	11.6	13.5	0.031	0.002
Mean number of emergency room encounters	0.5	1.2	0.5	1.2	-0.004	-0.003
Mean number of inpatient hospital encounters	0.2	0.5	0.2	0.5	-0.021	-0.039
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.006
Mean number of other ambulatory encounters	3.9	8.7	4.0	7.8	-0.098	-0.012

Table 1bf. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Patient Characteristics^{1,2}						
Mean number of filled prescriptions	14.4	18.0	14.0	17.1	0.395	0.022
Mean number of generics dispensed	5.4	5.1	5.3	4.9	0.106	0.021
Mean number of unique drug classes dispensed	5.0	4.5	4.9	4.3	0.093	0.021

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 1bg. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Unique patients	25,455	100.0%	32,142	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	51.7	12.5	46.2	16.4	5.515	0.378
Age						
18-44 years	7,389	29.0%	15,858	49.3%	-20.310	-0.425
45-64 years	15,442	60.7%	12,756	39.7%	20.978	0.429
≥ 65 years	2,624	10.3%	3,528	11.0%	-0.668	-0.022
Sex						
Female	11,168	43.9%	20,319	63.2%	-19.343	-0.395
Male	14,287	56.1%	11,823	36.8%	19.343	0.395
Race ³						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	25,455	100.0%	32,142	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	25,455	100.0%	32,142	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	25,455	100.0%	32,142	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁴	0.4	1.4	1.2	2.0	-0.819	-0.474
Allergic Reaction	2,622	10.3%	4,656	14.5%	-4.185	-0.127
Diabetes	4,520	17.8%	2,975	9.3%	8.501	0.251
Heart Failure	305	1.2%	1,613	5.0%	-3.820	-0.221
Ischemic Heart Disease	874	3.4%	3,406	10.6%	-7.163	-0.283

Table 1bg. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
NSAID Use	5,260	20.7%	7,148	22.2%	-1.575	-0.038
Acquired Hypothyroidism ⁵	2,414	9.5%	3,538	11.0%	-1.524	-0.050
Acute Myocardial Infarction ⁵	156	0.6%	1,299	4.0%	-3.429	-0.229
Alzheimers Disease and Related Disorders ⁵	144	0.6%	367	1.1%	-0.576	-0.063
Anemia ⁵	1,686	6.6%	4,037	12.6%	-5.936	-0.203
Asthma ⁵	1,409	5.5%	2,494	7.8%	-2.224	-0.089
Atrial Fibrillation ⁵	236	0.9%	1,970	6.1%	-5.202	-0.285
Benign Prostatic Hyperplasia ⁵	823	3.2%	1,042	3.2%	-0.009	-0.000
Cataract ⁵	1,771	7.0%	1,996	6.2%	0.747	0.030
Chronic Kidney Disease ⁵	2,740	10.8%	3,047	9.5%	1.284	0.043
Bronchiectasis ⁵	870	3.4%	1,616	5.0%	-1.610	-0.080
Depression ⁵	2,825	11.1%	7,628	23.7%	-12.634	-0.338
Glaucoma ⁵	1,121	4.4%	1,210	3.8%	0.639	0.032
Hip or Pelvic Fracture ⁵	48	0.2%	97	0.3%	-0.113	-0.023
Hyperlipidemia ⁵	8,718	34.2%	9,495	29.5%	4.708	0.101
Hypertension ⁵	10,949	43.0%	9,640	30.0%	13.021	0.273
Osteoporosis ⁵	419	1.6%	665	2.1%	-0.423	-0.031
Rheumatoid Arthritis or Osteoarthritis ⁵	3,800	14.9%	4,935	15.4%	-0.425	-0.012
Stroke or Transient Ischemic Attack ⁵	517	2.0%	939	2.9%	-0.890	-0.057
Breast Cancer ⁵	354	1.4%	505	1.6%	-0.180	-0.015
Colorectal Cancer ⁵	123	0.5%	132	0.4%	0.073	0.011
Prostate Cancer ⁵	209	0.8%	284	0.9%	-0.063	-0.007
Lung Cancer ⁵	41	0.2%	138	0.4%	-0.268	-0.049
Endometrial Cancer ⁵	48	0.2%	40	0.1%	0.064	0.016
Urologic Cancer ⁵	53	0.2%	82	0.3%	-0.047	-0.010
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	9.4	11.2	14.0	15.4	-4.651	-0.345
Mean number of emergency room encounters	0.3	0.9	0.6	1.4	-0.258	-0.224
Mean number of inpatient hospital encounters	0.1	0.4	0.3	0.6	-0.181	-0.346
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	-0.000	-0.012
Mean number of other ambulatory encounters	2.9	6.2	5.1	9.5	-2.192	-0.274

Table 1bg. Unadjusted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ¹	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ²	Number/ Mean	Percent/ Standard Deviation ²		
Mean number of filled prescriptions	11.9	14.8	16.1	18.3	-4.193	-0.252
Mean number of generics dispensed	4.8	4.3	6.3	5.3	-1.580	-0.327
Mean number of unique drug classes dispensed	4.3	3.8	5.8	4.7	-1.469	-0.343

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Value represents standard deviation where no % follows the value.

³Data not available in Merative™ MarketScan® Research Databases

⁴The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁵Covariate not included in the propensity score logistic regression model.

Table 1bh. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ^{1,2}	Medical Product		Covariate Balance			
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Unique patients	25,454	100.0%	32,141	100.0%	N/A	N/A
Demographic Characteristics						
Age (years)	49.8	13.3	49.3	16.2	0.585	0.040
Age						
18-44 years	9,132	35.9%	12,996	40.4%	-4.557	-0.094
45-64 years	13,901	54.6%	14,784	46.0%	8.616	0.173
≥ 65 years	2,421	9.5%	4,361	13.6%	-4.059	-0.127
Sex						
Female	13,889	54.6%	17,522	54.5%	0.051	0.001
Male	11,565	45.4%	14,619	45.5%	-0.051	-0.001
Race ⁴						
American Indian or Alaska Native	-	-	-	-	-	-
Asian	-	-	-	-	-	-
Black or African American	-	-	-	-	-	-
Multi-racial	-	-	-	-	-	-
Unknown	25,454	100.0%	32,141	100.0%	0.000	NaN
White	-	-	-	-	-	-
Hispanic origin						
Yes	-	-	-	-	-	-
No	-	-	-	-	-	-
Unknown	25,454	100.0%	32,141	100.0%	0.000	NaN
Year						
2020	0	0.0%	0	0.0%	NaN	NaN
2021	0	0.0%	0	0.0%	NaN	NaN
2022	25,454	100.0%	32,141	100.0%	0.000	NaN
Health Characteristics						
Charlson/Elixhauser combined comorbidity score ⁵	0.9	1.9	0.9	1.8	-0.004	-0.002
Allergic Reaction	3,100	12.2%	4,320	13.4%	-1.262	-0.038
Diabetes	5,282	20.8%	2,949	9.2%	11.574	0.329
Heart Failure	618	2.4%	1,280	4.0%	-1.556	-0.088
Ischemic Heart Disease	1,180	4.6%	3,551	11.0%	-6.413	-0.240

Table 1bh. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
NSAID Use	5,992	23.5%	6,655	20.7%	2.832	0.068
Acquired Hypothyroidism ⁶	2,882	11.3%	3,347	10.4%	0.909	0.029
Acute Myocardial Infarction ⁶	276	1.1%	1,231	3.8%	-2.747	-0.178
Alzheimers Disease and Related Disorders ⁶	254	1.0%	307	1.0%	0.041	0.004
Anemia ⁶	2,831	11.1%	3,231	10.1%	1.069	0.035
Asthma ⁶	2,110	8.3%	2,004	6.2%	2.056	0.079
Atrial Fibrillation ⁶	341	1.3%	1,969	6.1%	-4.789	-0.255
Benign Prostatic Hyperplasia ⁶	723	2.8%	1,348	4.2%	-1.353	-0.073
Cataract ⁶	1,721	6.8%	2,313	7.2%	-0.436	-0.017
Chronic Kidney Disease ⁶	3,831	15.1%	2,712	8.4%	6.614	0.207
Bronchiectasis ⁶	1,325	5.2%	1,429	4.4%	0.760	0.035
Depression ⁶	4,351	17.1%	6,066	18.9%	-1.779	-0.046
Glaucoma ⁶	1,170	4.6%	1,335	4.2%	0.441	0.022
Hip or Pelvic Fracture ⁶	87	0.3%	80	0.2%	0.092	0.017
Hyperlipidemia ⁶	8,834	34.7%	10,463	32.6%	2.154	0.046
Hypertension ⁶	11,017	43.3%	10,671	33.2%	10.083	0.209
Osteoporosis ⁶	480	1.9%	673	2.1%	-0.209	-0.015
Rheumatoid Arthritis or Osteoarthritis ⁶	4,259	16.7%	5,020	15.6%	1.114	0.030
Stroke or Transient Ischemic Attack ⁶	764	3.0%	880	2.7%	0.263	0.016
Breast Cancer ⁶	532	2.1%	436	1.4%	0.734	0.056
Colorectal Cancer ⁶	208	0.8%	116	0.4%	0.458	0.060
Prostate Cancer ⁶	209	0.8%	330	1.0%	-0.204	-0.021
Lung Cancer ⁶	92	0.4%	109	0.3%	0.022	0.004
Endometrial Cancer ⁶	87	0.3%	33	0.1%	0.239	0.051
Urologic Cancer ⁶	92	0.4%	76	0.2%	0.125	0.023
Health Service Utilization Intensity Metrics						
Mean number of ambulatory encounters	12.2	14.6	12.3	13.8	-0.093	-0.007
Mean number of emergency room encounters	0.5	1.2	0.5	1.2	-0.012	-0.010
Mean number of inpatient hospital encounters	0.2	0.5	0.2	0.5	-0.021	-0.038
Mean number of non-acute institutional encounters	0.0	0.0	0.0	0.0	0.000	0.003
Mean number of other ambulatory encounters	4.1	9.2	4.2	8.2	-0.172	-0.020

Table 1bh. Weighted Characteristics of New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) (Propensity Score Stratified, Percentiles: 5) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Patient Characteristics ^{1,2}	Medical Product				Covariate Balance	
	ACE Inhibitors		Beta Blockers		Absolute Difference	Standardized Difference
	Number/ Mean	Percent/ Standard Deviation ³	Number/ Mean	Percent/ Standard Deviation ³		
Mean number of filled prescriptions	14.7	17.5	14.7	17.2	-0.029	-0.002
Mean number of generics dispensed	5.8	5.1	5.8	5.0	0.029	0.006
Mean number of unique drug classes dispensed	5.3	4.5	5.3	4.4	0.026	0.006

¹Data presented by a dash represents missing information. Data represented by NaN (Not a Number) is due to their inability to be calculated. This table may not use all data representations.

²Weighted patient characteristics tables facilitate the assessment of covariate balance after propensity score (PS) stratification and should not be interpreted as a description of the unweighted population. Treated/control patients are weighted by the proportion of the total patient population included in their PS stratum divided by the proportion of the total treated/control patient population included in their PS stratum.

³Value represents standard deviation where no % follows the value.

⁴Data not available in Merative™ MarketScan® Research Databases

⁵The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051)

⁶Covariate not included in the propensity score logistic regression model.

Table 2a. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Site-Adjusted Analysis									
ACE Inhibitors	195,769	36,152.66	67.45	0.18	277	7.66	1.41	3.77 (2.93, 4.85)	<0.001
Beta Blockers	232,685	36,118.72	56.70	0.16	78	2.16	0.34		
Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025									
ACE Inhibitors	128,171	16,003.13	45.60	0.12	159	9.94	1.24	4.82 (3.31, 7.01)	<0.001
Beta Blockers	128,171	16,003.13	45.60	0.12	33	2.06	0.26		
Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025									
ACE Inhibitors	128,171	23,428.85	66.77	0.18	200	8.54	1.56	5.18 (3.62, 7.42)	<0.001
Beta Blockers	128,171	20,113.71	57.32	0.16	35	1.74	0.27		

Table 2b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers, Overall									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	195,769	36,152.66	67.45	0.18	277	7.66	1.41	3.77 (2.93, 4.85)	<0.001
Beta Blockers	232,685	36,118.72	56.70	0.16	78	2.16	0.34		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	128,171	16,003.13	45.60	0.12	159	9.94	1.24	4.82 (3.31, 7.01)	<0.001
Beta Blockers	128,171	16,003.13	45.60	0.12	33	2.06	0.26		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	128,171	23,428.85	66.77	0.18	200	8.54	1.56	5.18 (3.62, 7.42)	<0.001
Beta Blockers	128,171	20,113.71	57.32	0.16	35	1.74	0.27		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2020									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	27,928	5,347.10	69.93	0.19	50	9.35	1.79	4.86 (2.39, 9.89)	<0.001
Beta Blockers	26,550	4,396.91	60.49	0.17	9	2.05	0.34		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	26,549	3,613.43	49.71	0.14	40	11.07	1.51	4.44 (2.16, 9.16)	<0.001
Beta Blockers	26,549	3,613.43	49.71	0.14	9	2.49	0.34		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	26,549	5,084.28	69.95	0.19	49	9.64	1.85	5.01 (2.46, 10.21)	<0.001
Beta Blockers	26,549	4,396.67	60.49	0.17	9	2.05	0.34		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2021									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	80,463	15,955.77	72.43	0.20	136	8.52	1.69	5.85 (3.69, 9.26)	<0.001
Beta Blockers	80,927	13,685.34	61.77	0.17	21	1.53	0.26		

Table 2b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	80,265	11,452.27	52.11	0.14	101	8.82	1.26	5.05 (3.13, 8.16)	<0.001
Beta Blockers	80,265	11,452.27	52.11	0.14	20	1.75	0.25		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	80,265	15,915.72	72.43	0.20	135	8.48	1.68	5.77 (3.64, 9.14)	<0.001
Beta Blockers	80,265	13,579.11	61.79	0.17	21	1.55	0.26		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2022									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	19,780	2,125.98	39.26	0.11	14	6.59	0.71	2.78 (1.00, 7.73)	0.049
Beta Blockers	20,694	2,031.46	35.86	0.10	5	2.46	0.24		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	19,723	1,278.47	23.68	0.06	11	8.60	0.56	3.67 (1.02, 13.14)	0.046
Beta Blockers	19,723	1,278.47	23.68	0.06	3	2.35	0.15		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	19,723	2,119.32	39.25	0.11	14	6.61	0.71	2.66 (0.96, 7.39)	0.06
Beta Blockers	19,723	1,937.24	35.88	0.10	5	2.58	0.25		

Table 3a. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Site-Adjusted Analysis									
ACE Inhibitors	195,769	36,152.66	67.45	0.18	277	7.66	1.41	3.77 (2.93, 4.85)	<0.001
Beta Blockers	232,685	36,118.72	56.70	0.16	78	2.16	0.34		
Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025									
ACE Inhibitors	128,126	16,000.42	45.61	0.12	156	9.75	1.22	4.59 (3.17, 6.65)	<0.001
Beta Blockers	128,126	16,000.42	45.61	0.12	34	2.12	0.27		
Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025									
ACE Inhibitors	128,126	23,387.08	66.67	0.18	203	8.68	1.58	4.88 (3.45, 6.90)	<0.001
Beta Blockers	128,126	20,142.26	57.42	0.16	38	1.89	0.30		

Table 3b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers, Overall									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	195,769	36,152.66	67.45	0.18	277	7.66	1.41	3.77 (2.93, 4.85)	<0.001
Beta Blockers	232,685	36,118.72	56.70	0.16	78	2.16	0.34		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	128,126	16,000.42	45.61	0.12	156	9.75	1.22	4.59 (3.17, 6.65)	<0.001
Beta Blockers	128,126	16,000.42	45.61	0.12	34	2.12	0.27		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	128,126	23,387.08	66.67	0.18	203	8.68	1.58	4.88 (3.45, 6.90)	<0.001
Beta Blockers	128,126	20,142.26	57.42	0.16	38	1.89	0.30		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2020									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	27,193	5,215.53	70.05	0.19	47	9.01	1.73	4.40 (2.22, 8.72)	<0.001
Beta Blockers	27,543	4,567.73	60.57	0.17	10	2.19	0.36		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	26,855	3,661.75	49.80	0.14	39	10.65	1.45	3.90 (1.95, 7.81)	<0.001
Beta Blockers	26,855	3,661.75	49.80	0.14	10	2.73	0.37		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	26,855	5,152.89	70.08	0.19	47	9.12	1.75	4.34 (2.19, 8.60)	<0.001
Beta Blockers	26,855	4,451.13	60.54	0.17	10	2.25	0.37		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2021									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	80,593	15,981.85	72.43	0.20	140	8.76	1.74	5.05 (3.30, 7.73)	<0.001
Beta Blockers	80,470	13,605.12	61.75	0.17	25	1.84	0.31		

Table 3b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	80,126	11,420.87	52.06	0.14	114	9.98	1.42	4.96 (3.17, 7.76)	<0.001
Beta Blockers	80,126	11,420.87	52.06	0.14	23	2.01	0.29		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	80,126	15,893.07	72.45	0.20	140	8.81	1.75	5.05 (3.30, 7.74)	<0.001
Beta Blockers	80,126	13,547.99	61.76	0.17	25	1.85	0.31		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2022									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	20,340	2,189.70	39.32	0.11	16	7.31	0.79	5.05 (1.47, 17.32)	0.01
Beta Blockers	20,113	1,969.42	35.76	0.10	3	1.52	0.15		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	19,930	1,292.54	23.69	0.06	13	10.06	0.65	4.33 (1.23, 15.21)	0.022
Beta Blockers	19,930	1,292.54	23.69	0.06	3	2.32	0.15		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	19,930	2,147.30	39.35	0.11	16	7.45	0.80	5.11 (1.49, 17.52)	0.01
Beta Blockers	19,930	1,953.17	35.79	0.10	3	1.54	0.15		

Table 4a. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Site-Adjusted Analysis									
ACE Inhibitors	152,513	28,116.30	67.34	0.18	218	7.75	1.43	3.89 (2.92, 5.18)	<0.001
Beta Blockers	183,104	28,397.10	56.65	0.16	60	2.11	0.33		
Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025									
ACE Inhibitors	107,560	13,428.25	45.60	0.12	123	9.16	1.14	4.73 (3.10, 7.22)	<0.001
Beta Blockers	107,560	13,428.25	45.60	0.12	26	1.94	0.24		
Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025									
ACE Inhibitors	107,560	19,693.82	66.88	0.18	163	8.28	1.52	5.07 (3.42, 7.53)	<0.001
Beta Blockers	107,560	16,839.77	57.18	0.16	29	1.72	0.27		

Table 4b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers, Overall									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	152,513	28,116.30	67.34	0.18	218	7.75	1.43	3.89 (2.92, 5.18)	<0.001
Beta Blockers	183,104	28,397.10	56.65	0.16	60	2.11	0.33		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	107,560	13,428.25	45.60	0.12	123	9.16	1.14	4.73 (3.10, 7.22)	<0.001
Beta Blockers	107,560	13,428.25	45.60	0.12	26	1.94	0.24		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	107,560	19,693.82	66.88	0.18	163	8.28	1.52	5.07 (3.42, 7.53)	<0.001
Beta Blockers	107,560	16,839.77	57.18	0.16	29	1.72	0.27		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2020									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	21,182	4,079.22	70.34	0.19	31	7.60	1.46	3.83 (1.69, 8.70)	0.001
Beta Blockers	20,228	3,341.39	60.33	0.17	7	2.09	0.35		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	20,112	2,742.96	49.81	0.14	26	9.48	1.29	4.33 (1.78, 10.53)	0.001
Beta Blockers	20,112	2,742.96	49.81	0.14	6	2.19	0.30		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	20,112	3,869.88	70.28	0.19	30	7.75	1.49	3.90 (1.71, 8.89)	0.001
Beta Blockers	20,112	3,323.04	60.35	0.17	7	2.11	0.35		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2021									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	68,476	13,665.80	72.89	0.20	119	8.71	1.74	5.92 (3.61, 9.73)	<0.001
Beta Blockers	68,359	11,613.96	62.05	0.17	18	1.55	0.26		

Table 4b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	67,983	9,782.64	52.56	0.14	91	9.30	1.34	5.69 (3.34, 9.68)	<0.001
Beta Blockers	67,983	9,782.64	52.56	0.14	16	1.64	0.24		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	67,983	13,566.92	72.89	0.20	118	8.70	1.74	5.88 (3.58, 9.66)	<0.001
Beta Blockers	67,983	11,552.19	62.07	0.17	18	1.56	0.26		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2022									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	17,902	1,948.80	39.76	0.11	13	6.67	0.73	3.31 (1.08, 10.14)	0.036
Beta Blockers	18,973	1,884.42	36.28	0.10	4	2.12	0.21		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	17,836	1,181.91	24.20	0.07	11	9.31	0.62	2.75 (0.88, 8.64)	0.083
Beta Blockers	17,836	1,181.91	24.20	0.07	4	3.38	0.22		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	17,836	1,942.00	39.77	0.11	13	6.69	0.73	3.13 (1.02, 9.59)	0.046
Beta Blockers	17,836	1,775.47	36.36	0.10	4	2.25	0.22		

Table 5a. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Site-Adjusted Analysis									
ACE Inhibitors	152,513	28,116.30	67.34	0.18	218	7.75	1.43	3.89 (2.92, 5.18)	<0.001
Beta Blockers	183,104	28,397.10	56.65	0.16	60	2.11	0.33		
Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025									
ACE Inhibitors	107,581	13,434.50	45.61	0.12	127	9.45	1.18	4.38 (2.93, 6.56)	<0.001
Beta Blockers	107,581	13,434.50	45.61	0.12	29	2.16	0.27		
Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025									
ACE Inhibitors	107,581	19,669.69	66.78	0.18	158	8.03	1.47	4.58 (3.12, 6.74)	<0.001
Beta Blockers	107,581	16,868.58	57.27	0.16	31	1.84	0.29		

Table 5b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers, Overall									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	152,513	28,116.30	67.34	0.18	218	7.75	1.43	3.89 (2.92, 5.18)	<0.001
Beta Blockers	183,104	28,397.10	56.65	0.16	60	2.11	0.33		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	107,581	13,434.50	45.61	0.12	127	9.45	1.18	4.38 (2.93, 6.56)	<0.001
Beta Blockers	107,581	13,434.50	45.61	0.12	29	2.16	0.27		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	107,581	19,669.69	66.78	0.18	158	8.03	1.47	4.58 (3.12, 6.74)	<0.001
Beta Blockers	107,581	16,868.58	57.27	0.16	31	1.84	0.29		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2020									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	20,720	3,996.50	70.45	0.19	34	8.51	1.64	3.40 (1.63, 7.10)	0.001
Beta Blockers	20,721	3,422.38	60.33	0.17	9	2.63	0.43		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	20,386	2,777.15	49.76	0.14	30	10.80	1.47	3.75 (1.72, 8.18)	<0.001
Beta Blockers	20,386	2,777.15	49.76	0.14	8	2.88	0.39		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	20,386	3,934.91	70.50	0.19	34	8.64	1.67	3.40 (1.63, 7.09)	0.001
Beta Blockers	20,386	3,366.42	60.32	0.17	9	2.67	0.44		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2021									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	68,452	13,668.34	72.93	0.20	108	7.90	1.58	6.00 (3.55, 10.14)	<0.001
Beta Blockers	68,483	11,622.26	61.99	0.17	16	1.38	0.23		

Table 5b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	68,117	9,810.25	52.60	0.14	87	8.87	1.28	5.80 (3.35, 10.03)	<0.001
Beta Blockers	68,117	9,810.25	52.60	0.14	15	1.53	0.22		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	68,117	13,600.90	72.93	0.20	108	7.94	1.59	5.99 (3.54, 10.13)	<0.001
Beta Blockers	68,117	11,559.93	61.99	0.17	16	1.38	0.23		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2022									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	18,409	2,004.84	39.78	0.11	16	7.98	0.87	2.56 (1.00, 6.53)	0.05
Beta Blockers	18,377	1,823.94	36.25	0.10	6	3.29	0.33		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	17,980	1,191.53	24.21	0.07	12	10.07	0.67	2.00 (0.75, 5.33)	0.166
Beta Blockers	17,980	1,191.53	24.21	0.07	6	5.04	0.33		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.025</i>									
ACE Inhibitors	17,980	1,960.10	39.82	0.11	16	8.16	0.89	2.56 (1.00, 6.54)	0.05
Beta Blockers	17,980	1,784.39	36.25	0.10	6	3.36	0.33		

Table 6a. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Site-Adjusted Analysis									
ACE Inhibitors	195,769	36,152.66	67.45	0.18	277	7.66	1.41	3.77 (2.93, 4.85)	<0.001
Beta Blockers	232,685	36,118.72	56.70	0.16	78	2.16	0.34		
Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed									
ACE Inhibitors	195,763	36,151.39	67.45	0.18	277	7.66	1.41	4.62 (3.49, 6.10)	<0.001
Beta Blockers	232,684	36,118.48	56.70	0.16	78	2.16	0.34		

Table 6b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers, Overall									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	195,769	36,152.66	67.45	0.18	277	7.66	1.41	3.77 (2.93, 4.85)	<0.001
Beta Blockers	232,685	36,118.72	56.70	0.16	78	2.16	0.34		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	195,763	36,151.39	67.45	0.18	277	7.66	1.41	4.62 (3.49, 6.10)	<0.001
Beta Blockers	232,684	36,118.48	56.70	0.16	78	2.16	0.34		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2020									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	42,887	8,302.49	70.71	0.19	69	8.31	1.61	3.71 (2.23, 6.16)	<0.001
Beta Blockers	47,812	7,826.90	59.79	0.16	19	2.43	0.40		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	42,885	8,302.00	70.71	0.19	69	8.31	1.61	4.03 (2.30, 7.09)	<0.001
Beta Blockers	47,810	7,826.41	59.79	0.16	19	2.43	0.40		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2021									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	122,695	24,565.36	73.13	0.20	187	7.61	1.52	3.96 (2.90, 5.41)	<0.001
Beta Blockers	147,225	24,608.74	61.05	0.17	50	2.03	0.34		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	122,686	24,563.47	73.13	0.20	187	7.61	1.52	5.25 (3.72, 7.41)	<0.001
Beta Blockers	147,223	24,608.42	61.05	0.17	50	2.03	0.34		

Table 6b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2022									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	30,187	3,284.81	39.74	0.11	21	6.39	0.70	2.76 (1.26, 6.02)	0.011
Beta Blockers	37,648	3,683.08	35.73	0.10	9	2.44	0.24		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	30,185	3,284.62	39.75	0.11	21	6.39	0.70	2.43 (1.02, 5.83)	0.046
Beta Blockers	37,641	3,682.70	35.74	0.10	9	2.44	0.24		

Table 7a. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Site-Adjusted Analysis									
ACE Inhibitors	195,769	36,152.66	67.45	0.18	277	7.66	1.41	3.77 (2.93, 4.85)	<0.001
Beta Blockers	232,685	36,118.72	56.70	0.16	78	2.16	0.34		
Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed									
ACE Inhibitors	195,765	36,151.67	67.45	0.18	277	7.66	1.41	4.60 (3.48, 6.08)	<0.001
Beta Blockers	232,683	36,118.23	56.70	0.16	78	2.16	0.34		

Table 7b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers, Overall									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	195,769	36,152.66	67.45	0.18	277	7.66	1.41	3.77 (2.93, 4.85)	<0.001
Beta Blockers	232,685	36,118.72	56.70	0.16	78	2.16	0.34		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	195,765	36,151.67	67.45	0.18	277	7.66	1.41	4.60 (3.48, 6.08)	<0.001
Beta Blockers	232,683	36,118.23	56.70	0.16	78	2.16	0.34		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2020									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	42,887	8,302.49	70.71	0.19	69	8.31	1.61	3.71 (2.23, 6.16)	<0.001
Beta Blockers	47,812	7,826.90	59.79	0.16	19	2.43	0.40		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	42,886	8,302.25	70.71	0.19	69	8.31	1.61	4.04 (2.30, 7.09)	<0.001
Beta Blockers	47,810	7,826.41	59.79	0.16	19	2.43	0.40		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2021									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	122,695	24,565.36	73.13	0.20	187	7.61	1.52	3.96 (2.90, 5.41)	<0.001
Beta Blockers	147,225	24,608.74	61.05	0.17	50	2.03	0.34		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	122,686	24,563.47	73.13	0.20	187	7.61	1.52	5.25 (3.72, 7.41)	<0.001
Beta Blockers	147,224	24,608.50	61.05	0.17	50	2.03	0.34		

Table 7b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2022									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	30,187	3,284.81	39.74	0.11	21	6.39	0.70	2.76 (1.26, 6.02)	0.011
Beta Blockers	37,648	3,683.08	35.73	0.10	9	2.44	0.24		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	30,186	3,284.74	39.75	0.11	21	6.39	0.70	2.43 (1.02, 5.83)	0.046
Beta Blockers	37,641	3,682.70	35.74	0.10	9	2.44	0.24		

Table 8a. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Site-Adjusted Analysis									
ACE Inhibitors	152,513	28,116.30	67.34	0.18	218	7.75	1.43	3.89 (2.92, 5.18)	<0.001
Beta Blockers	183,104	28,397.10	56.65	0.16	60	2.11	0.33		
Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed									
ACE Inhibitors	152,512	28,116.05	67.33	0.18	218	7.75	1.43	4.54 (3.34, 6.18)	<0.001
Beta Blockers	183,102	28,397.03	56.65	0.16	60	2.11	0.33		

Table 8b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers, Overall									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	152,513	28,116.30	67.34	0.18	218	7.75	1.43	3.89 (2.92, 5.18)	<0.001
Beta Blockers	183,104	28,397.10	56.65	0.16	60	2.11	0.33		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	152,512	28,116.05	67.33	0.18	218	7.75	1.43	4.54 (3.34, 6.18)	<0.001
Beta Blockers	183,102	28,397.03	56.65	0.16	60	2.11	0.33		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2020									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	30,026	5,820.63	70.80	0.19	48	8.25	1.60	3.51 (1.94, 6.38)	<0.001
Beta Blockers	33,990	5,553.54	59.68	0.16	14	2.52	0.41		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	30,023	5,820.28	70.81	0.19	48	8.25	1.60	3.66 (1.94, 6.91)	<0.001
Beta Blockers	33,988	5,553.28	59.68	0.16	14	2.52	0.41		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2021									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	97,032	19,504.01	73.42	0.20	150	7.69	1.55	4.20 (2.94, 6.00)	<0.001
Beta Blockers	116,972	19,663.98	61.40	0.17	38	1.93	0.32		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	97,030	19,503.70	73.42	0.20	150	7.69	1.55	5.35 (3.64, 7.87)	<0.001
Beta Blockers	116,937	19,658.81	61.40	0.17	37	1.88	0.32		

Table 8b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2022									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	25,455	2,791.66	40.06	0.11	20	7.16	0.79	3.01 (1.32, 6.82)	0.009
Beta Blockers	32,142	3,179.59	36.13	0.10	8	2.52	0.25		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	25,454	2,791.54	40.06	0.11	20	7.16	0.79	3.09 (1.25, 7.68)	0.015
Beta Blockers	32,140	3,179.53	36.13	0.10	8	2.52	0.25		

Table 9a. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Site-Adjusted Analysis									
ACE Inhibitors	152,513	28,116.30	67.34	0.18	218	7.75	1.43	3.89 (2.92, 5.18)	<0.001
Beta Blockers	183,104	28,397.10	56.65	0.16	60	2.11	0.33		
Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed									
ACE Inhibitors	152,512	28,116.05	67.33	0.18	218	7.75	1.43	4.53 (3.33, 6.17)	<0.001
Beta Blockers	183,103	28,397.09	56.65	0.16	60	2.11	0.33		

Table 9b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers, Overall									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	152,513	28,116.30	67.34	0.18	218	7.75	1.43	3.89 (2.92, 5.18)	<0.001
Beta Blockers	183,104	28,397.10	56.65	0.16	60	2.11	0.33		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	152,512	28,116.05	67.33	0.18	218	7.75	1.43	4.53 (3.33, 6.17)	<0.001
Beta Blockers	183,103	28,397.09	56.65	0.16	60	2.11	0.33		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2020									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	30,026	5,820.63	70.80	0.19	48	8.25	1.60	3.51 (1.94, 6.38)	<0.001
Beta Blockers	33,990	5,553.54	59.68	0.16	14	2.52	0.41		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	30,023	5,820.28	70.81	0.19	48	8.25	1.60	3.66 (1.94, 6.91)	<0.001
Beta Blockers	33,989	5,553.53	59.68	0.16	14	2.52	0.41		
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2021									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	97,032	19,504.01	73.42	0.20	150	7.69	1.55	4.20 (2.94, 6.00)	<0.001
Beta Blockers	116,972	19,663.98	61.40	0.17	38	1.93	0.32		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	97,031	19,503.76	73.42	0.20	150	7.69	1.55	5.36 (3.64, 7.88)	<0.001
Beta Blockers	116,938	19,659.05	61.40	0.17	37	1.88	0.32		

Table 9b. Effect Estimates for New Users of ACE Inhibitors vs. Beta Blockers and Angioedema, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, by Analysis Type and Year

Medical Product	Number of New Users	Person-Years at Risk	Average Person-Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1,000 Person-Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
New Users of ACE Inhibitors vs. Beta Blockers by Year, 2022									
<i>Site-Adjusted Analysis</i>									
ACE Inhibitors	25,455	2,791.66	40.06	0.11	20	7.16	0.79	3.01 (1.32, 6.82)	0.009
Beta Blockers	32,142	3,179.59	36.13	0.10	8	2.52	0.25		
<i>Propensity Score Adjusted Stratified Analysis; Percentiles= 5, Trimmed</i>									
ACE Inhibitors	25,454	2,791.54	40.06	0.11	20	7.16	0.79	3.10 (1.25, 7.69)	0.015
Beta Blockers	32,141	3,179.58	36.13	0.10	8	2.52	0.25		

Table 10. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from September 10, 2020 to April 1, 2022

	New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM)				New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM)			
	ACE Inhibitors		Beta Blockers		ACE Inhibitors		Beta Blockers	
	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements								
Enrolled at any point during the query period	31,552,645	N/A	31,552,645	N/A	31,552,645	N/A	31,552,645	N/A
Had required coverage type (medical and/or drug coverage)	29,982,325	1,570,320	29,982,325	1,570,320	29,982,325	1,570,320	29,982,325	1,570,320
Enrolled during specified age range	24,013,635	5,968,690	24,013,635	5,968,690	24,013,635	5,968,690	24,013,635	5,968,690
Had requestable medical charts	24,013,635	0	24,013,635	0	24,013,635	0	24,013,635	0
Met demographic requirements (sex, race, and Hispanic origin)	24,013,635	0	24,013,635	0	24,013,635	0	24,013,635	0
Members with a valid index event								
Had any cohort-defining claim during the query period	1,913,032	22,100,603	2,056,328	21,957,307	1,913,032	22,100,603	2,056,328	21,957,307
Claim recorded during specified age range	1,912,653	379	2,054,522	1,806	1,912,653	379	2,054,522	1,806
Episode defining index claim recorded during the query period	590,925	1,321,728	735,074	1,319,448	590,925	1,321,728	735,074	1,319,448
Members with required pre-index history								
Had sufficient pre-index continuous enrollment	240,864	350,061	343,040	392,034	240,864	350,061	343,040	392,034
Met inclusion and exclusion criteria ¹	204,123	36,741	241,080	101,960	204,123	36,741	241,080	101,960
<i>Evidence of ACE Inhibitors, Beta Blockers, Angiotensin II Receptor Blockers, Aliskiren</i>	N/A	36,612	N/A	101,636	N/A	36,612	N/A	101,636
<i>Evidence of angioedema (exclusion)</i>	N/A	165	N/A	839	N/A	165	N/A	839
Met event incidence criteria	204,123	0	241,080	0	204,123	0	241,080	0
Members with required post-index follow-up								
Had sufficient post-index continuous enrollment	204,123	0	241,080	0	204,123	0	241,080	0
Had minimum days' supply on index date	204,123	0	241,080	0	204,123	0	241,080	0
Had index episode of at least required length	204,123	0	241,080	0	204,123	0	241,080	0
Had index episode longer than blackout period	204,123	0	241,080	0	204,123	0	241,080	0
Did not have an event during blackout period	204,123	0	241,080	0	204,123	0	241,080	0

Table 10. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from September 10, 2020 to April 1, 2022

	New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM)				New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM)			
	ACE Inhibitors		Beta Blockers		ACE Inhibitors		Beta Blockers	
	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded
Final cohort								
Number of members	204,123	N/A	241,080	N/A	204,123	N/A	241,080	N/A
Number of episodes	204,123	N/A	241,080	N/A	204,123	N/A	241,080	N/A
Members meeting comparative cohort eligibility requirements								
Excluded due to same-day initiation of both exposure groups	196,046	8,077	233,003	8,077	196,046	8,077	233,003	8,077
Excluded due to prior initiation of other exposure group	195,769	277	232,685	318	195,769	277	232,685	318
Excluded due to propensity score trimming	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Included in comparative analysis	128,171	67,598	128,171	104,514	128,126	67,643	128,126	104,559
Additional information								
Number of events in comparative analysis	200	N/A	35	N/A	203	N/A	38	N/A

¹Patients can meet multiple inclusion and/or exclusion criteria; therefore, the total number of patients excluded overall may not equal the sum of all patients in each criterion.

Table 10. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from September 10, 2020 to April 1, 2022

	New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM)				New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM)			
	ACE Inhibitors		Beta Blockers		ACE Inhibitors		Beta Blockers	
	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements								
Enrolled at any point during the query period	31,552,645	N/A	31,552,645	N/A	31,552,645	N/A	31,552,645	N/A
Had required coverage type (medical and/or drug coverage)	29,982,325	1,570,320	29,982,325	1,570,320	29,982,325	1,570,320	29,982,325	1,570,320
Enrolled during specified age range	24,013,635	5,968,690	24,013,635	5,968,690	24,013,635	5,968,690	24,013,635	5,968,690
Had requestable medical charts	24,013,635	0	24,013,635	0	24,013,635	0	24,013,635	0
Met demographic requirements (sex, race, and Hispanic origin)	24,013,635	0	24,013,635	0	24,013,635	0	24,013,635	0
Members with a valid index event								
Had any cohort-defining claim during the query period	1,913,032	22,100,603	2,056,328	21,957,307	1,913,032	22,100,603	2,056,328	21,957,307
Claim recorded during specified age range	1,912,653	379	2,054,522	1,806	1,912,653	379	2,054,522	1,806
Episode defining index claim recorded during the query period	590,925	1,321,728	735,074	1,319,448	590,925	1,321,728	735,074	1,319,448
Members with required pre-index history								
Had sufficient pre-index continuous enrollment	190,145	400,780	276,714	458,360	190,145	400,780	276,714	458,360
Met inclusion and exclusion criteria ¹	158,305	31,840	188,903	87,811	158,305	31,840	188,903	87,811
<i>Evidence of ACE Inhibitors, Beta Blockers, Angiotensin II Receptor Blockers, Aliskiren</i>	N/A	31,677	N/A	87,400	N/A	31,677	N/A	87,400
<i>Evidence of angioedema (exclusion)</i>	N/A	220	N/A	990	N/A	220	N/A	990
Met event incidence criteria	158,305	0	188,903	0	158,305	0	188,903	0
Members with required post-index follow-up								
Had sufficient post-index continuous enrollment	158,305	0	188,903	0	158,305	0	188,903	0
Had minimum days' supply on index date	158,305	0	188,903	0	158,305	0	188,903	0
Had index episode of at least required length	158,305	0	188,903	0	158,305	0	188,903	0
Had index episode longer than blackout period	158,305	0	188,903	0	158,305	0	188,903	0
Did not have an event during blackout period	158,305	0	188,903	0	158,305	0	188,903	0

Table 10. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from September 10, 2020 to April 1, 2022

	New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM)				New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM)			
	ACE Inhibitors		Beta Blockers		ACE Inhibitors		Beta Blockers	
	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded
Final cohort								
Number of members	158,305	N/A	188,903	N/A	158,305	N/A	188,903	N/A
Number of episodes	158,305	N/A	188,903	N/A	158,305	N/A	188,903	N/A
Members meeting comparative cohort eligibility requirements								
Excluded due to same-day initiation of both exposure groups	152,539	5,766	183,137	5,766	152,539	5,766	183,137	5,766
Excluded due to prior initiation of other exposure group	152,513	26	183,104	33	152,513	26	183,104	33
Excluded due to propensity score trimming	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Included in comparative analysis	107,560	44,953	107,560	75,544	107,581	44,932	107,581	75,523
Additional information								
Number of events in comparative analysis	163	N/A	29	N/A	158	N/A	31	N/A

¹Patients can meet multiple inclusion and/or exclusion criteria; therefore, the total number of patients excluded overall may not equal the sum of all patients in each criterion.

Table 10. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from September 10, 2020 to April 1, 2022

	New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS)				New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS)			
	ACE Inhibitors		Beta Blockers		ACE Inhibitors		Beta Blockers	
	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements								
Enrolled at any point during the query period	31,552,645	N/A	31,552,645	N/A	31,552,645	N/A	31,552,645	N/A
Had required coverage type (medical and/or drug coverage)	29,982,325	1,570,320	29,982,325	1,570,320	29,982,325	1,570,320	29,982,325	1,570,320
Enrolled during specified age range	24,013,635	5,968,690	24,013,635	5,968,690	24,013,635	5,968,690	24,013,635	5,968,690
Had requestable medical charts	24,013,635	0	24,013,635	0	24,013,635	0	24,013,635	0
Met demographic requirements (sex, race, and Hispanic origin)	24,013,635	0	24,013,635	0	24,013,635	0	24,013,635	0
Members with a valid index event								
Had any cohort-defining claim during the query period	1,913,032	22,100,603	2,056,328	21,957,307	1,913,032	22,100,603	2,056,328	21,957,307
Claim recorded during specified age range	1,912,653	379	2,054,522	1,806	1,912,653	379	2,054,522	1,806
Episode defining index claim recorded during the query period	590,925	1,321,728	735,074	1,319,448	590,925	1,321,728	735,074	1,319,448
Members with required pre-index history								
Had sufficient pre-index continuous enrollment	240,864	350,061	343,040	392,034	240,864	350,061	343,040	392,034
Met inclusion and exclusion criteria ¹	204,123	36,741	241,080	101,960	204,123	36,741	241,080	101,960
<i>Evidence of ACE Inhibitors, Beta Blockers, Angiotensin II Receptor Blockers, Aliskiren</i>	N/A	36,612	N/A	101,636	N/A	36,612	N/A	101,636
<i>Evidence of angioedema (exclusion)</i>	N/A	165	N/A	839	N/A	165	N/A	839
Met event incidence criteria	204,123	0	241,080	0	204,123	0	241,080	0
Members with required post-index follow-up								
Had sufficient post-index continuous enrollment	204,123	0	241,080	0	204,123	0	241,080	0
Had minimum days' supply on index date	204,123	0	241,080	0	204,123	0	241,080	0
Had index episode of at least required length	204,123	0	241,080	0	204,123	0	241,080	0
Had index episode longer than blackout period	204,123	0	241,080	0	204,123	0	241,080	0

Table 10. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from September 10, 2020 to April 1, 2022

	New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS)				New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS)			
	ACE Inhibitors		Beta Blockers		ACE Inhibitors		Beta Blockers	
	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded
Did not have an event during blackout period	204,123	0	241,080	0	204,123	0	241,080	0
Final cohort								
Number of members	204,123	N/A	241,080	N/A	204,123	N/A	241,080	N/A
Number of episodes	204,123	N/A	241,080	N/A	204,123	N/A	241,080	N/A
Members meeting comparative cohort eligibility requirements								
Excluded due to same-day initiation of both exposure groups	196,046	8,077	233,003	8,077	196,046	8,077	233,003	8,077
Excluded due to prior initiation of other exposure group	195,769	277	232,685	318	195,769	277	232,685	318
Excluded due to propensity score trimming	195,763	6	232,684	1	195,765	4	232,683	2
Included in comparative analysis	195,763	0	232,684	0	195,765	0	232,683	0
Additional information								
Number of events in comparative analysis	277	N/A	78	N/A	277	N/A	78	N/A

¹Patients can meet multiple inclusion and/or exclusion criteria; therefore, the total number of patients excluded overall may not equal the sum of all patients in each criterion.

Table 10. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from September 10, 2020 to April 1, 2022

	New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS)				New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS)			
	ACE Inhibitors		Beta Blockers		ACE Inhibitors		Beta Blockers	
	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements								
Enrolled at any point during the query period	31,552,645	N/A	31,552,645	N/A	31,552,645	N/A	31,552,645	N/A
Had required coverage type (medical and/or drug coverage)	29,982,325	1,570,320	29,982,325	1,570,320	29,982,325	1,570,320	29,982,325	1,570,320
Enrolled during specified age range	24,013,635	5,968,690	24,013,635	5,968,690	24,013,635	5,968,690	24,013,635	5,968,690
Had requestable medical charts	24,013,635	0	24,013,635	0	24,013,635	0	24,013,635	0
Met demographic requirements (sex, race, and Hispanic origin)	24,013,635	0	24,013,635	0	24,013,635	0	24,013,635	0
Members with a valid index event								
Had any cohort-defining claim during the query period	1,913,032	22,100,603	2,056,328	21,957,307	1,913,032	22,100,603	2,056,328	21,957,307
Claim recorded during specified age range	1,912,653	379	2,054,522	1,806	1,912,653	379	2,054,522	1,806
Episode defining index claim recorded during the query period	590,925	1,321,728	735,074	1,319,448	590,925	1,321,728	735,074	1,319,448
Members with required pre-index history								
Had sufficient pre-index continuous enrollment	190,145	400,780	276,714	458,360	190,145	400,780	276,714	458,360
Met inclusion and exclusion criteria ¹	158,305	31,840	188,903	87,811	158,305	31,840	188,903	87,811
<i>Evidence of ACE Inhibitors, Beta Blockers, Angiotensin II Receptor Blockers, Aliskiren</i>	N/A	31,677	N/A	87,400	N/A	31,677	N/A	87,400
<i>Evidence of angioedema (exclusion)</i>	N/A	220	N/A	990	N/A	220	N/A	990
Met event incidence criteria	158,305	0	188,903	0	158,305	0	188,903	0
Members with required post-index follow-up								
Had sufficient post-index continuous enrollment	158,305	0	188,903	0	158,305	0	188,903	0
Had minimum days' supply on index date	158,305	0	188,903	0	158,305	0	188,903	0
Had index episode of at least required length	158,305	0	188,903	0	158,305	0	188,903	0
Had index episode longer than blackout period	158,305	0	188,903	0	158,305	0	188,903	0

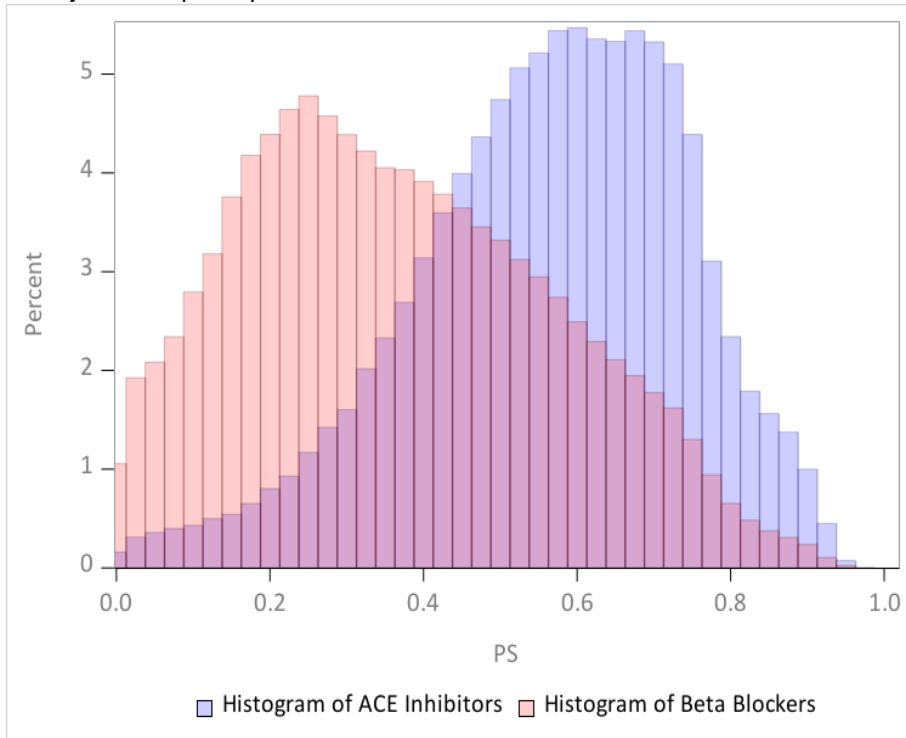
Table 10. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from September 10, 2020 to April 1, 2022

	New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS)				New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS)			
	ACE Inhibitors		Beta Blockers		ACE Inhibitors		Beta Blockers	
	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded
Did not have an event during blackout period	158,305	0	188,903	0	158,305	0	188,903	0
Final cohort								
Number of members	158,305	N/A	188,903	N/A	158,305	N/A	188,903	N/A
Number of episodes	158,305	N/A	188,903	N/A	158,305	N/A	188,903	N/A
Members meeting comparative cohort eligibility requirements								
Excluded due to same-day initiation of both exposure groups	152,539	5,766	183,137	5,766	152,539	5,766	183,137	5,766
Excluded due to prior initiation of other exposure group	152,513	26	183,104	33	152,513	26	183,104	33
Excluded due to propensity score trimming	152,512	1	183,102	2	152,512	1	183,103	1
Included in comparative analysis	152,512	0	183,102	0	152,512	0	183,103	0
Additional information								
Number of events in comparative analysis	218	N/A	60	N/A	218	N/A	60	N/A

¹Patients can meet multiple inclusion and/or exclusion criteria; therefore, the total number of patients excluded overall may not equal the sum of all patients in each criterion.

Figure 1a. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

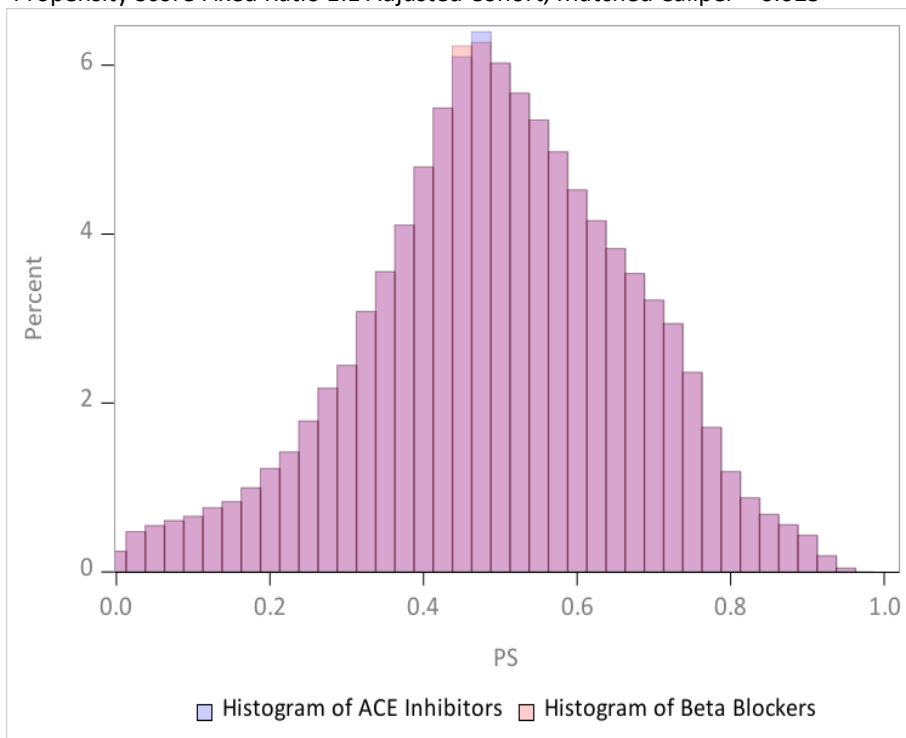
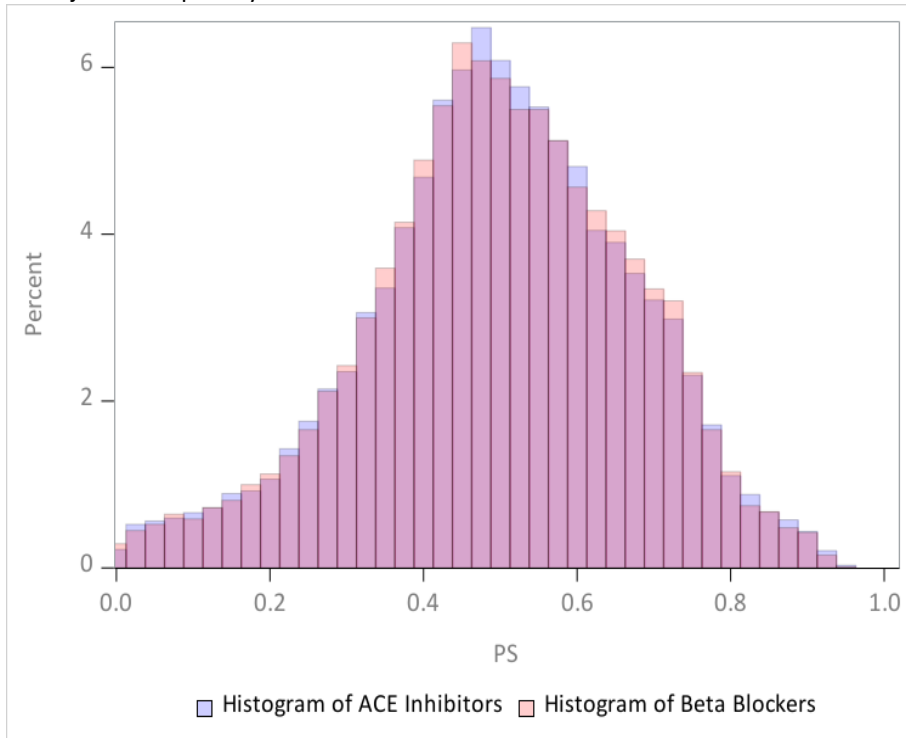


Figure 1b. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

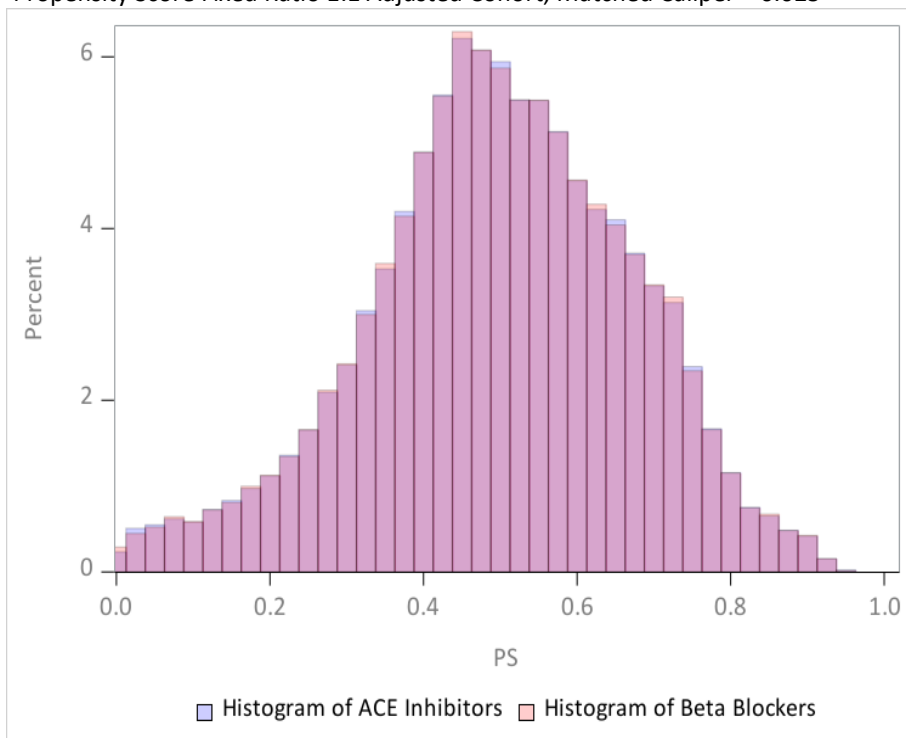
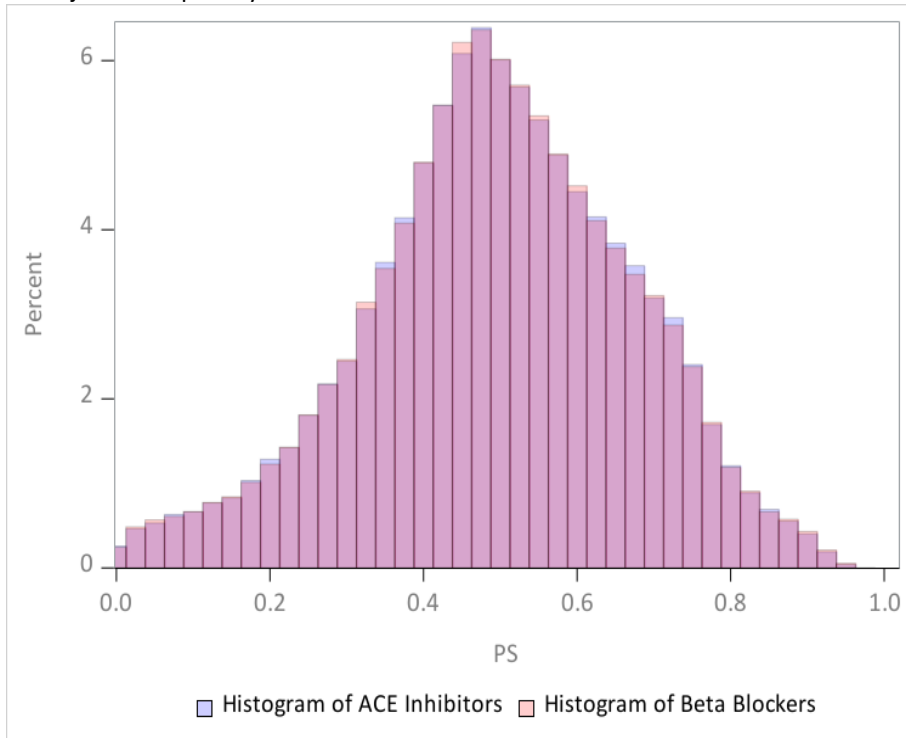


Figure 1c. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

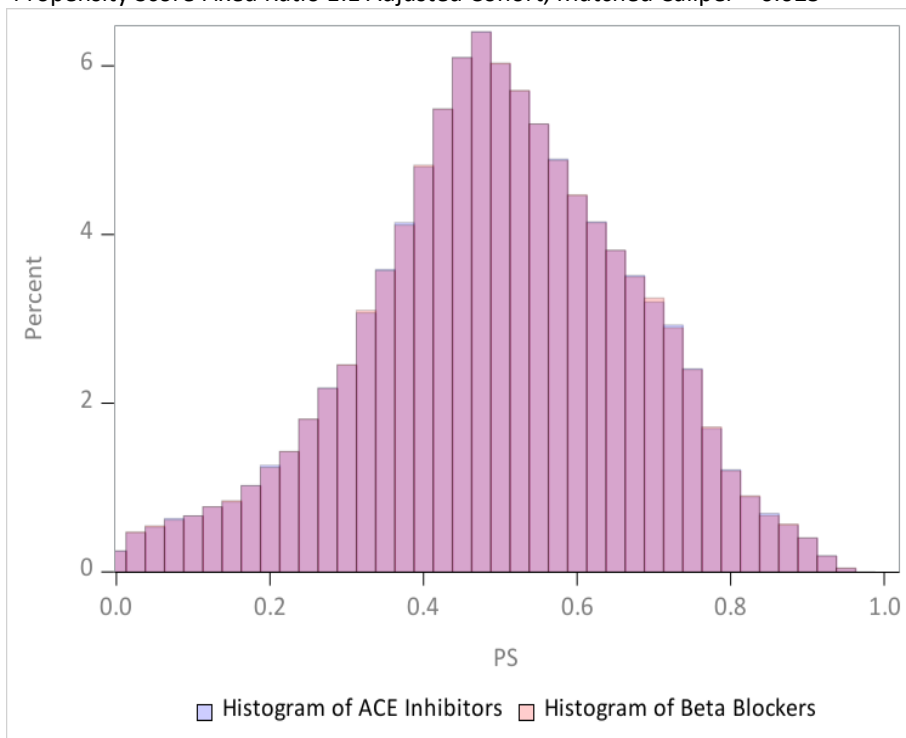
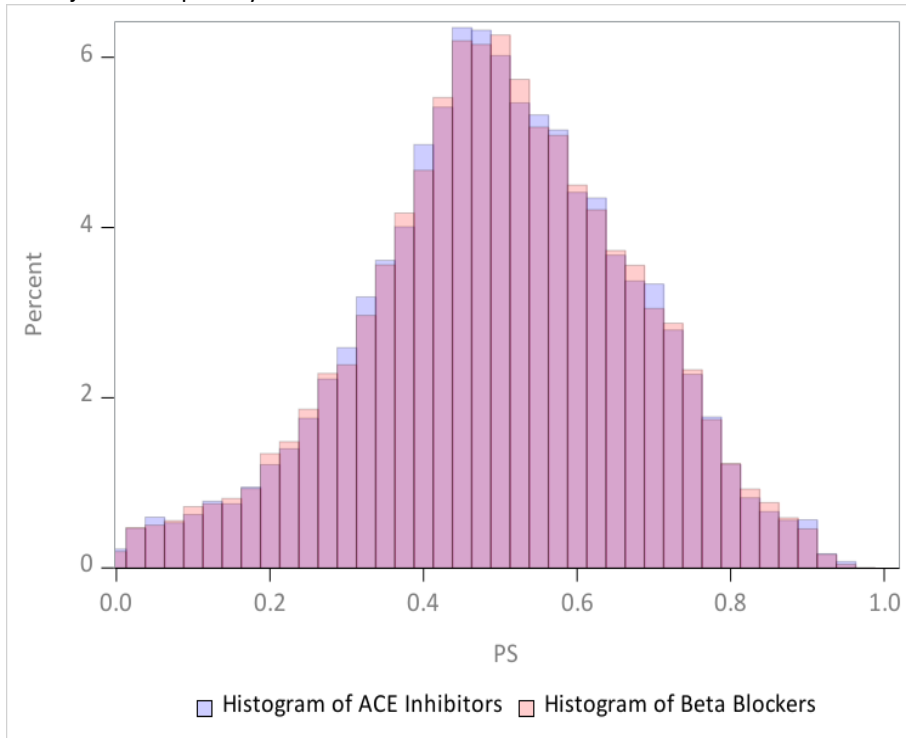


Figure 1d. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

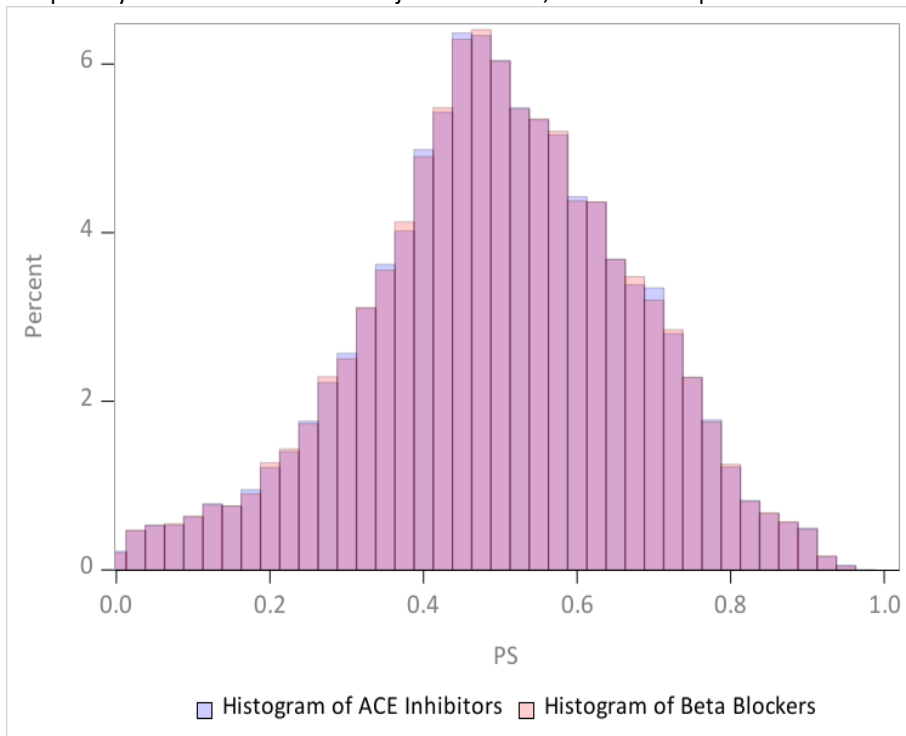
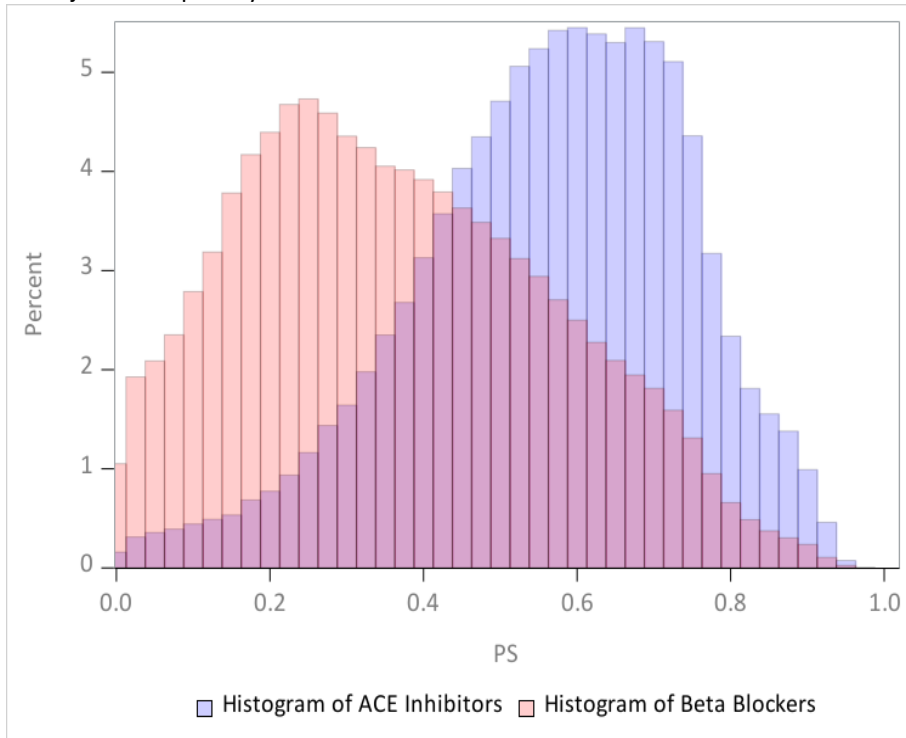


Figure 2a. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

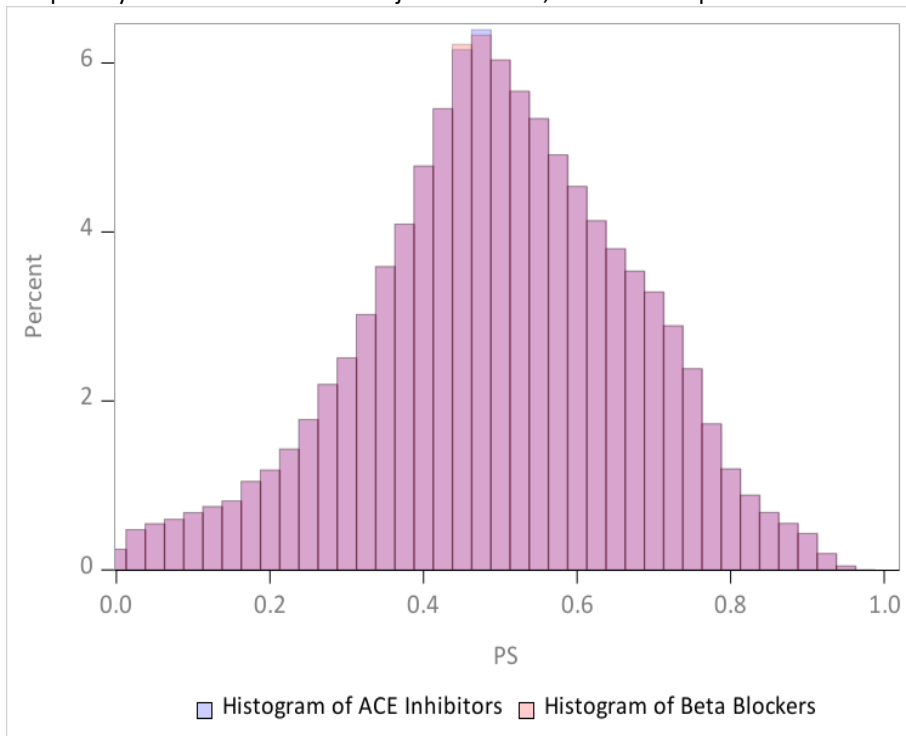
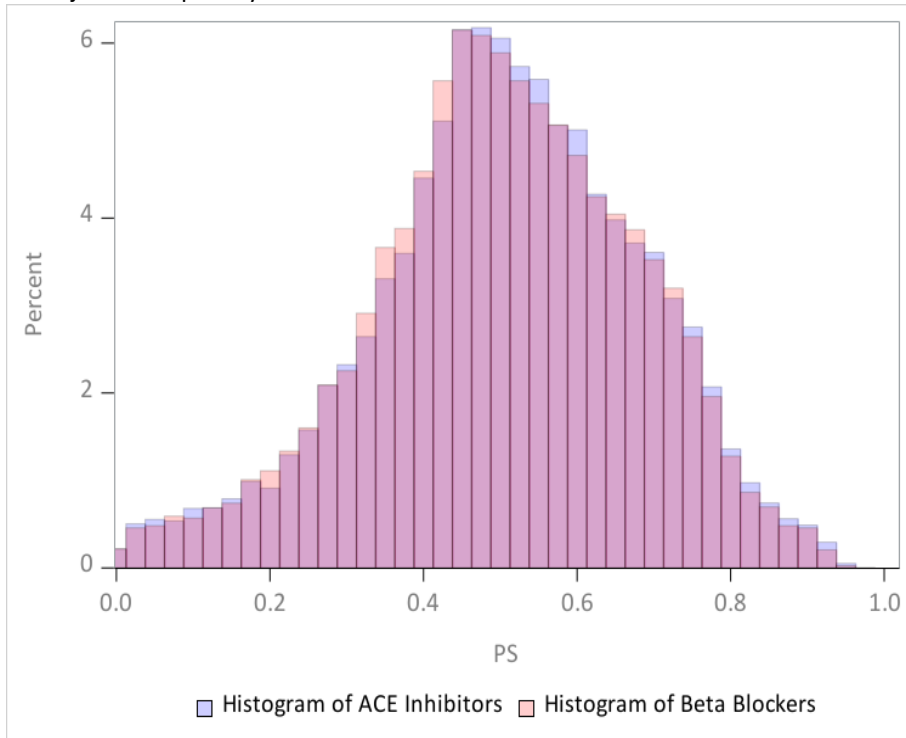


Figure 2b. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

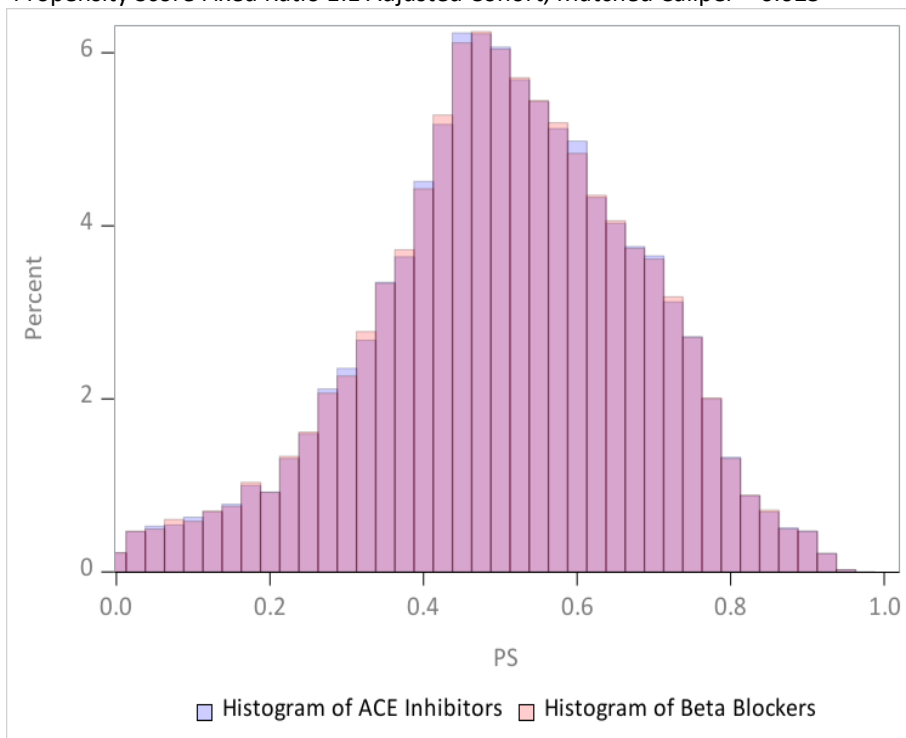
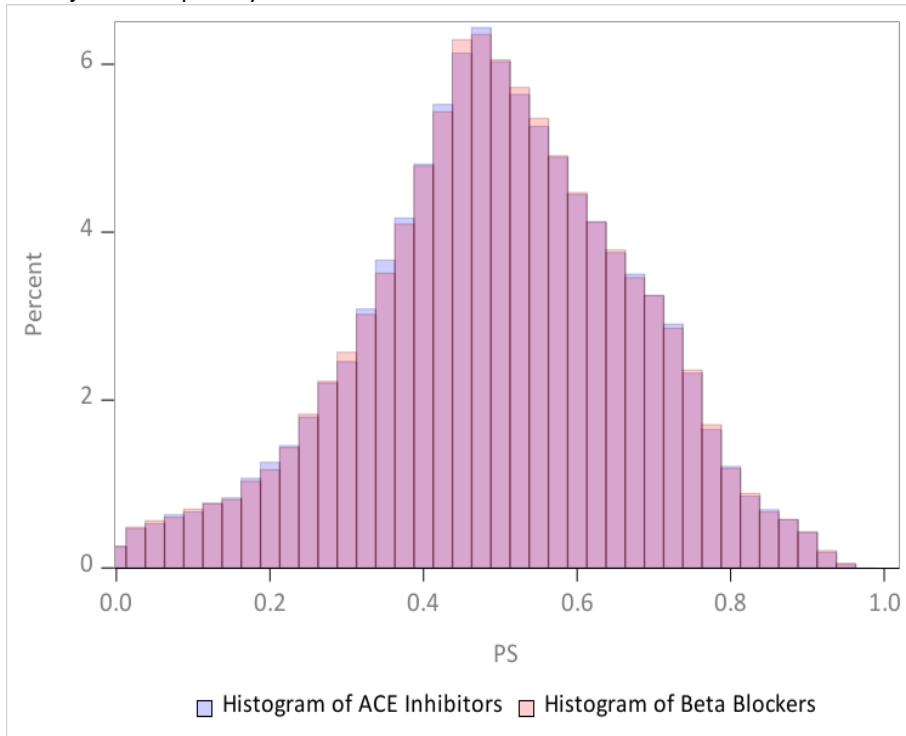


Figure 2c. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

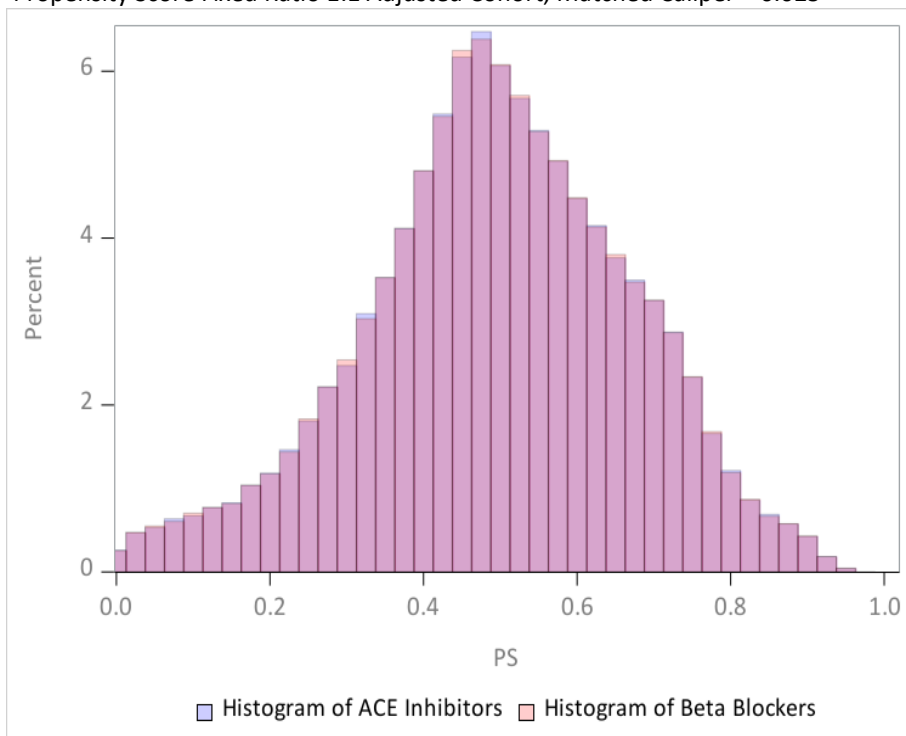
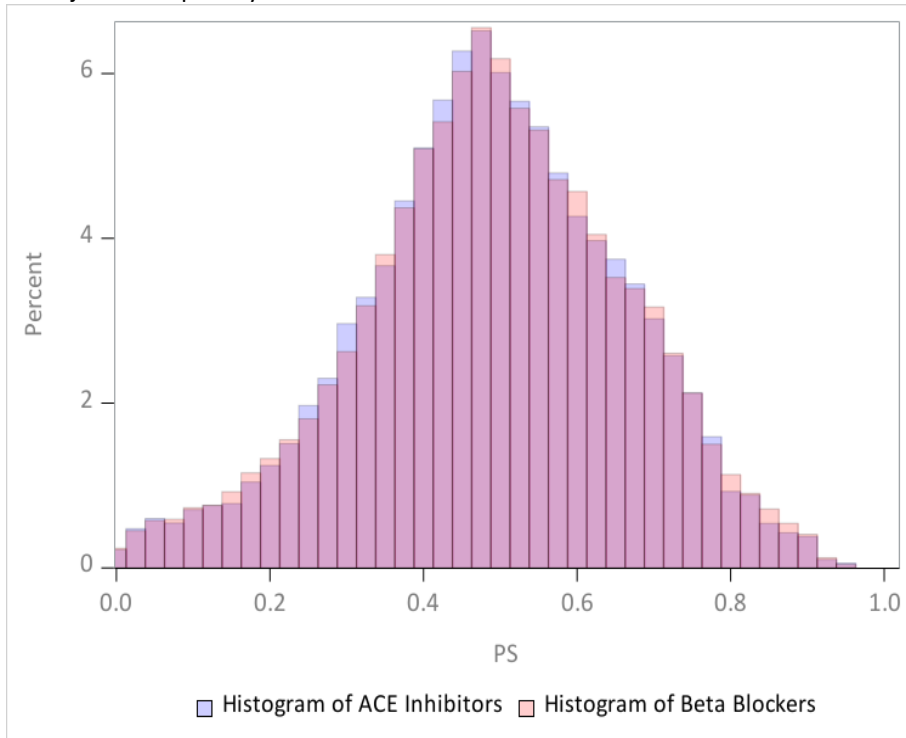


Figure 2d. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

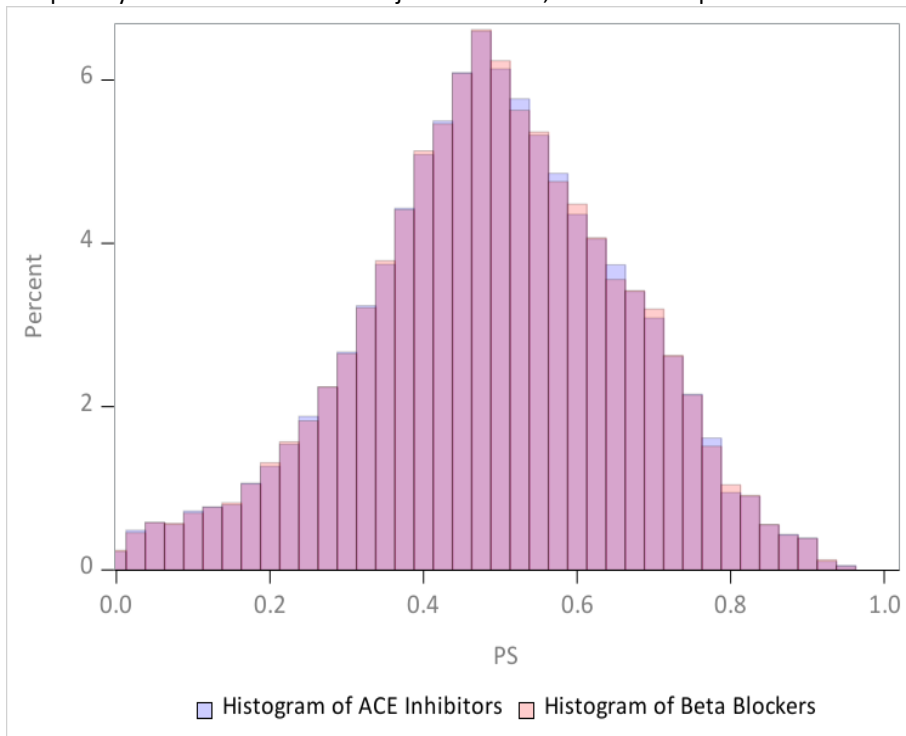
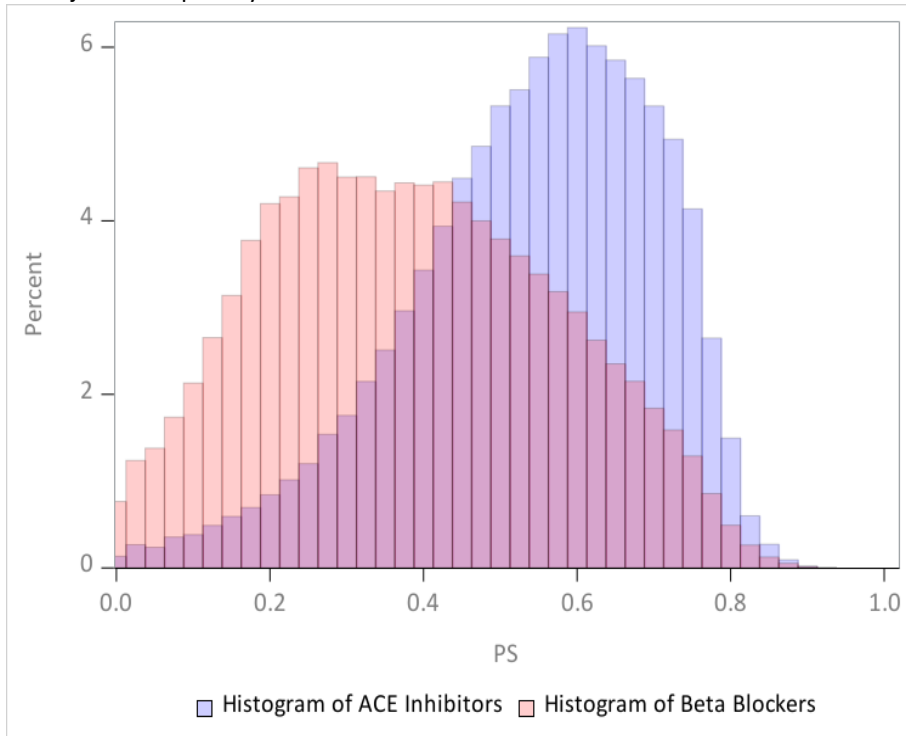


Figure 3a. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

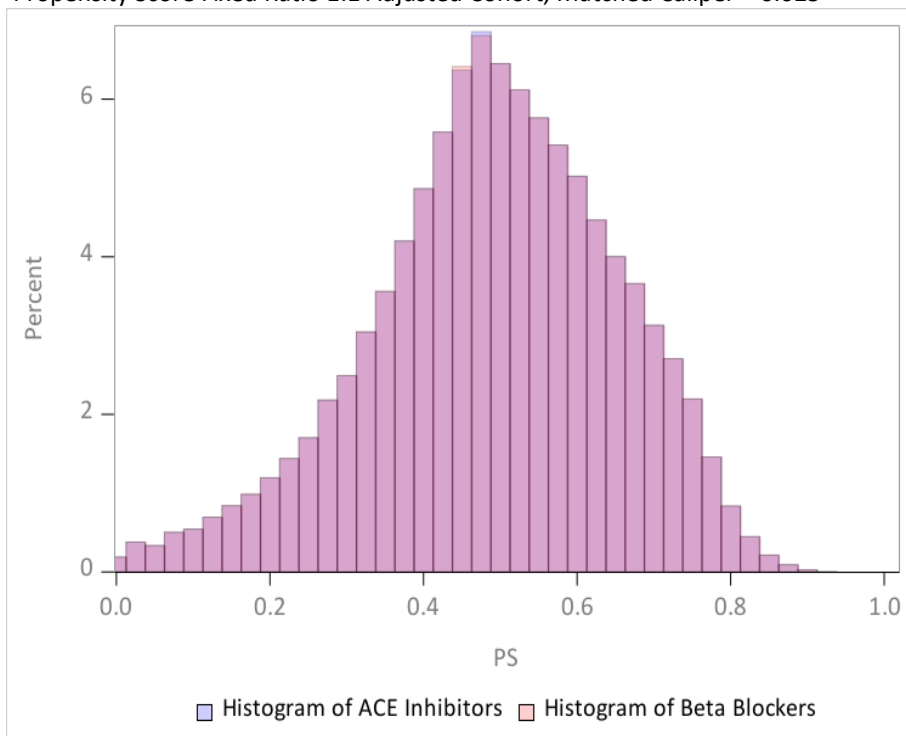
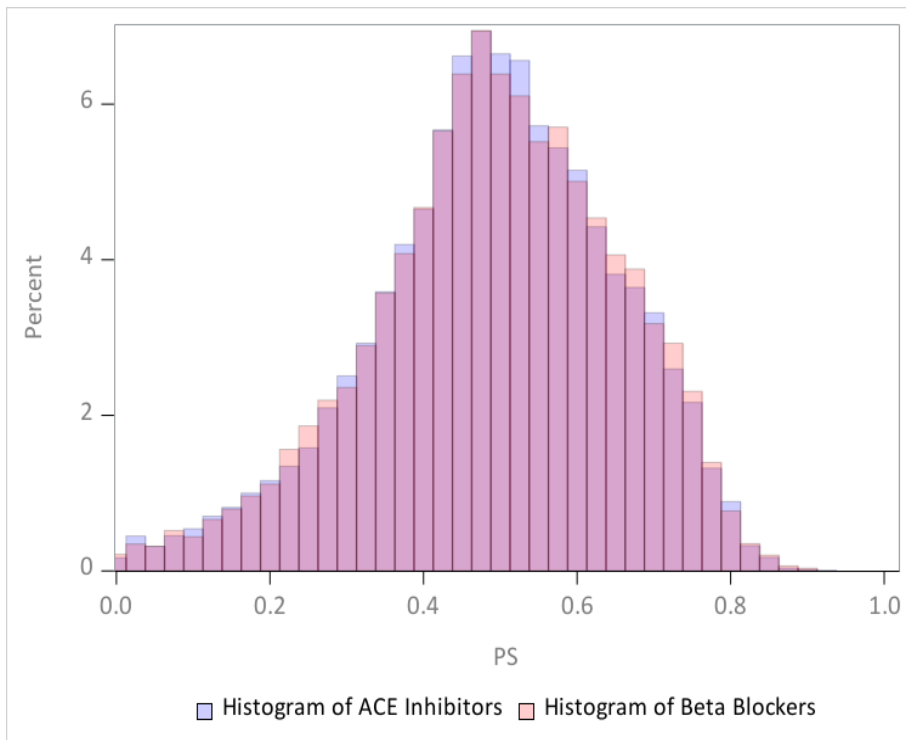


Figure 3b. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

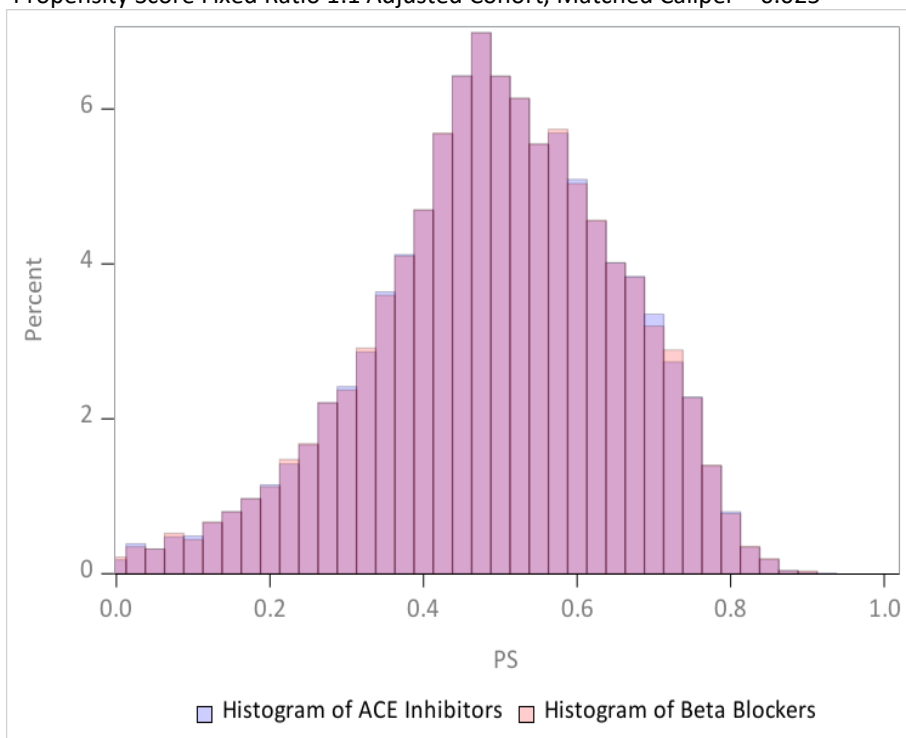
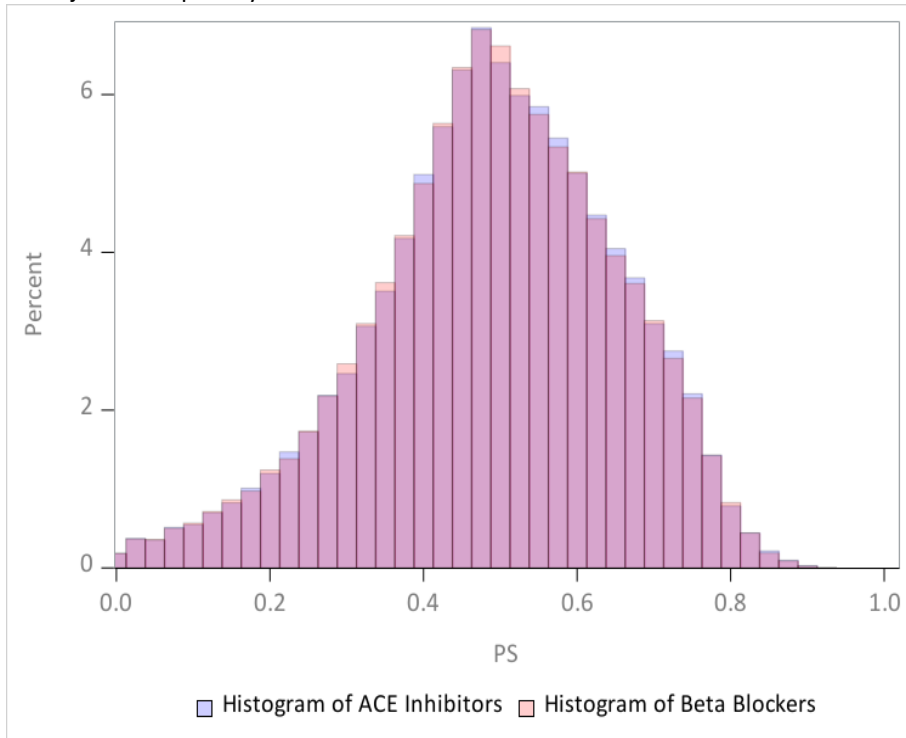


Figure 3c. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

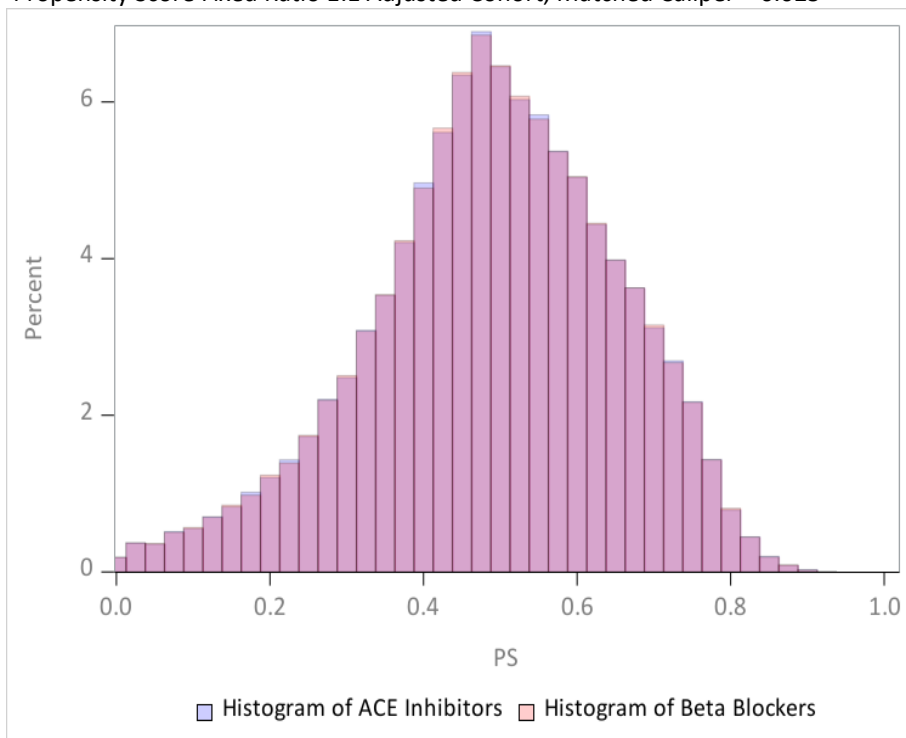
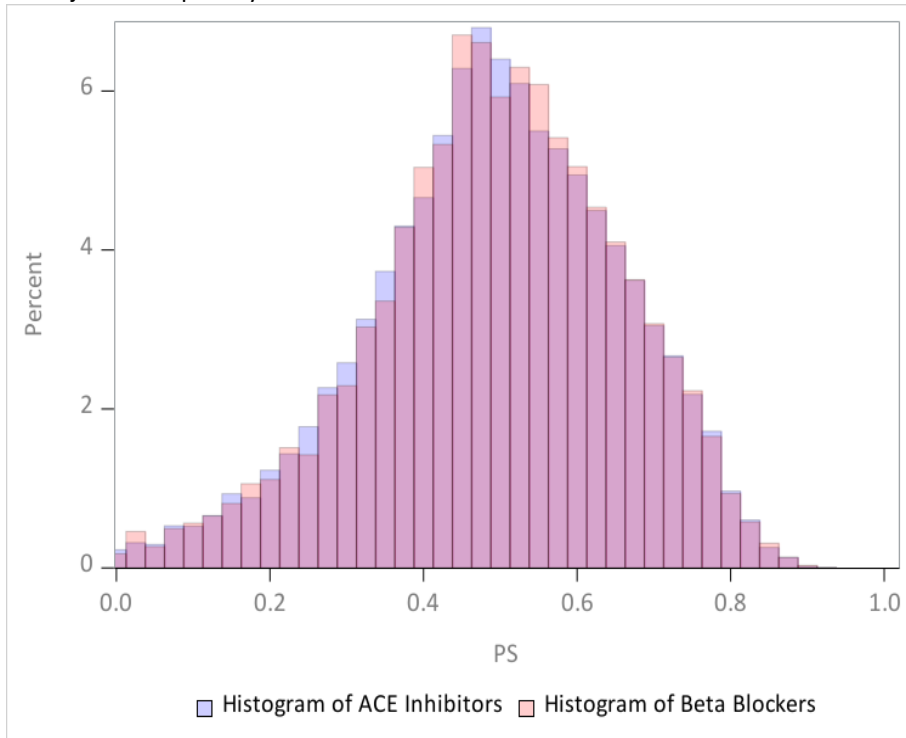


Figure 3d. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

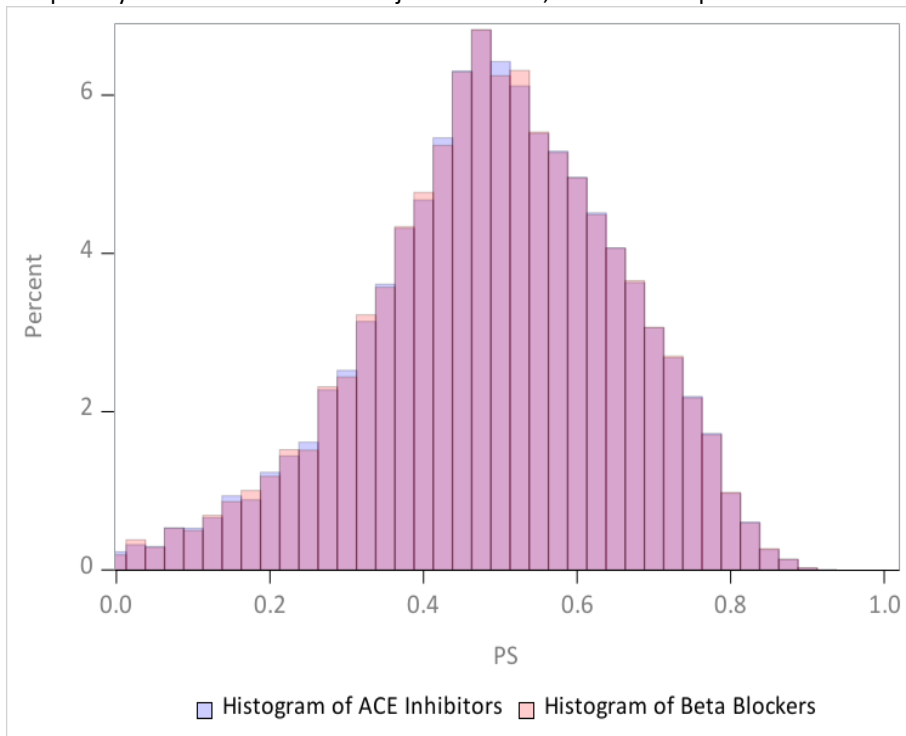
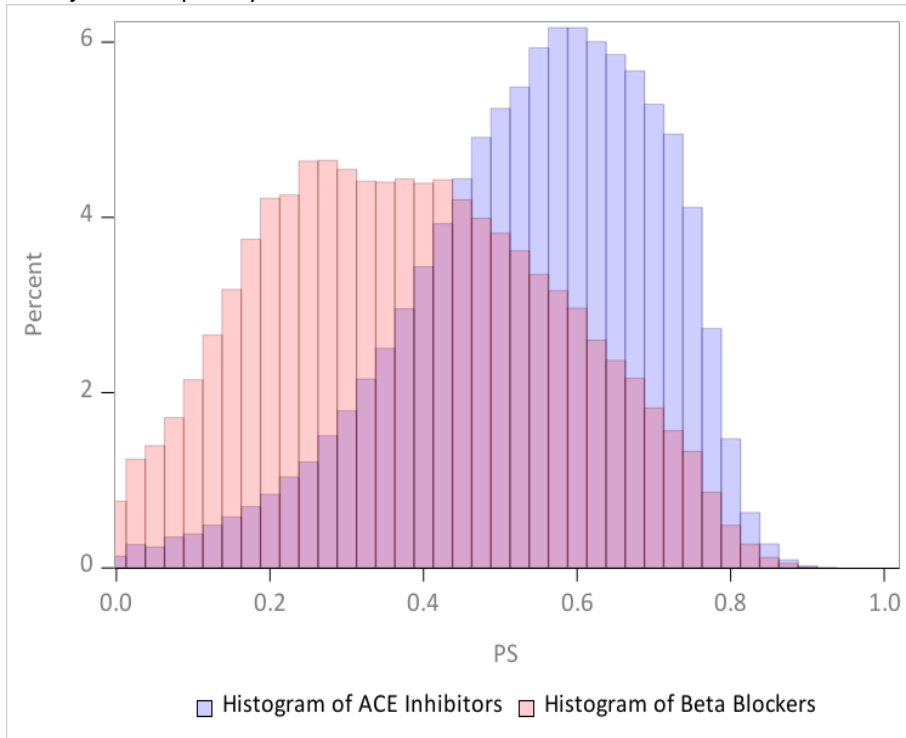


Figure 4a. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

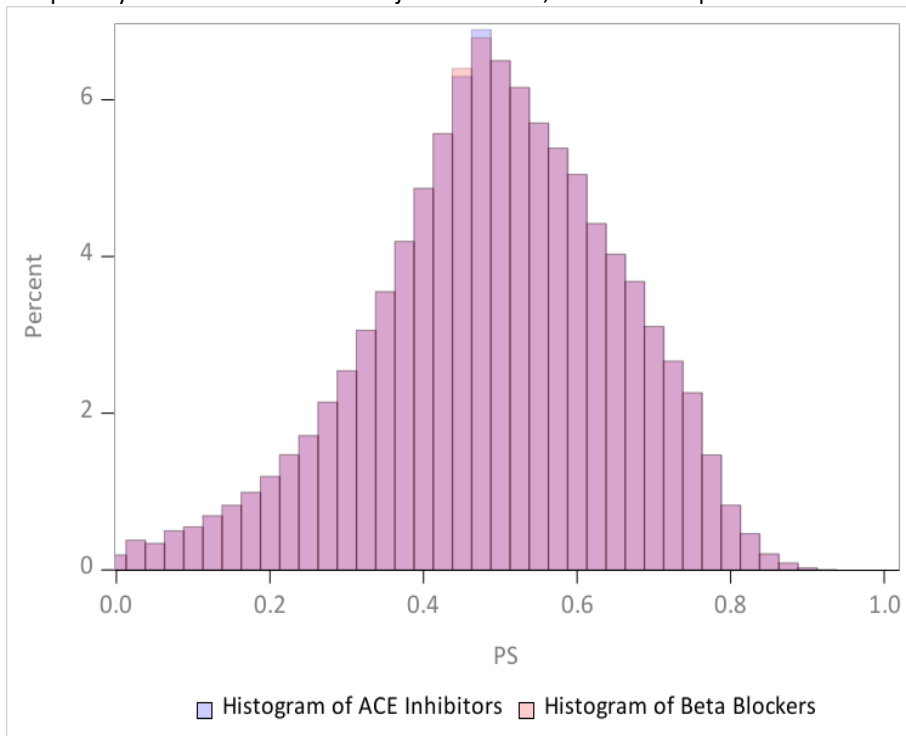
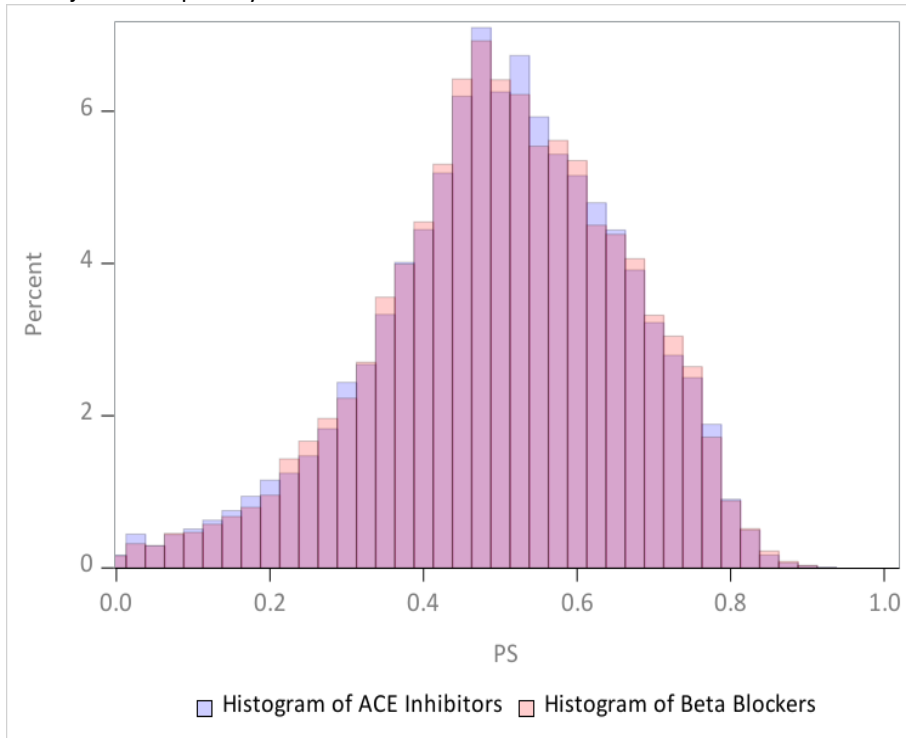


Figure 4b. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

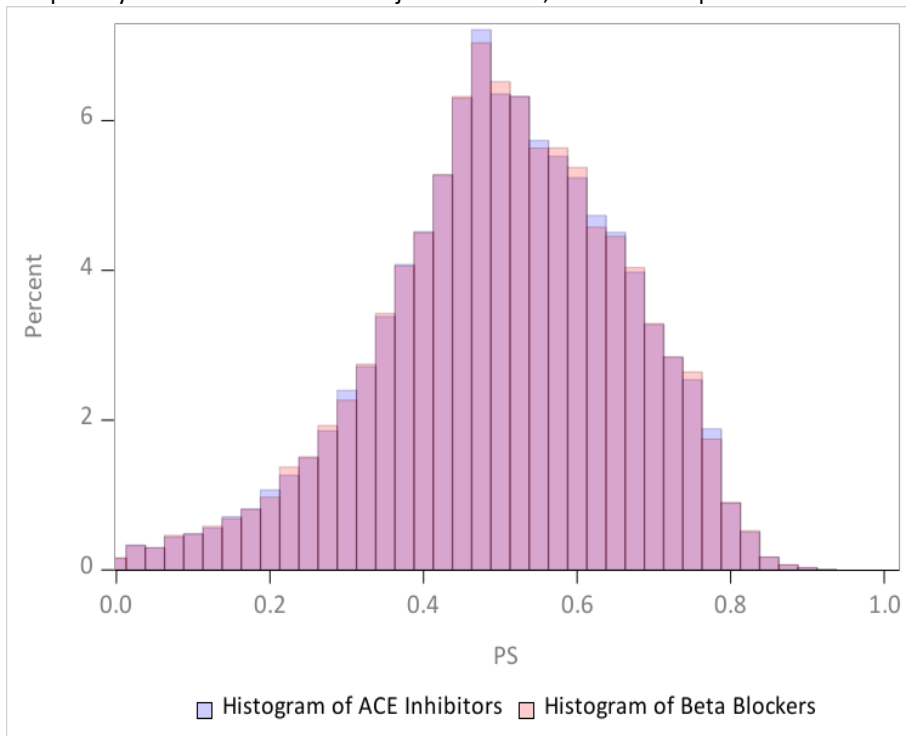
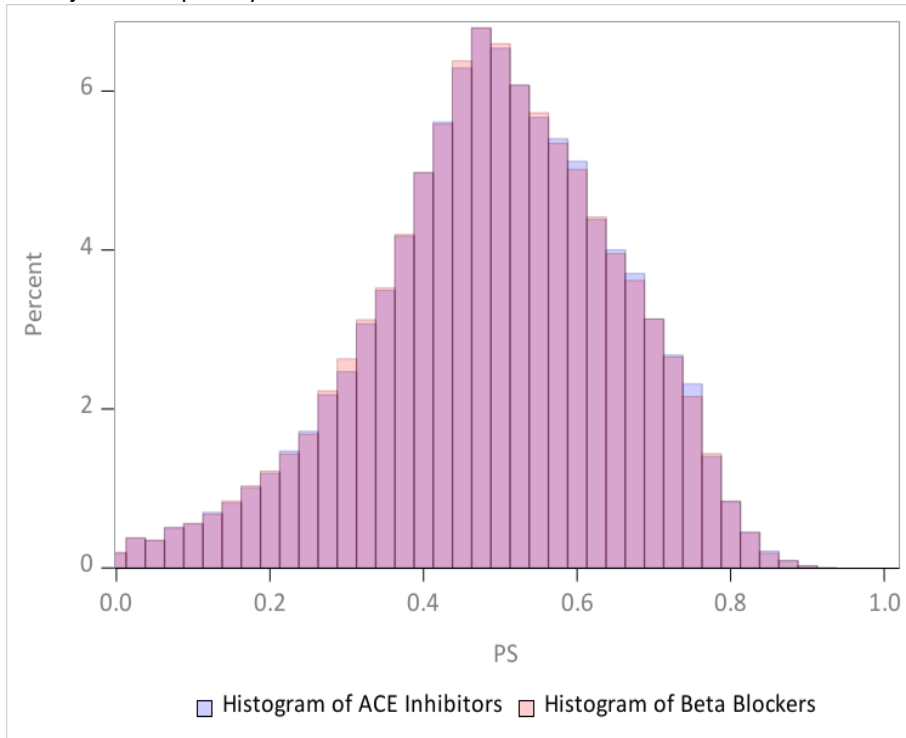


Figure 4c. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

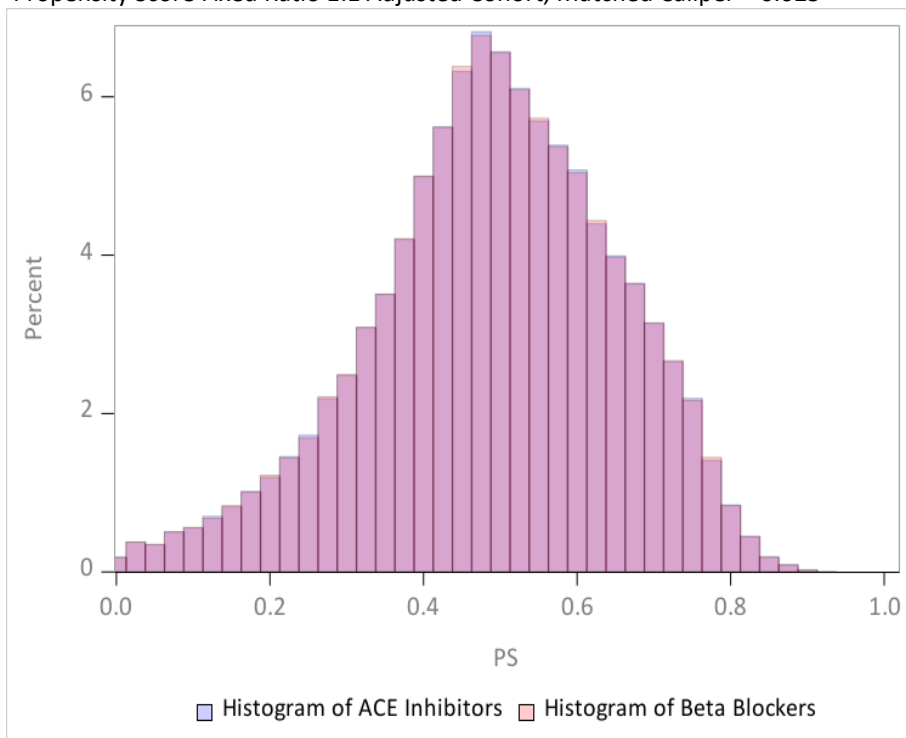
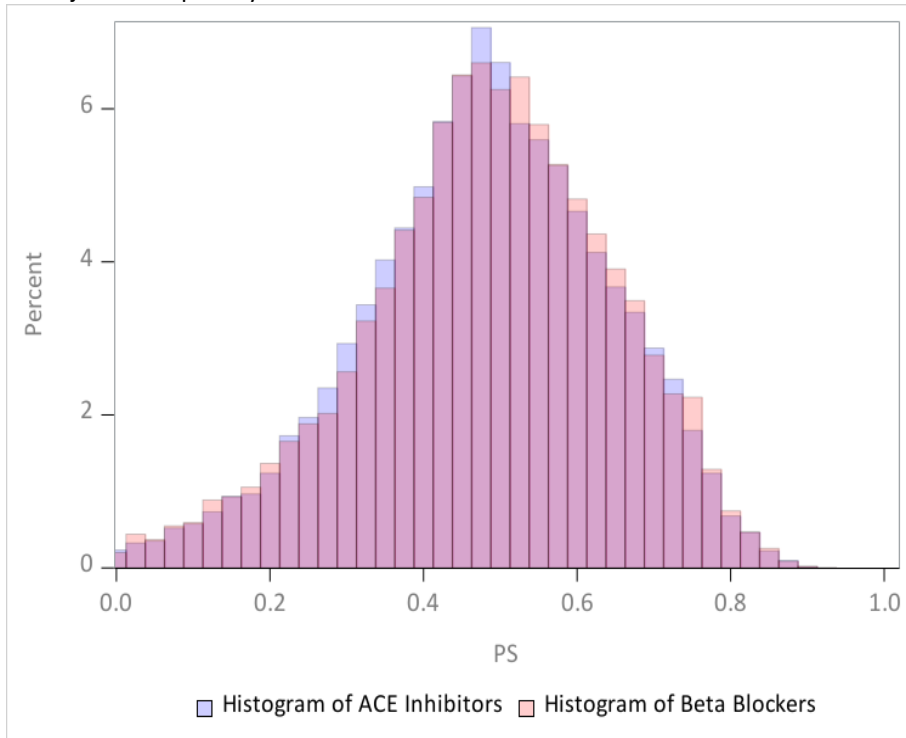


Figure 4d. Histograms Depicting Propensity Score Distributions Before and After Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.025

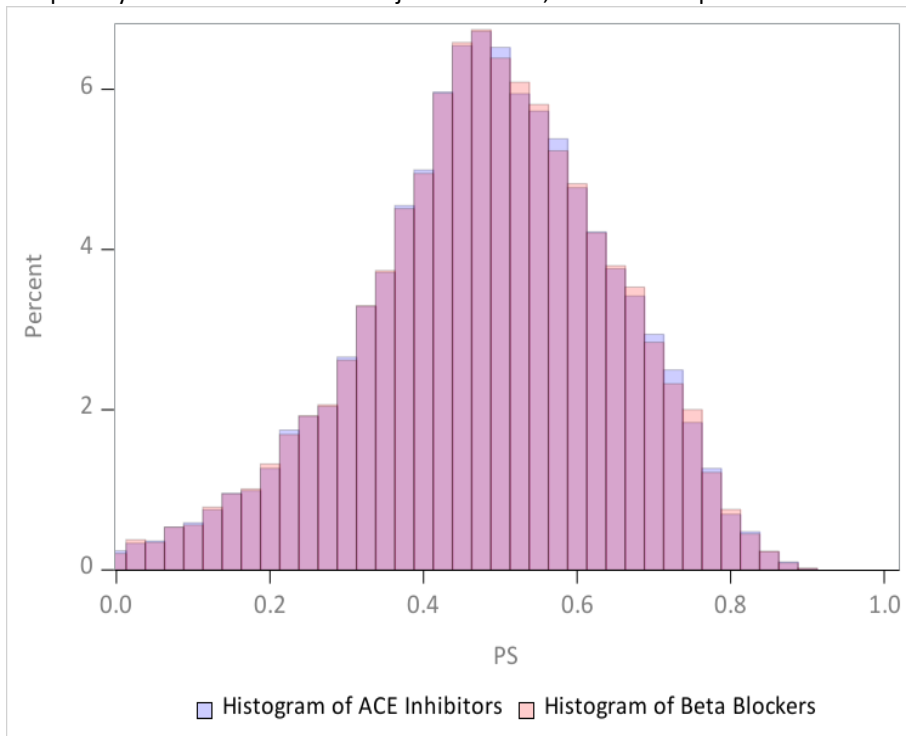


Figure 5a. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Unadjusted Propensity Score Distribution

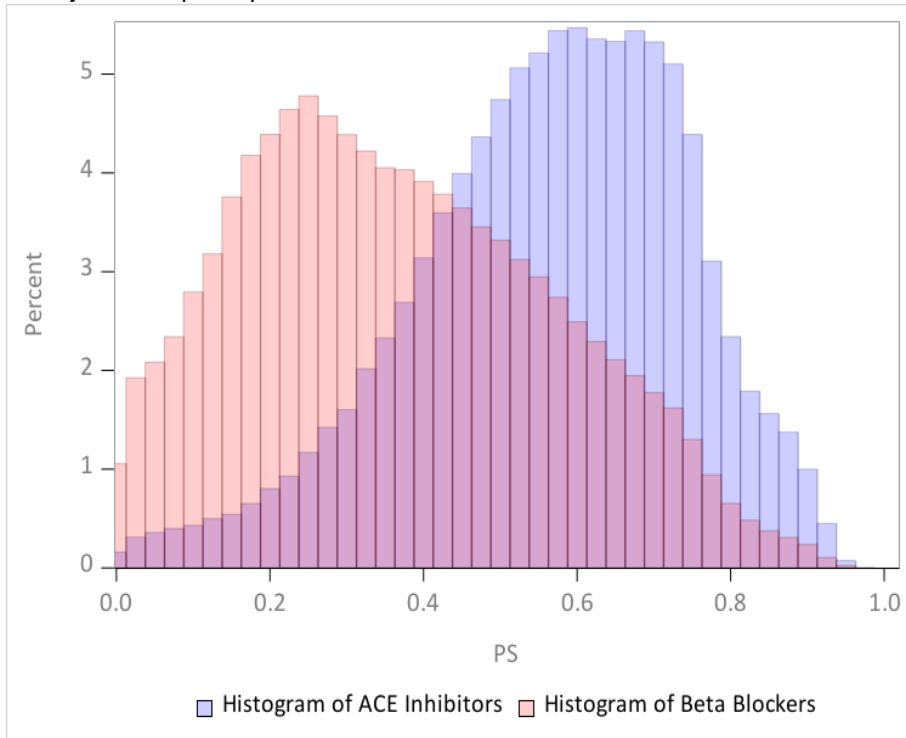


Figure 5b. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Unadjusted Propensity Score Distribution

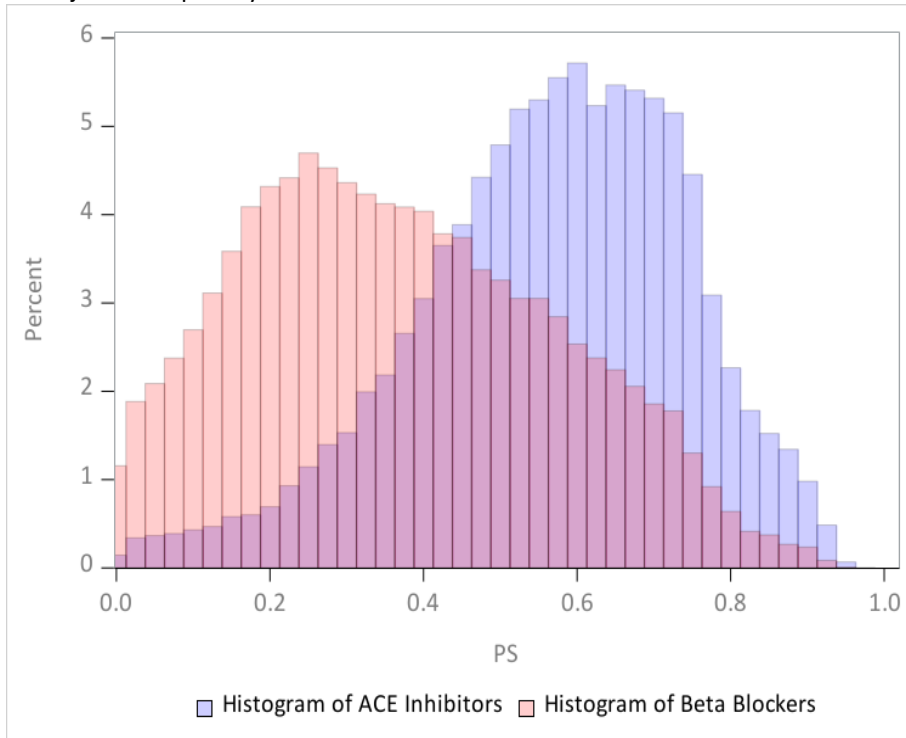


Figure 5c. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Unadjusted Propensity Score Distribution

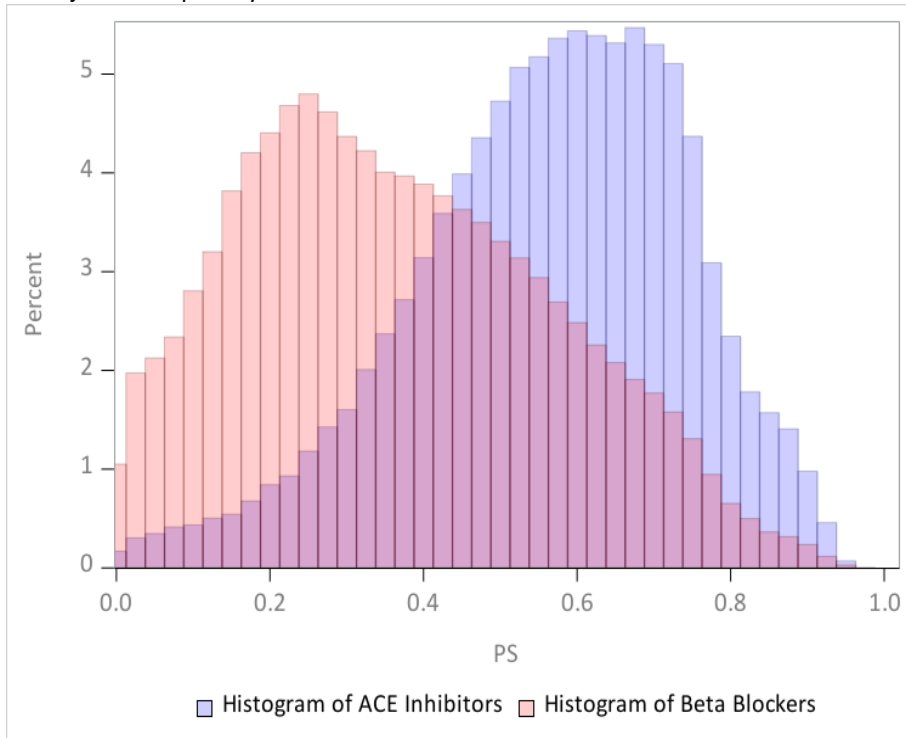


Figure 5d. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Unadjusted Propensity Score Distribution

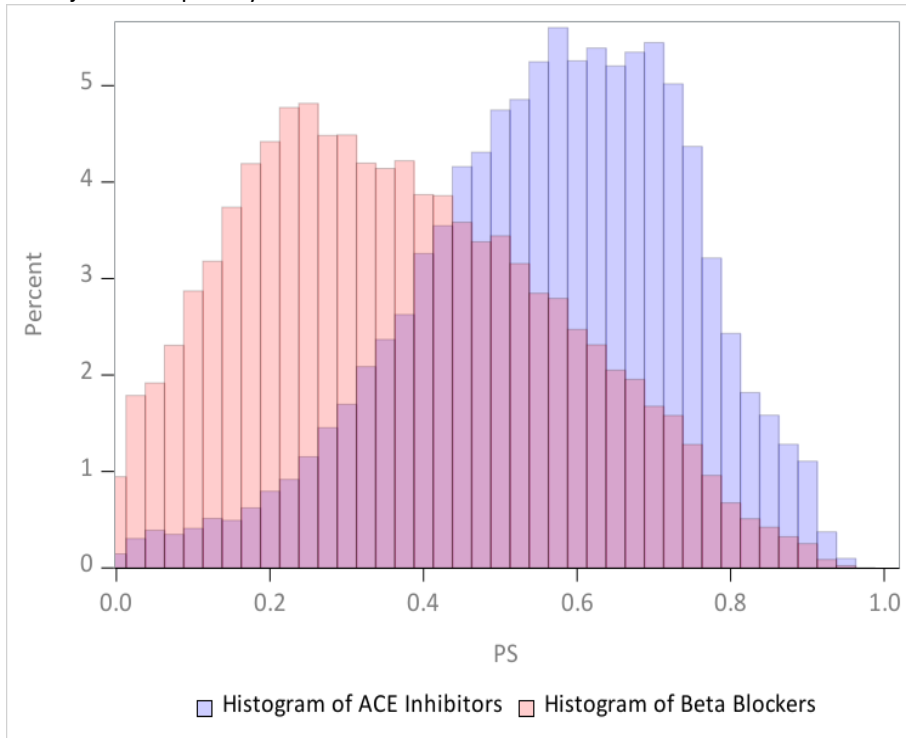


Figure 6a. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Unadjusted Propensity Score Distribution

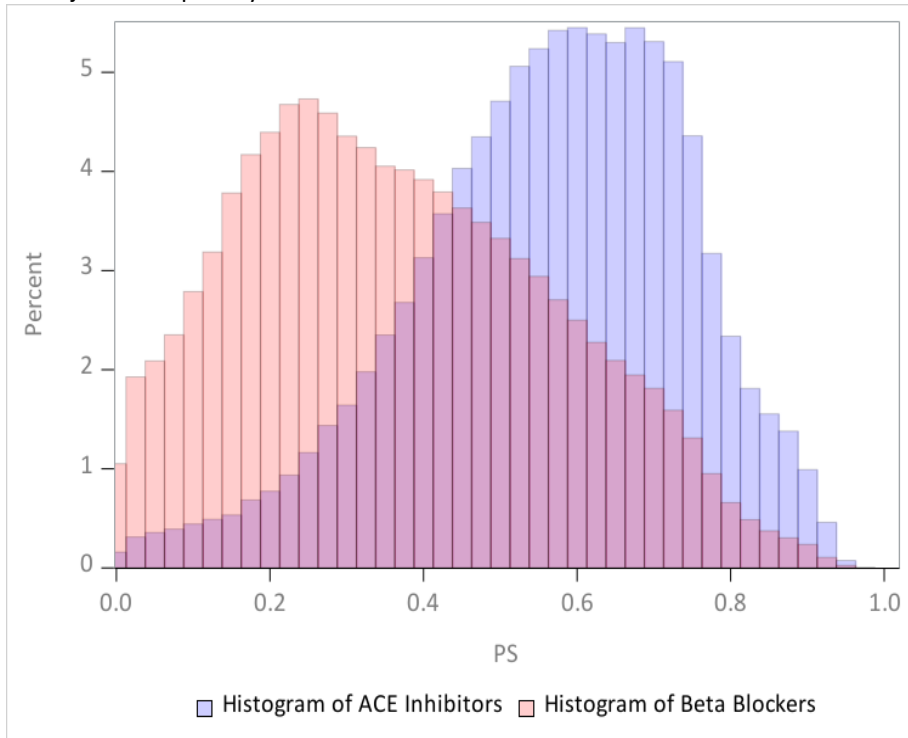


Figure 6b. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Unadjusted Propensity Score Distribution

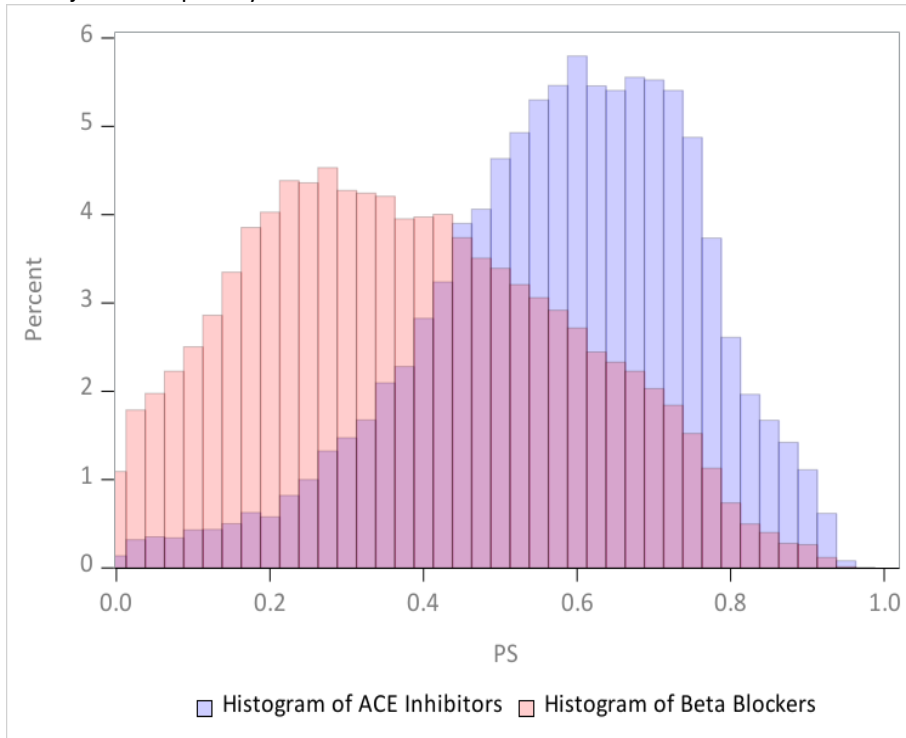


Figure 6c. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Unadjusted Propensity Score Distribution

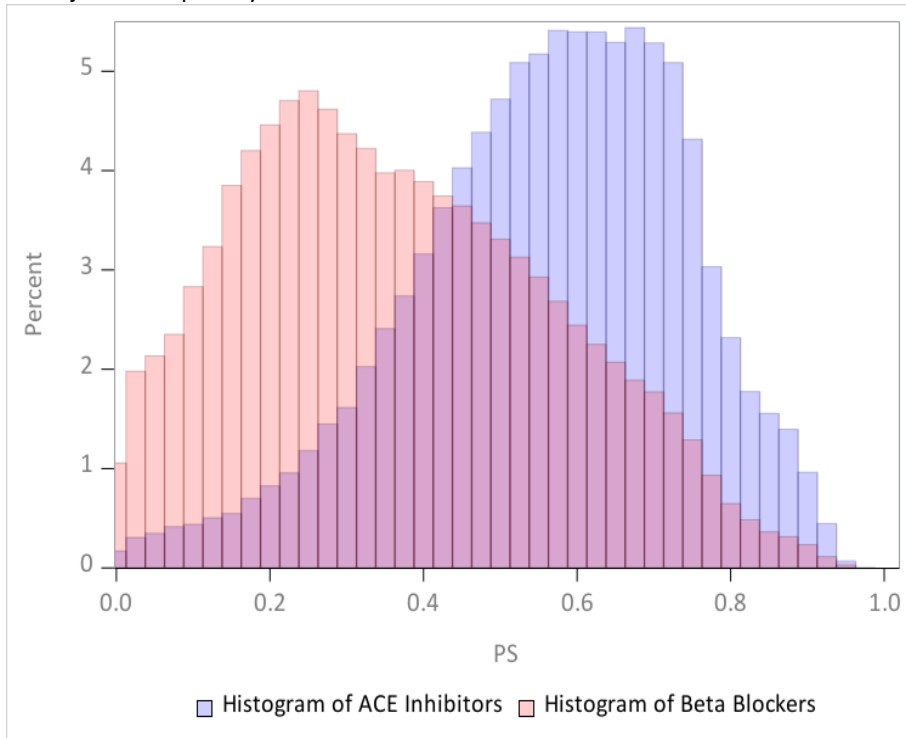


Figure 6d. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Unadjusted Propensity Score Distribution

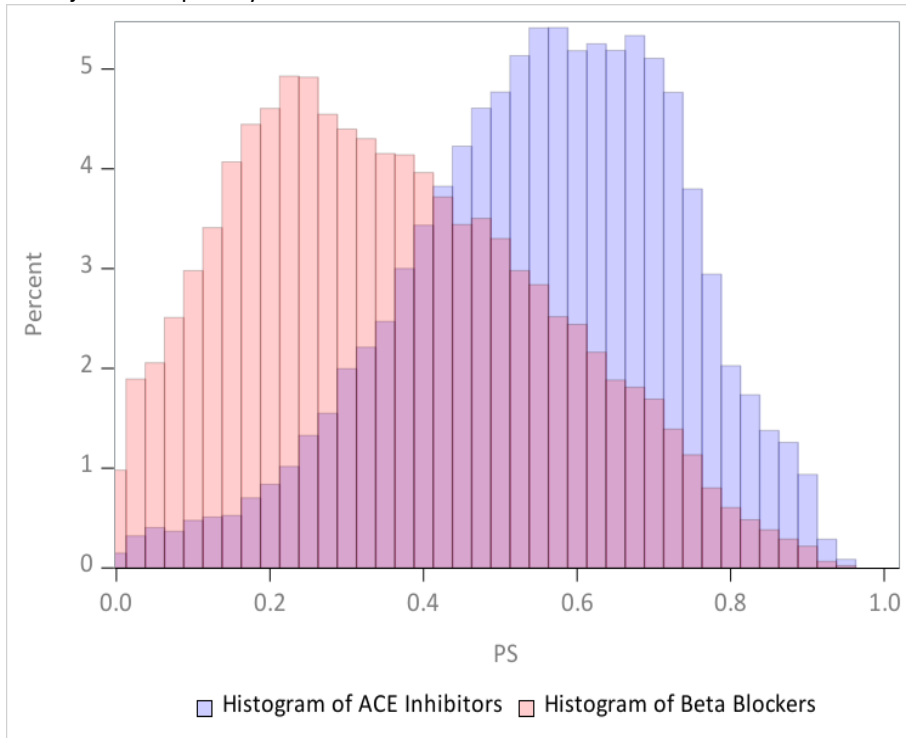


Figure 7a. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Unadjusted Propensity Score Distribution

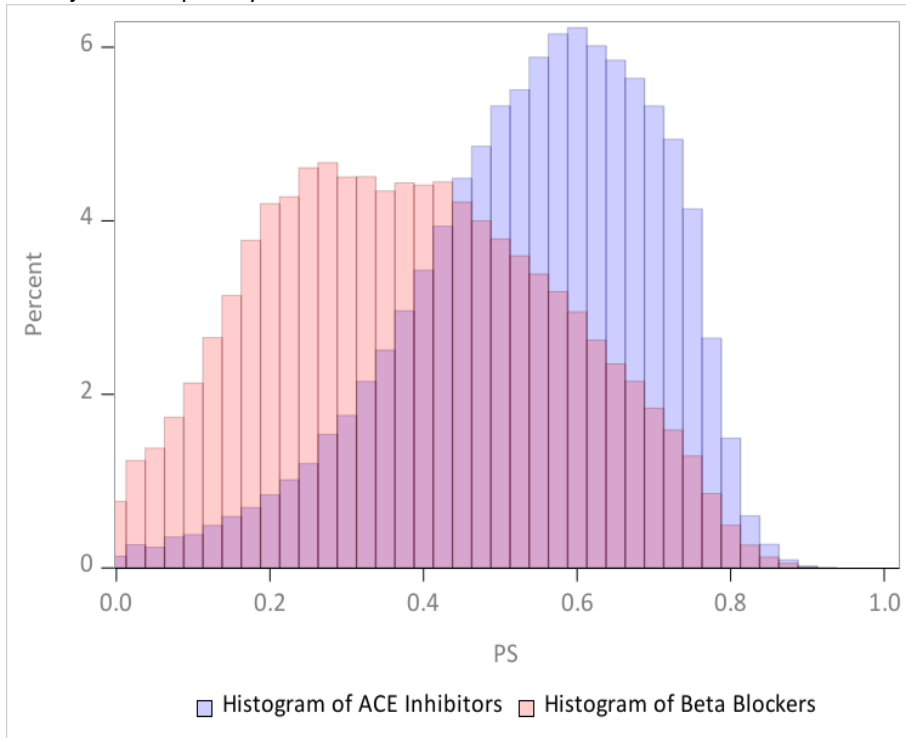


Figure 7b. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Unadjusted Propensity Score Distribution

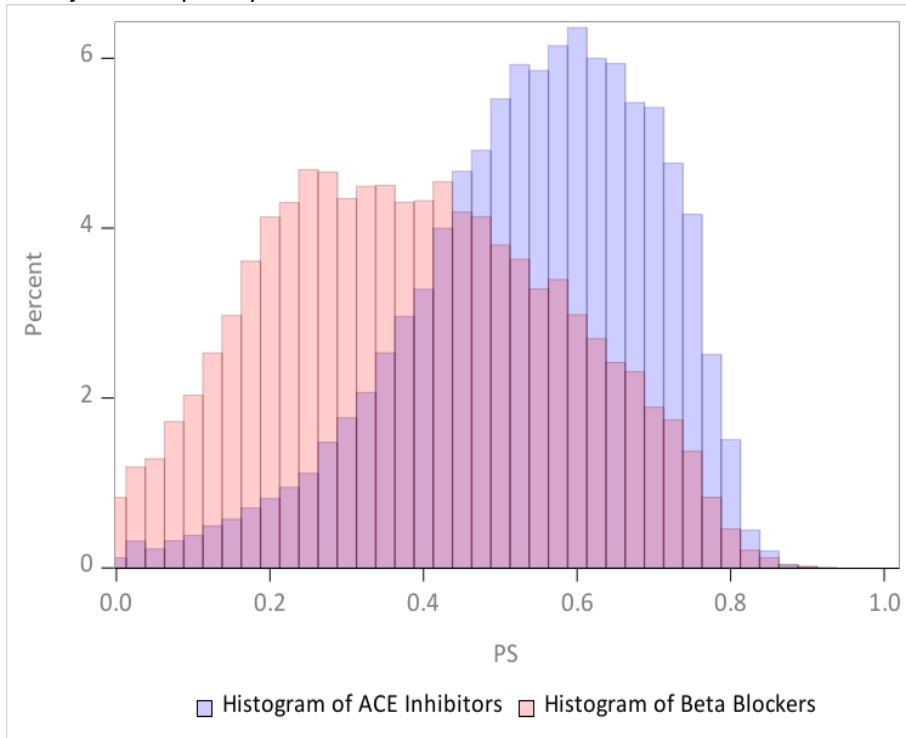


Figure 7c. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Unadjusted Propensity Score Distribution

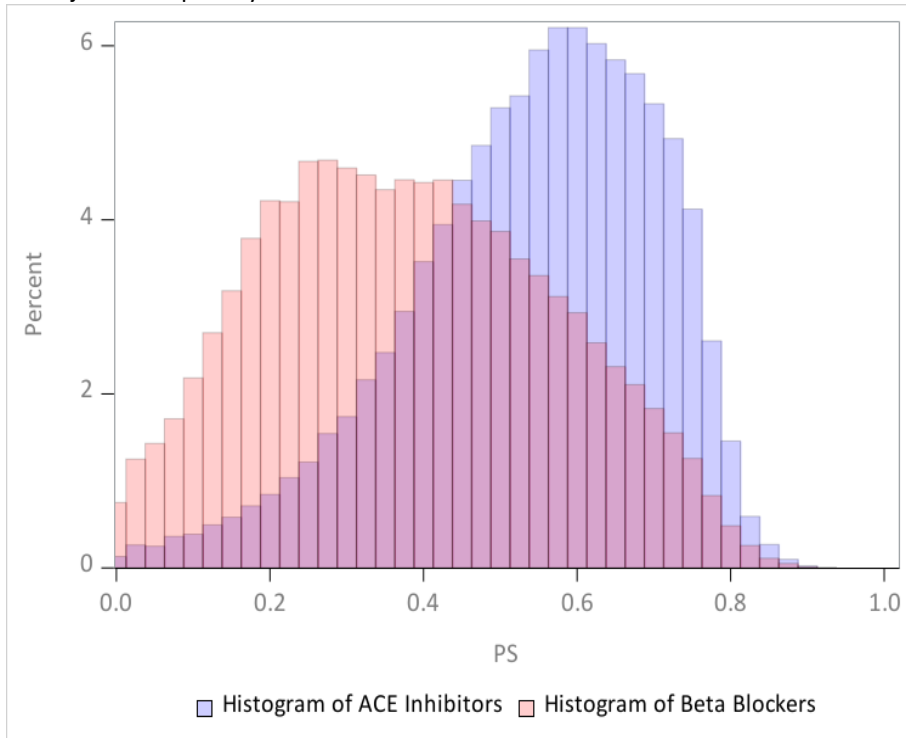


Figure 7d. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

Unadjusted Propensity Score Distribution

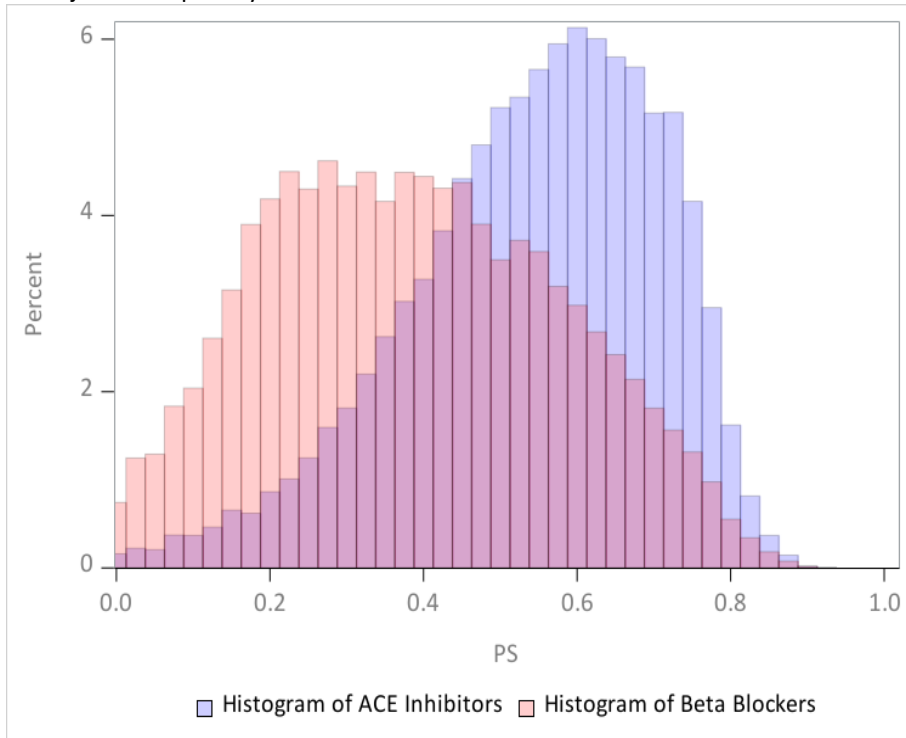


Figure 8a. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

Unadjusted Propensity Score Distribution

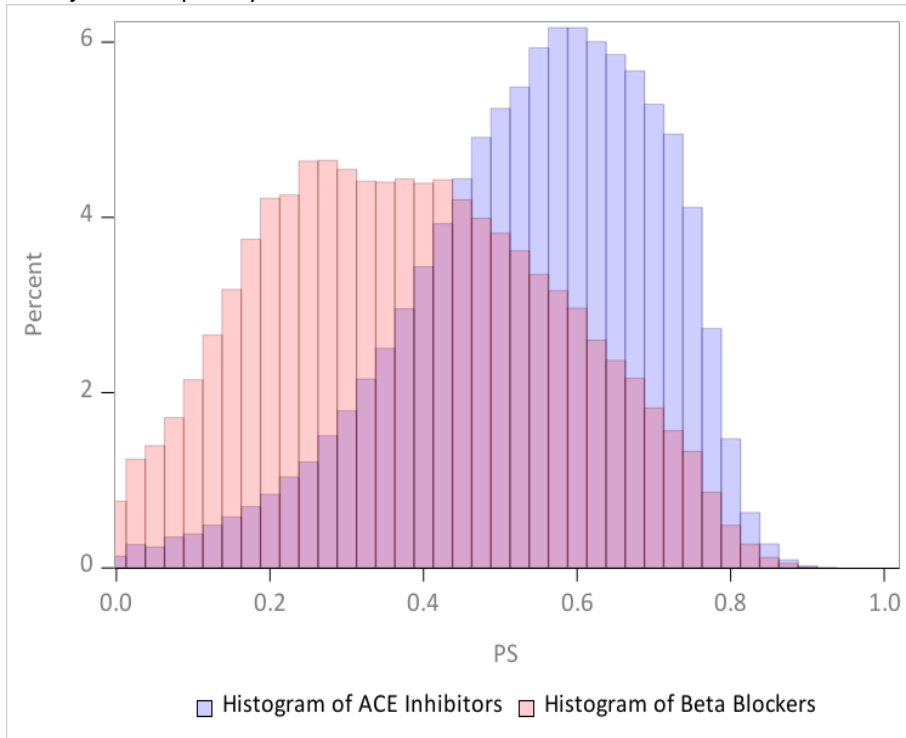


Figure 8b. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

Unadjusted Propensity Score Distribution

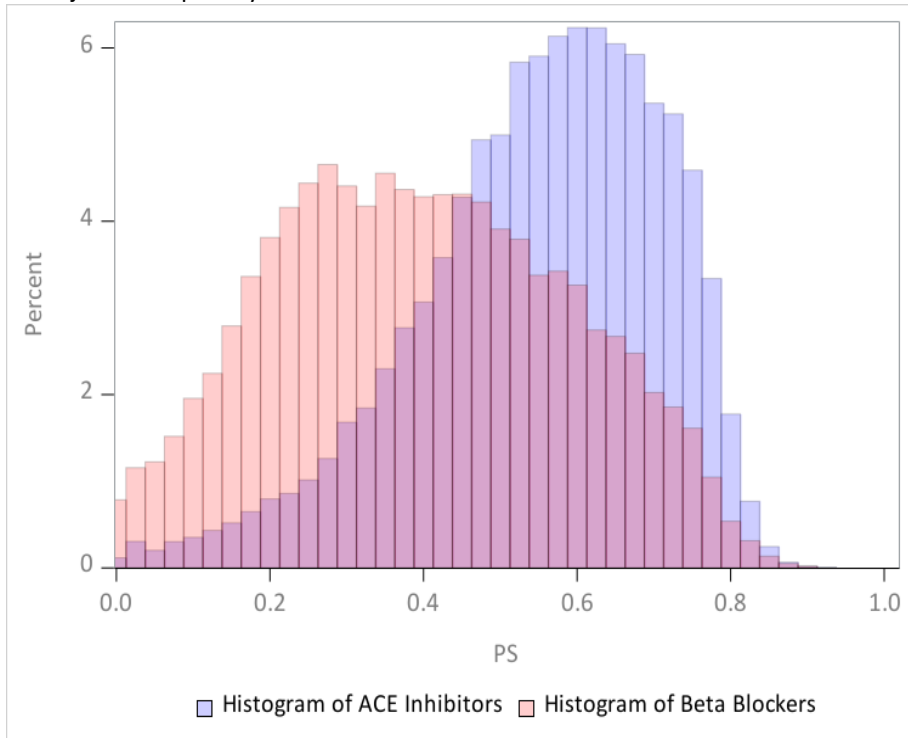


Figure 8c. Histograms Depicting Propensity Score Distributions Before Adjustment for New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

Unadjusted Propensity Score Distribution

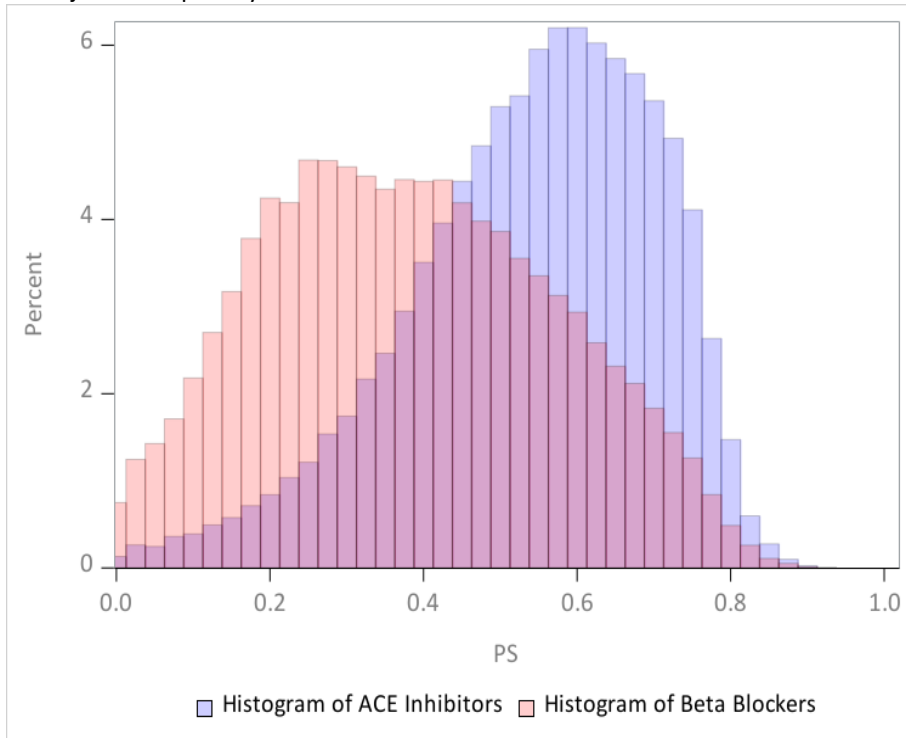


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Unadjusted Propensity Score Distribution

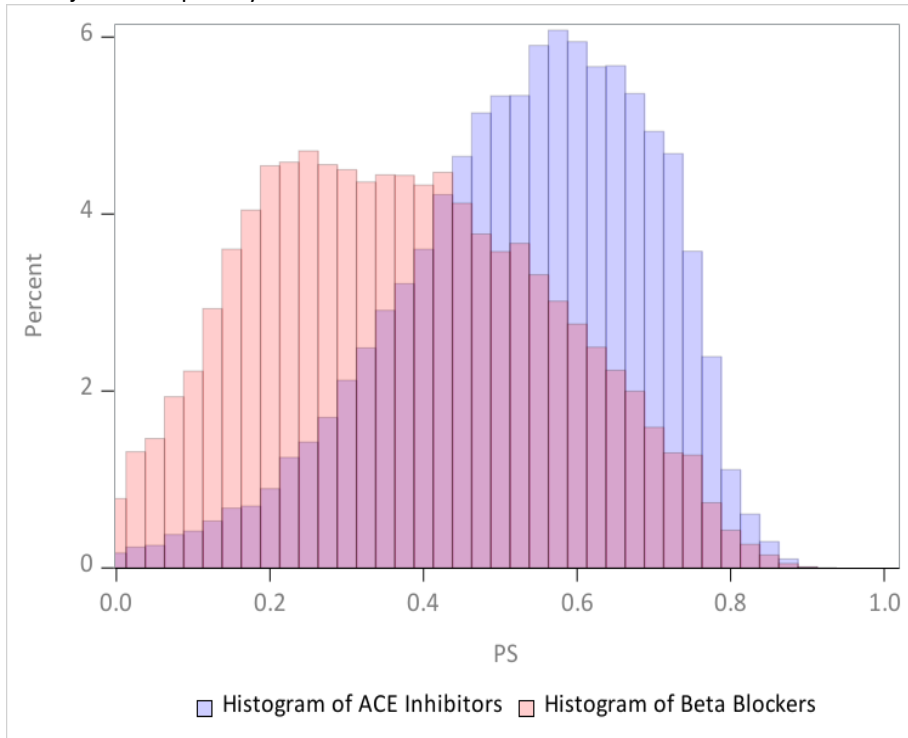
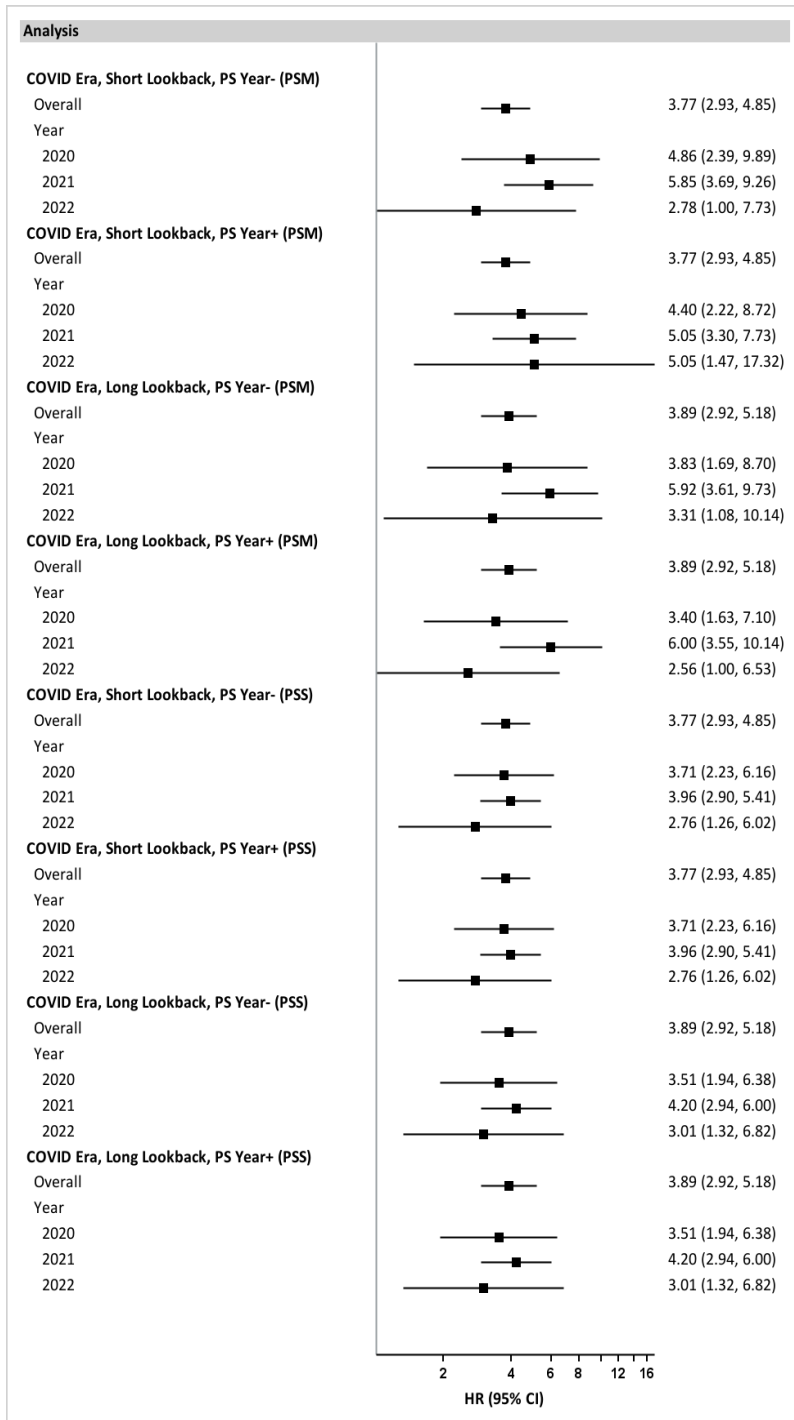


Figure 9a. Forest Plot of Hazard Ratios (HR) and 95% Confidence Intervals (CI) for Site-Adjusted Analyses in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022



Notes:

COVID Era: Pandemic Era (September 10, 2020 to April 1, 2022)

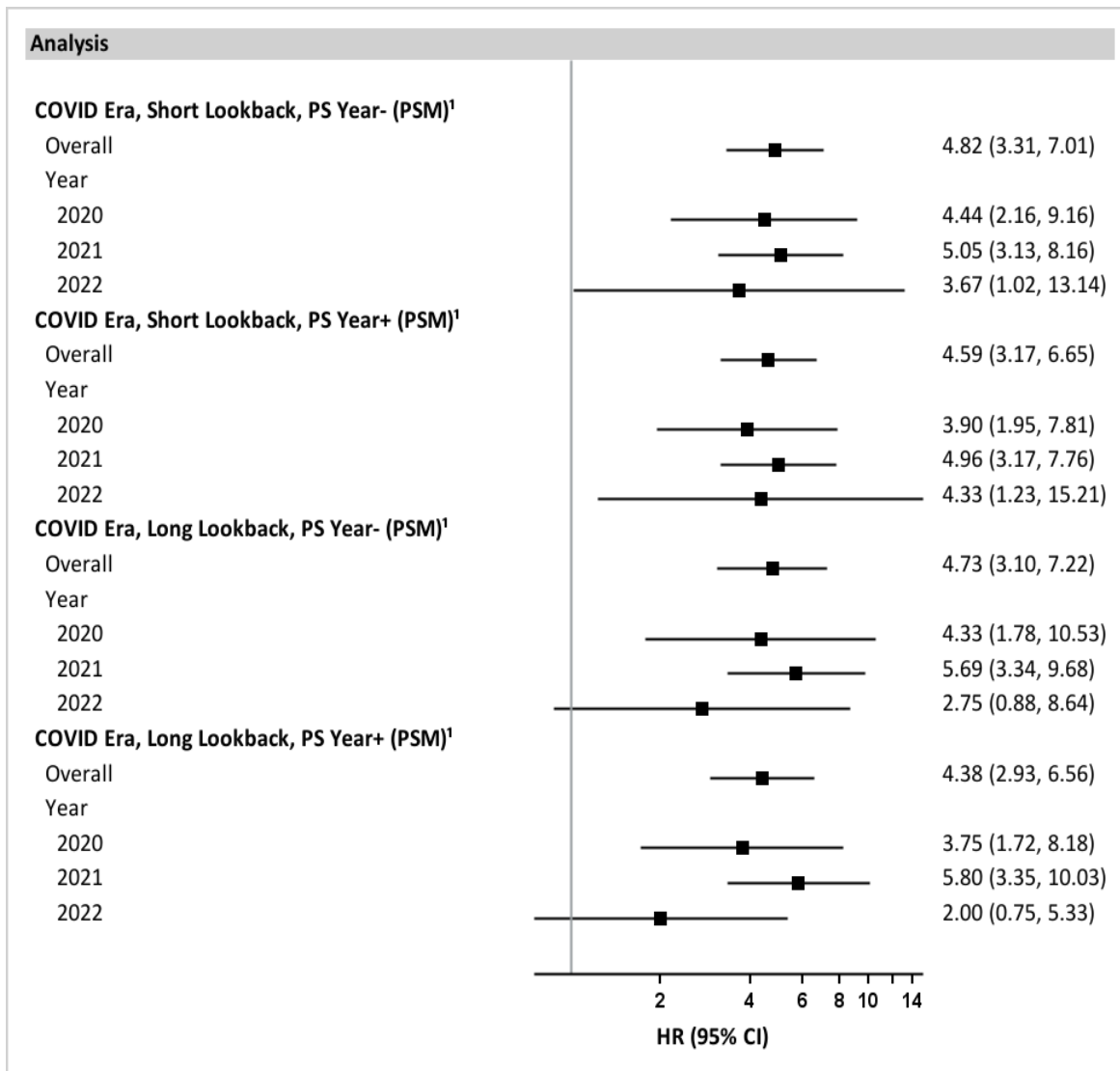
PS Year-: Propensity Score Model without Year

PS Year+: Propensity Score Model with Year

PSM: Propensity Score Matching

PSS: Propensity Score Stratification

Figure 9b. Forest Plot of Hazard Ratios (HR) and 95% Confidence Intervals (CI) for Propensity Score Matched Conditional Analyses in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022



Notes:

¹Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper=0.025

COVID Era: Pandemic Era (September 10, 2020 to April 1, 2022)

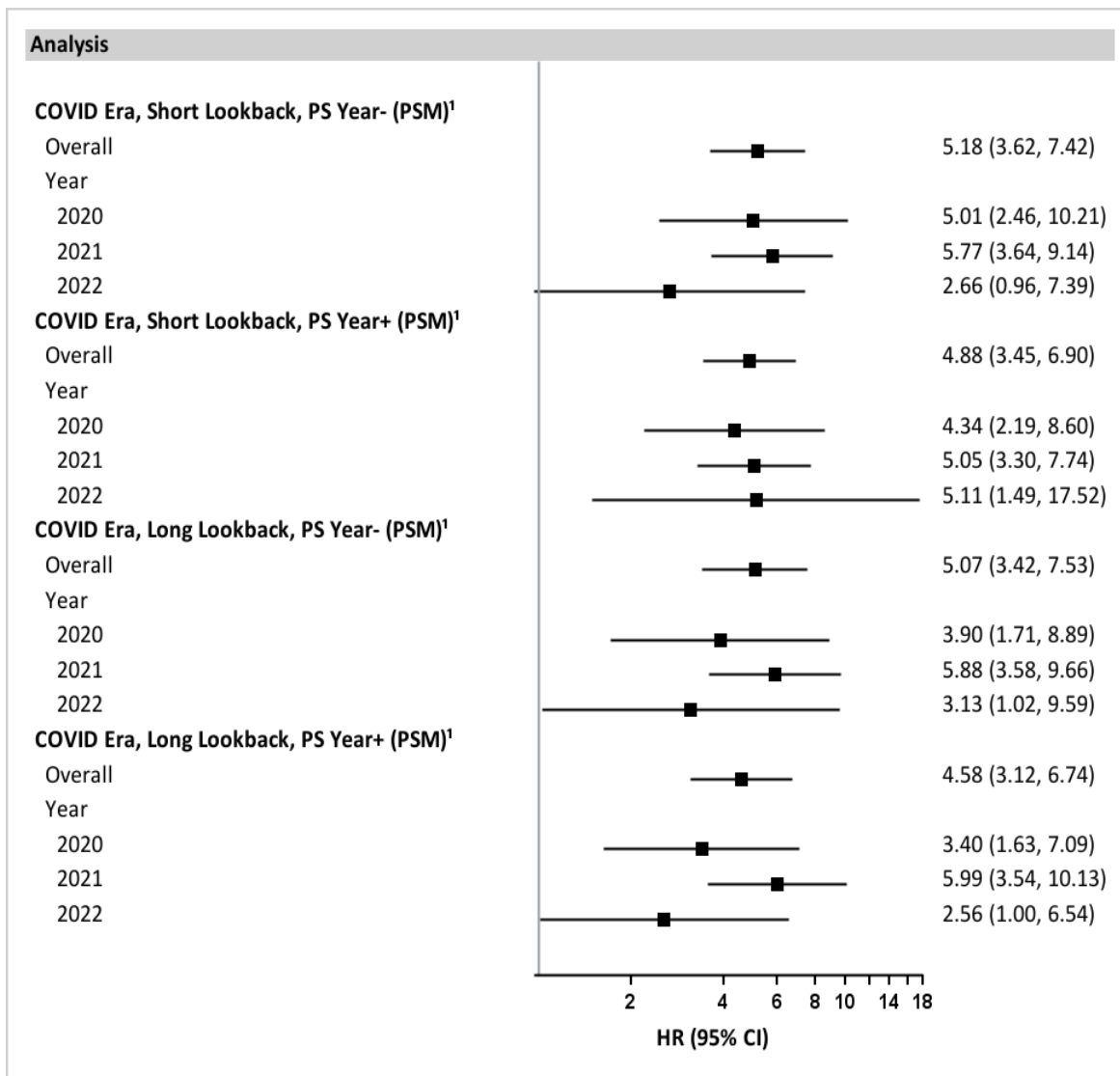
PS Year-: Propensity Score Model without Year

PS Year+: Propensity Score Model with Year

PSM: Propensity Score Matching

PSS: Propensity Score Stratification

Figure 9c. Forest Plot of Hazard Ratios (HR) and 95% Confidence Intervals (CI) for Propensity Score Matched Unconditional Analyses in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022



Notes:

¹Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper=0.025

COVID Era: Pandemic Era (September 10, 2020 to April 1, 2022)

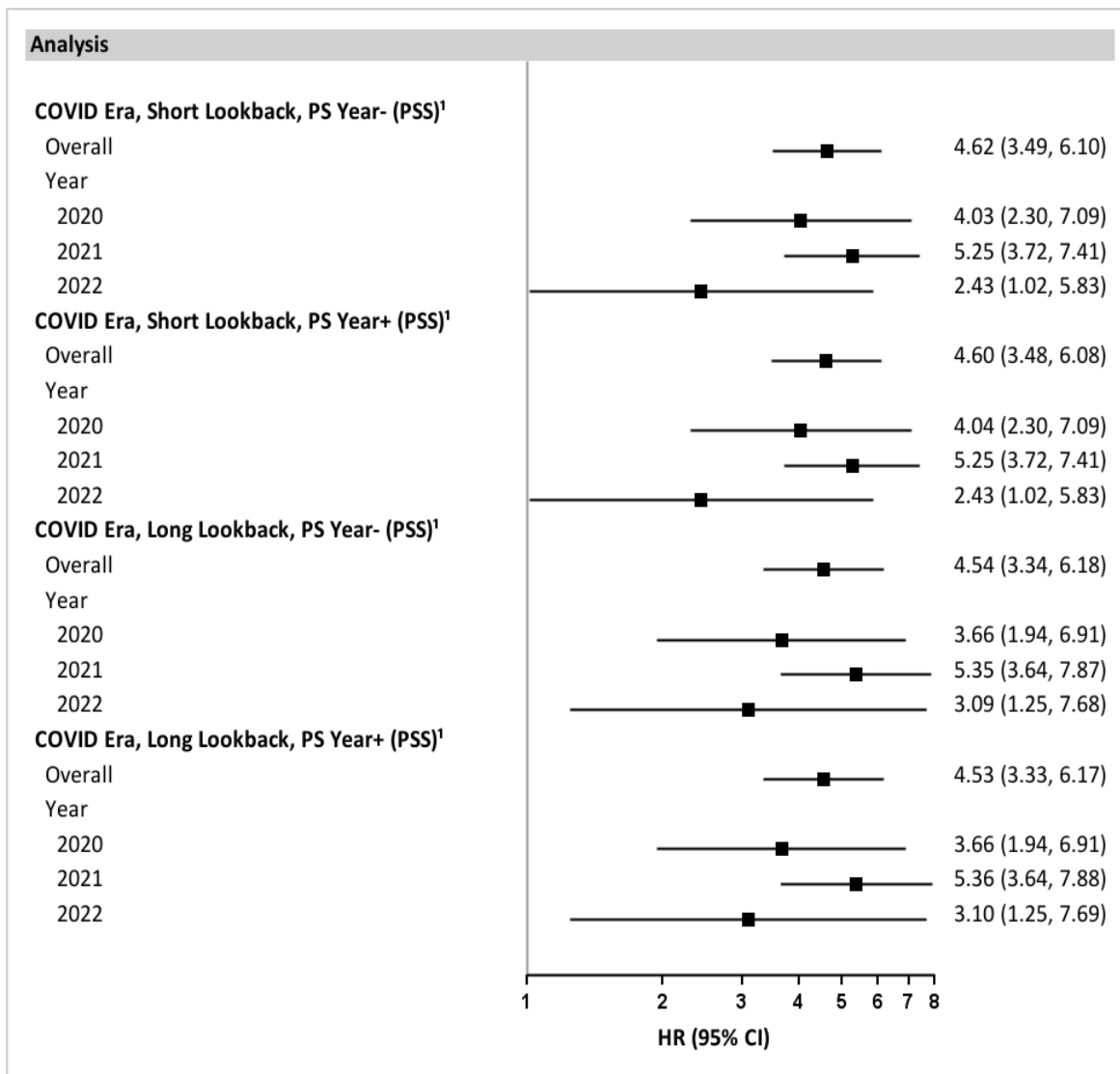
PS Year-: Propensity Score Model without Year

PS Year+: Propensity Score Model with Year

PSM: Propensity Score Matching

PSS: Propensity Score Stratification

Figure 9d. Forest Plot of Hazard Ratios (HR) and 95% Confidence Intervals (CI) for Propensity Score Stratified Analyses in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022



Notes:

¹Percentiles: 5

COVID Era: Pandemic Era (September 10, 2020 to April 1, 2022)

PS Year-: Propensity Score Model without Year

PS Year+: Propensity Score Model with Year

PSM: Propensity Score Matching

PSS: Propensity Score Stratification

Figure 10a. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

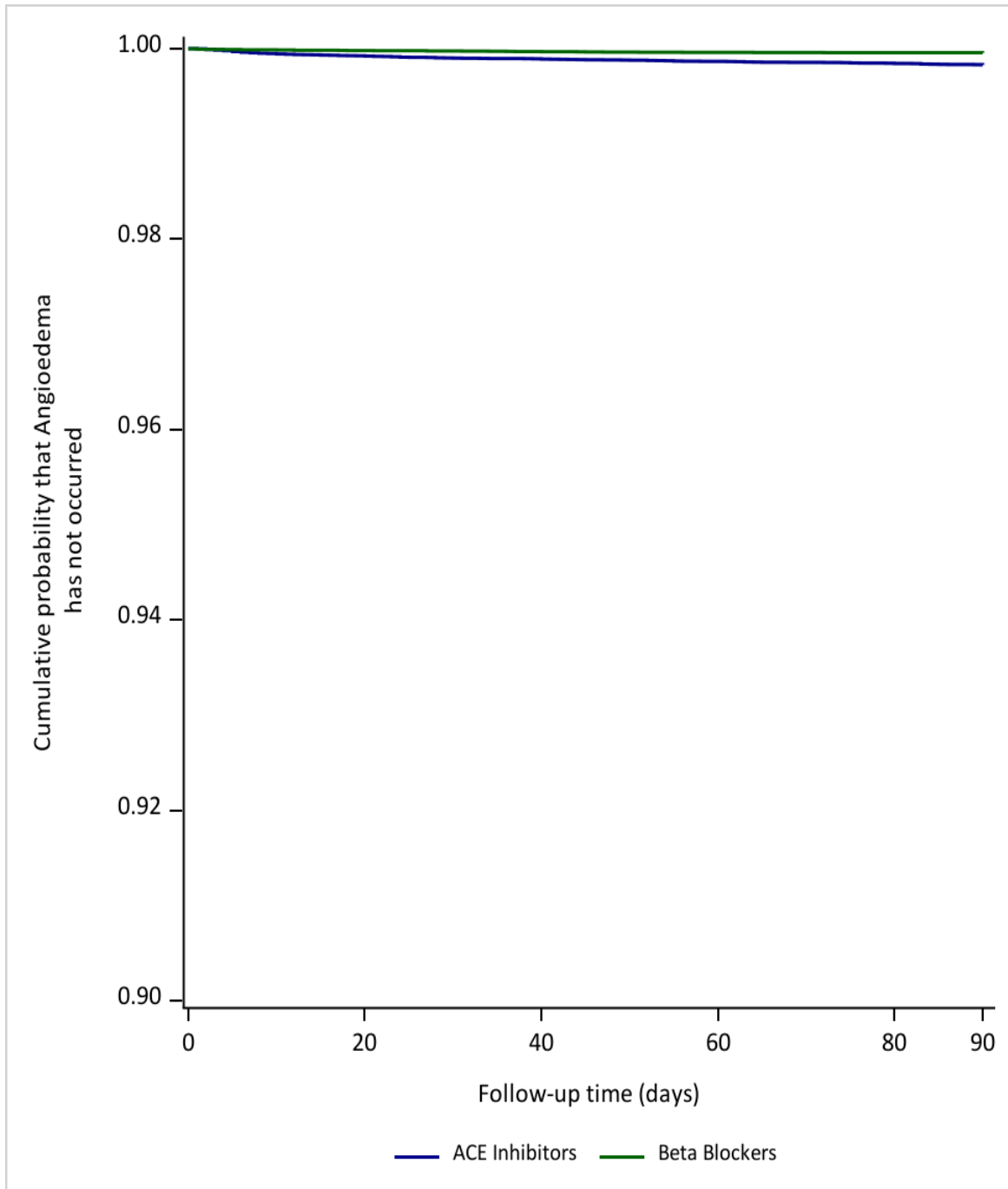


Figure 10b. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

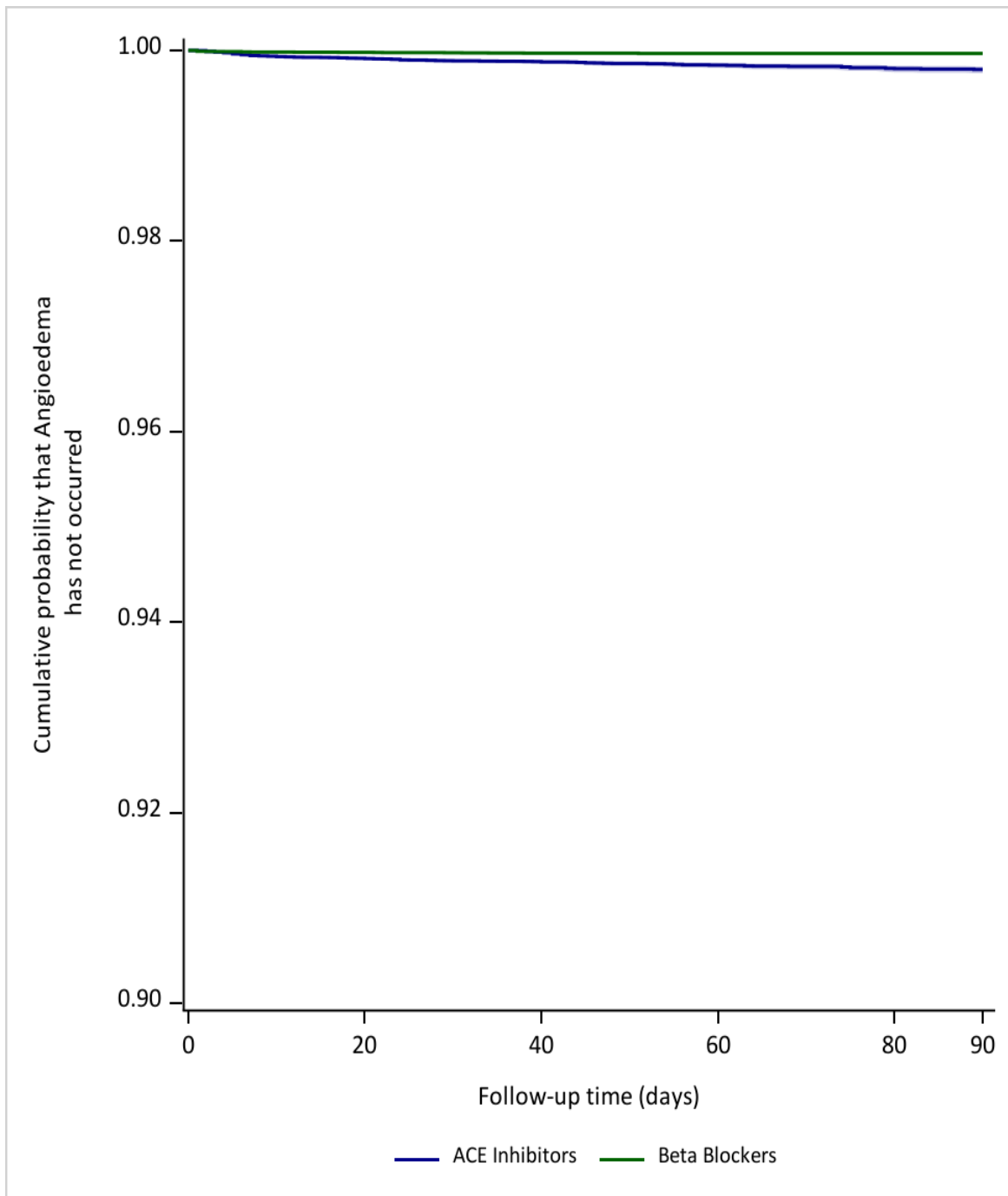


Figure 10c. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

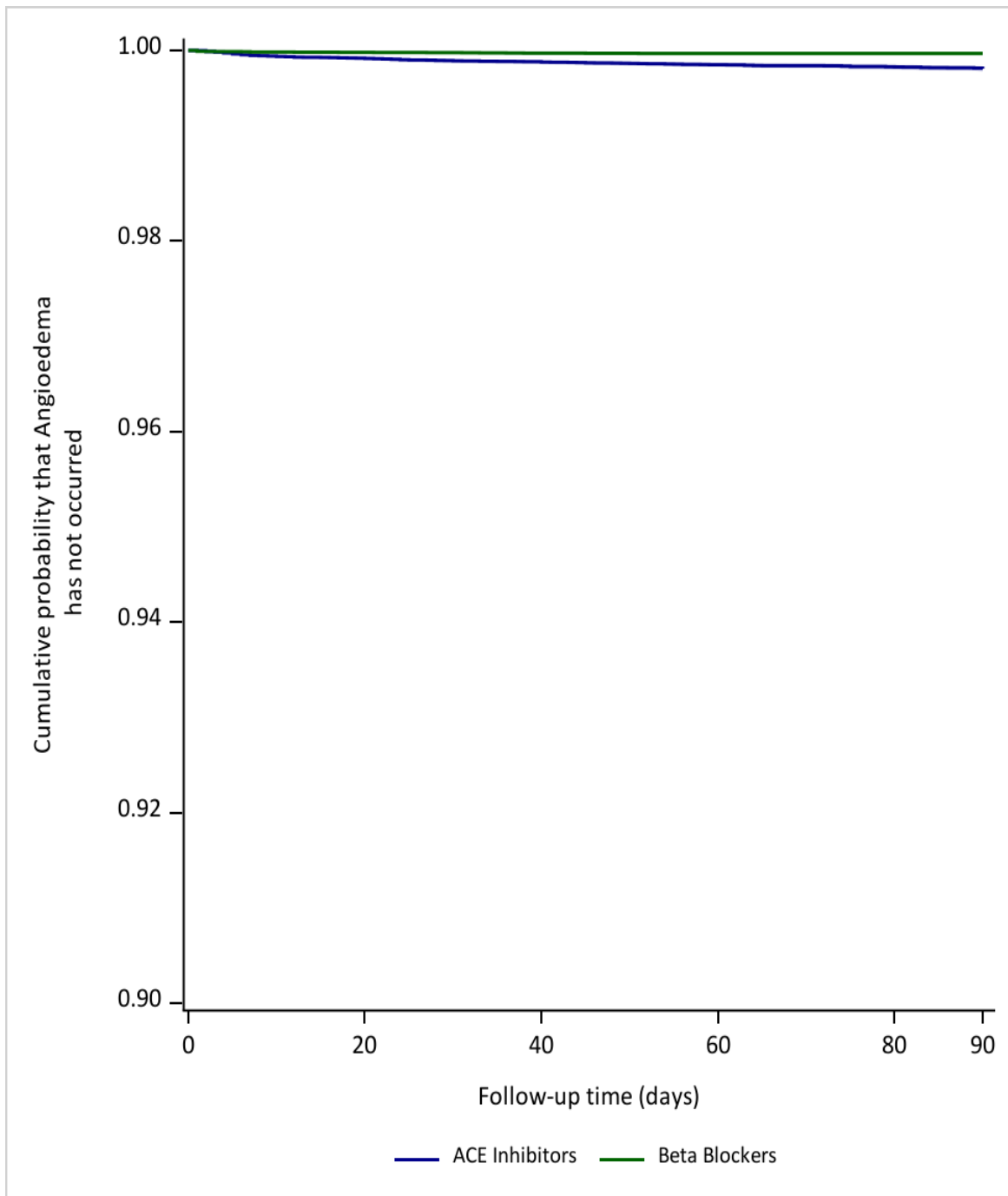


Figure 10d. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

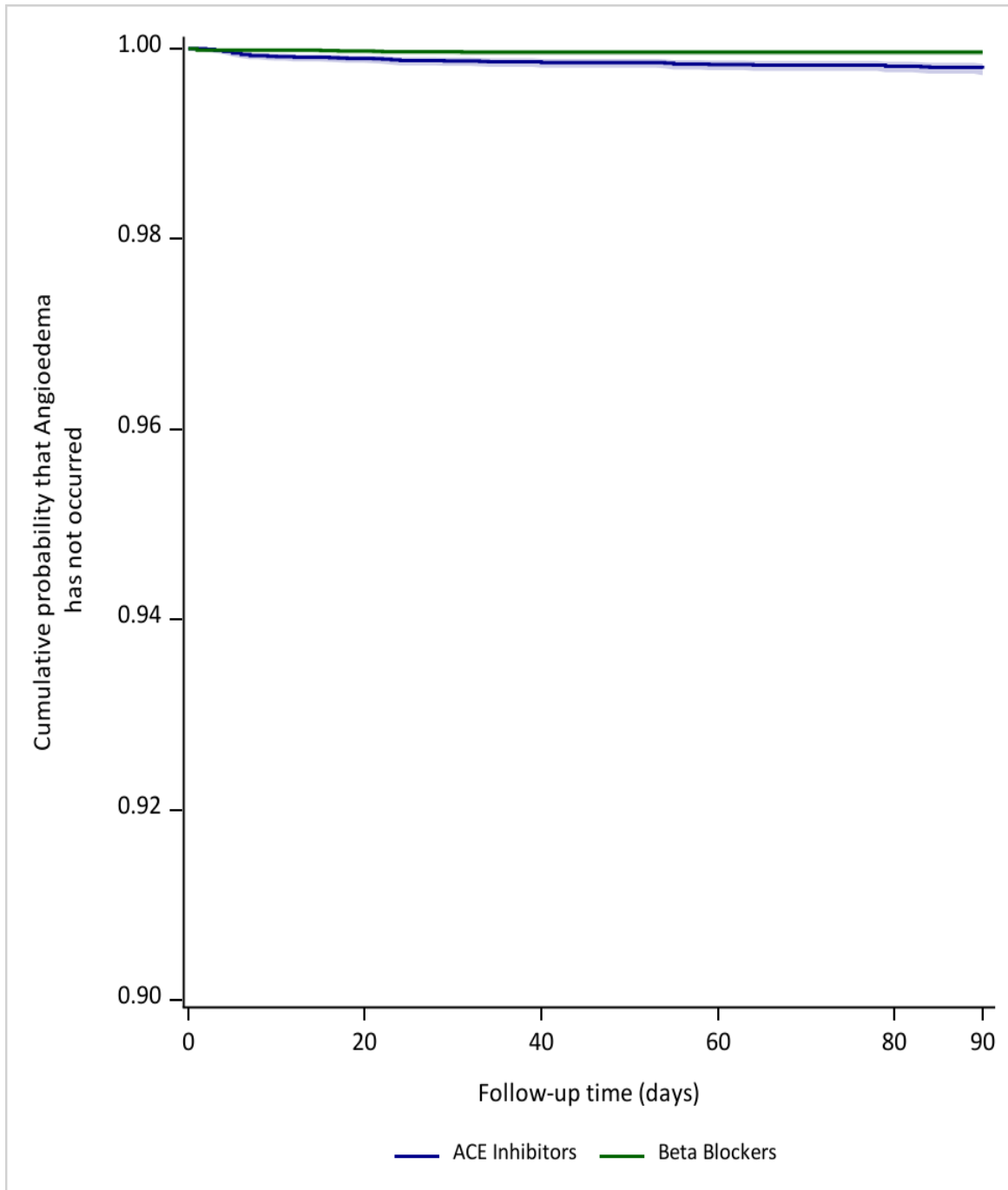


Figure 10e. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

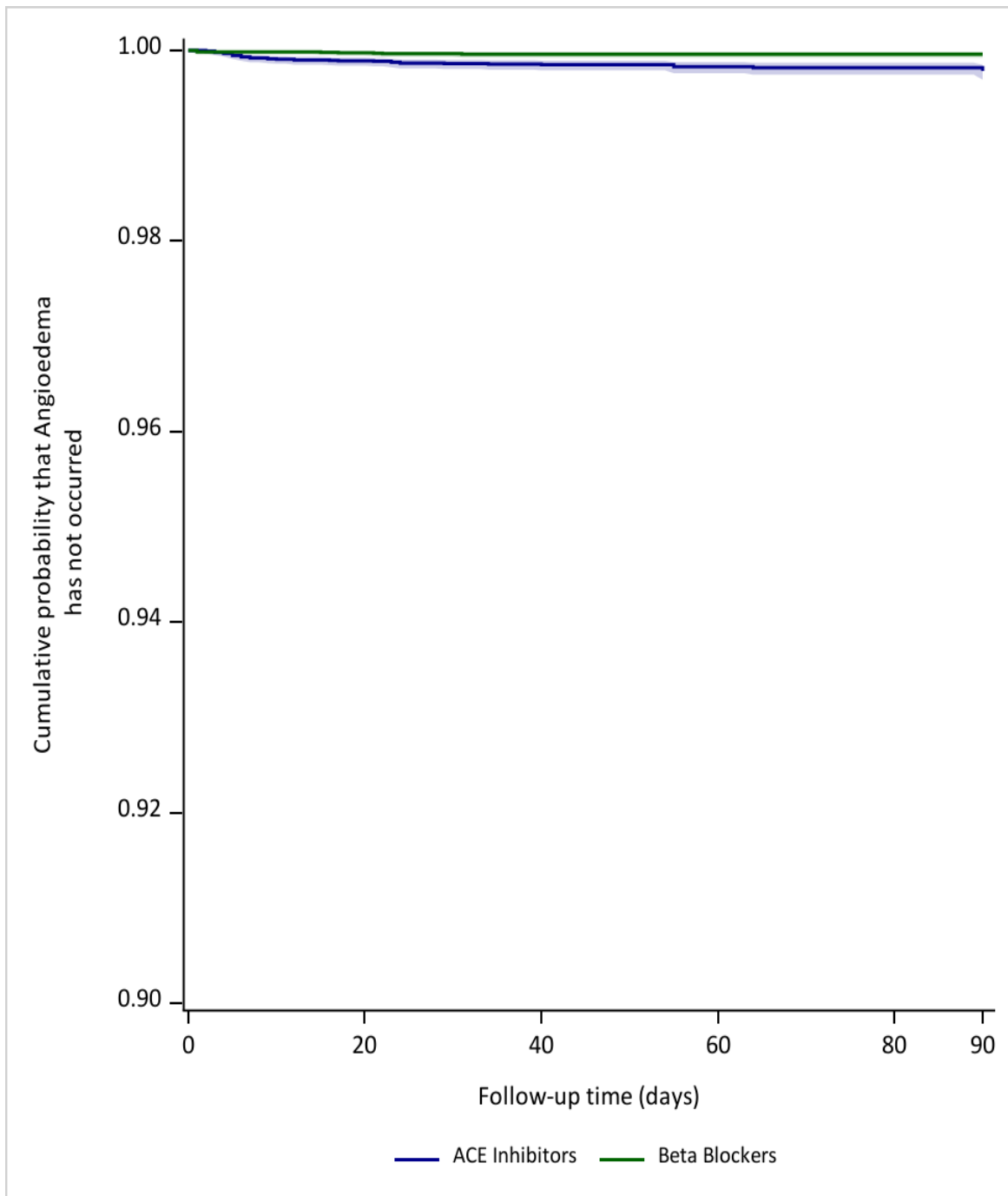


Figure 10f. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

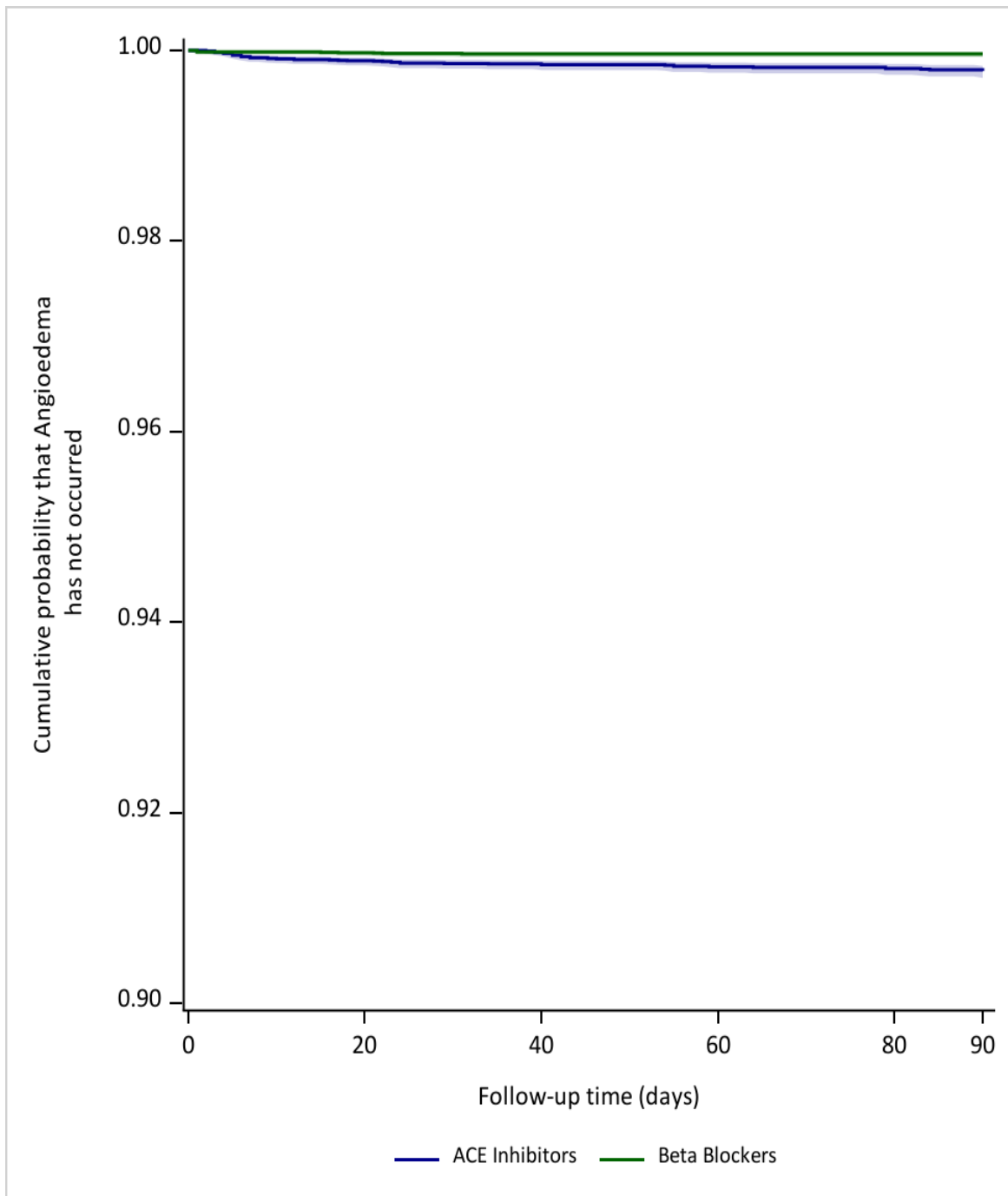


Figure 10g. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

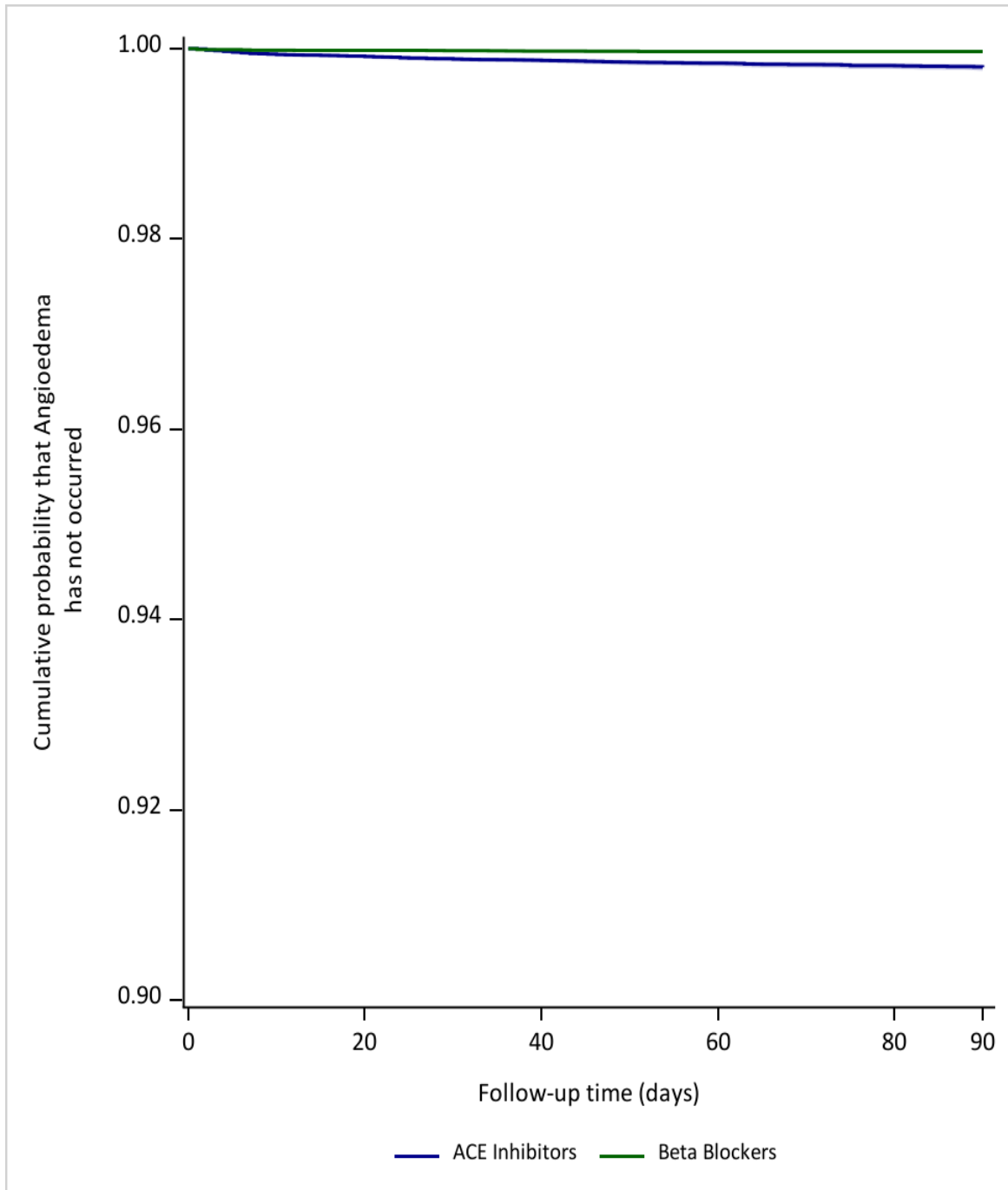


Figure 10h. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

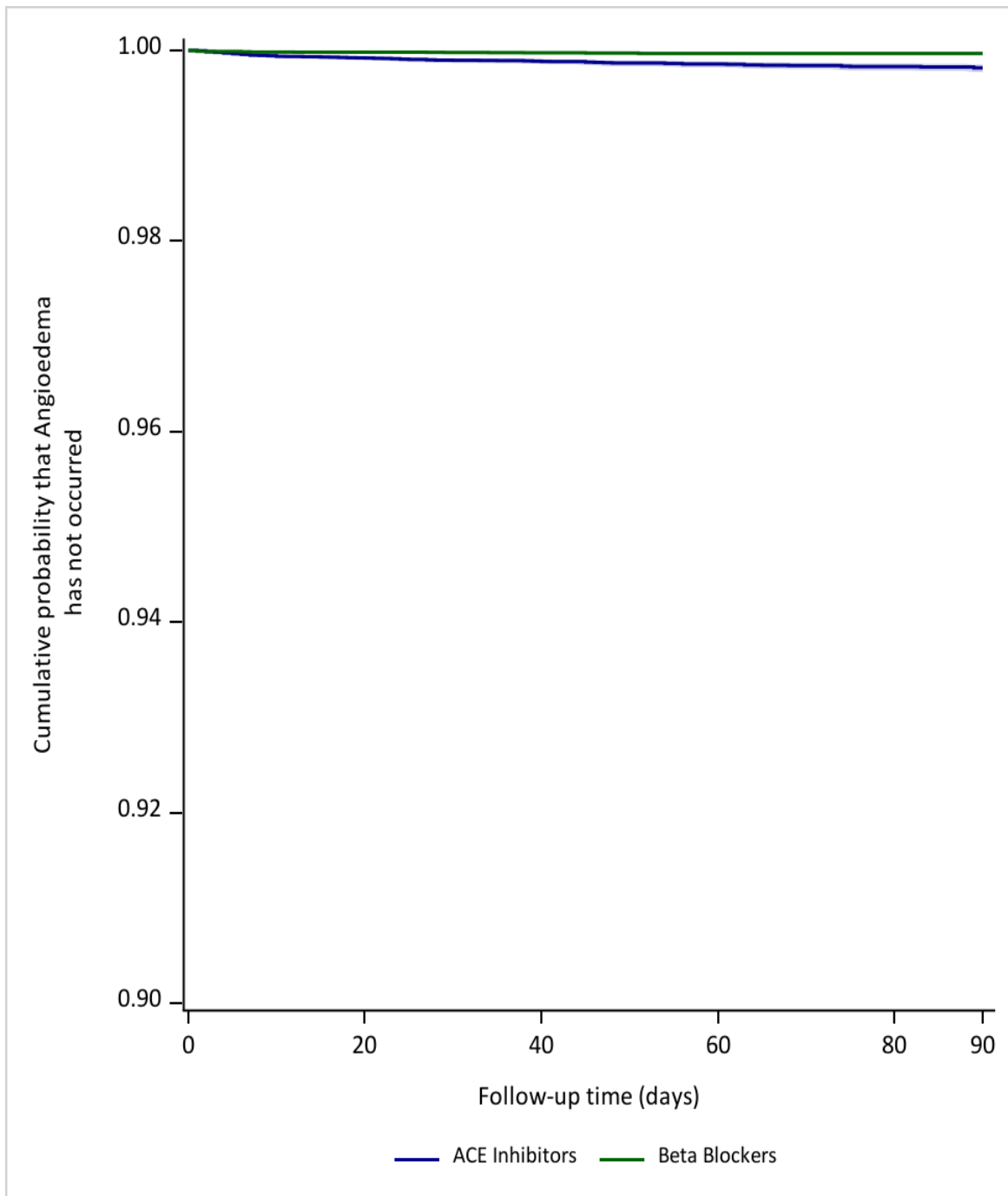


Figure 10i. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

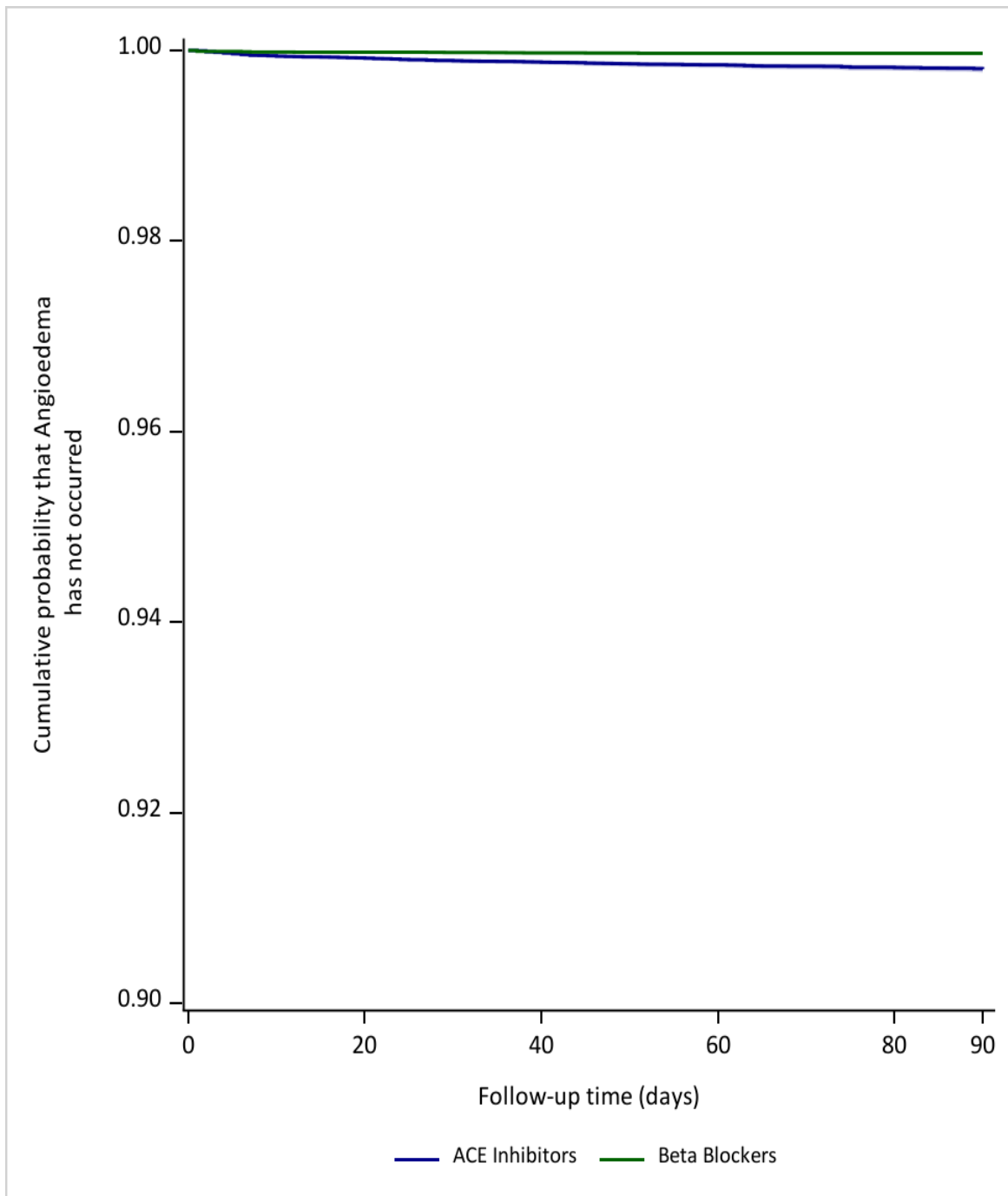


Figure 10j. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

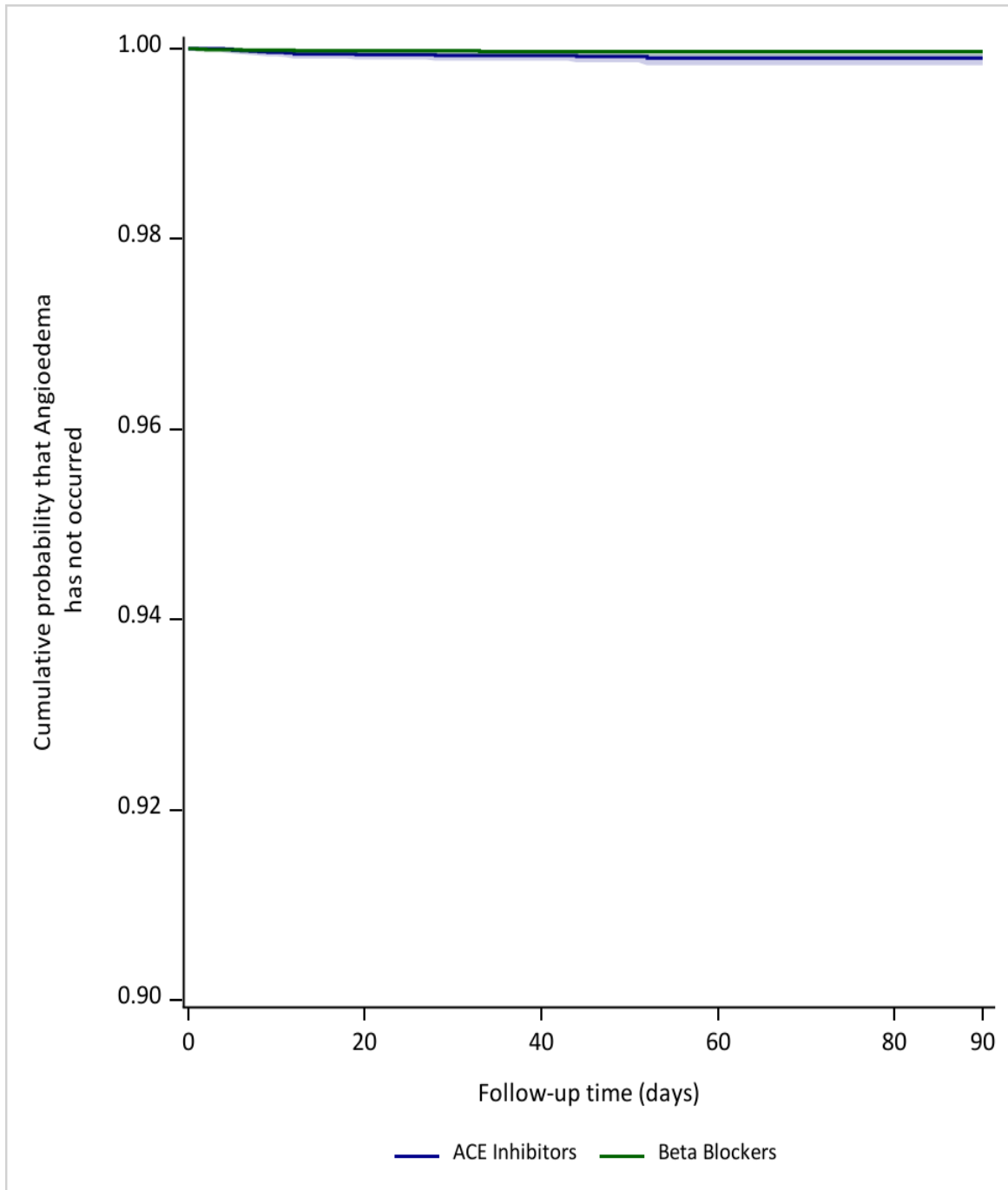


Figure 10k. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

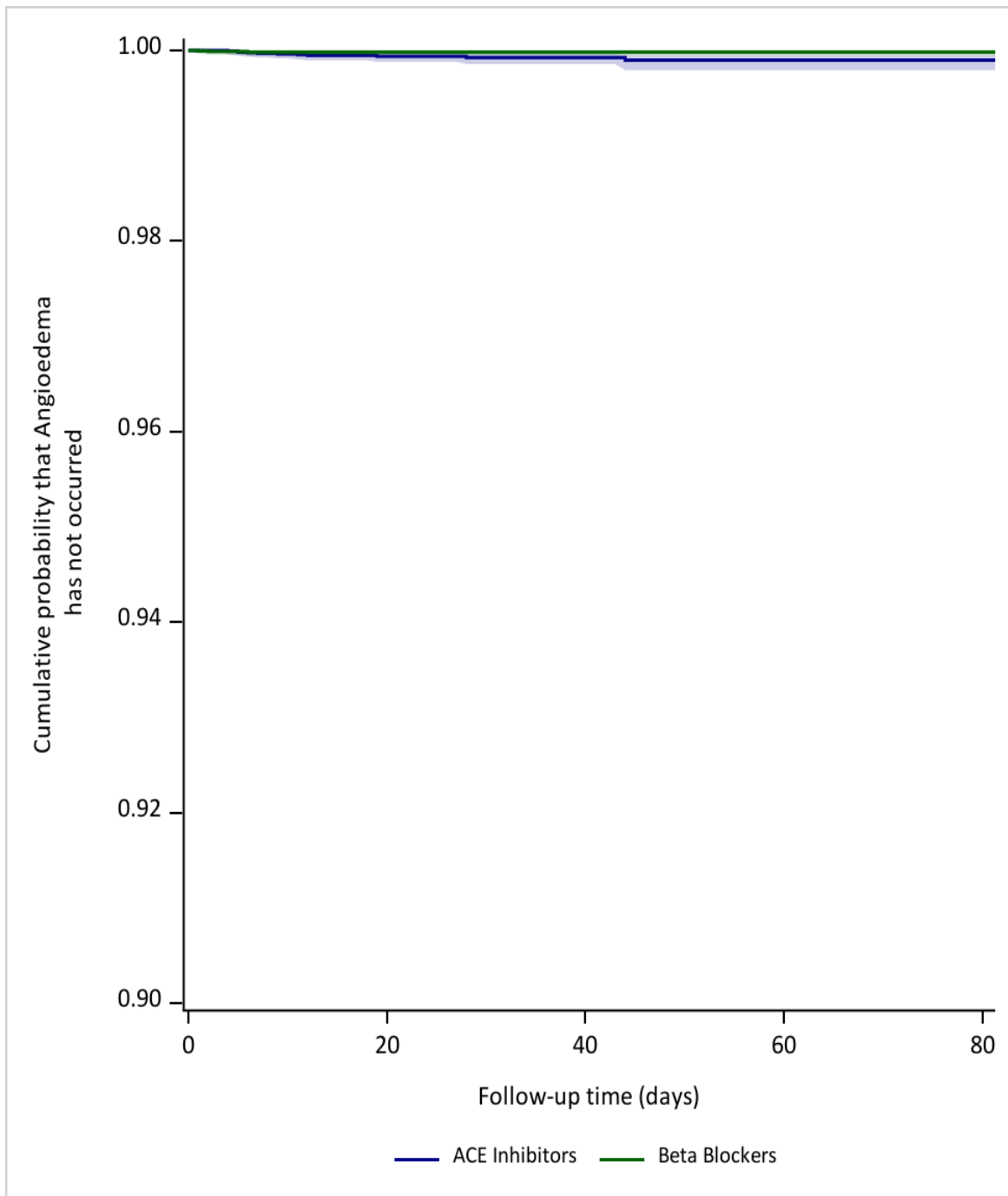


Figure 10l. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

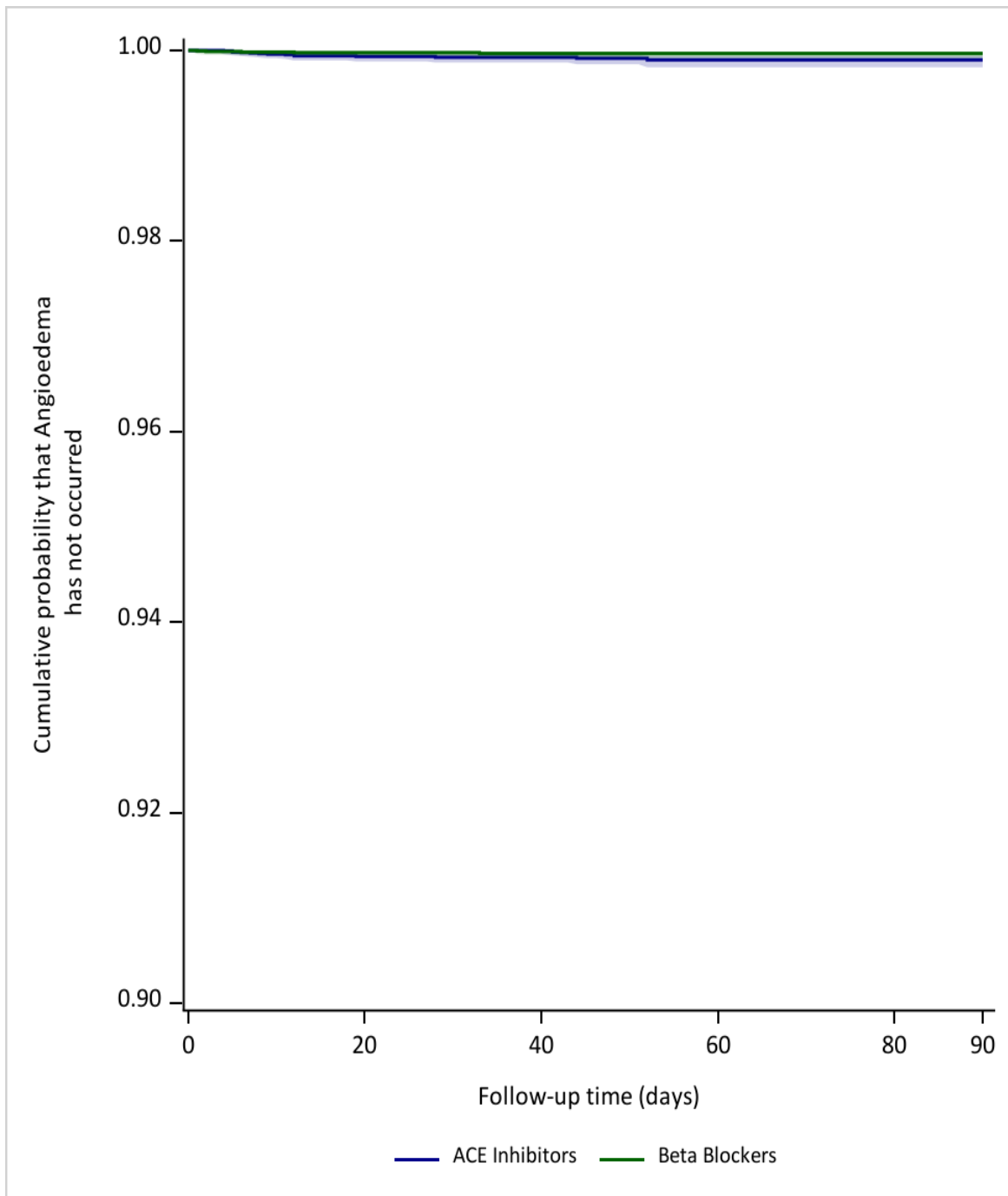


Figure 11a. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

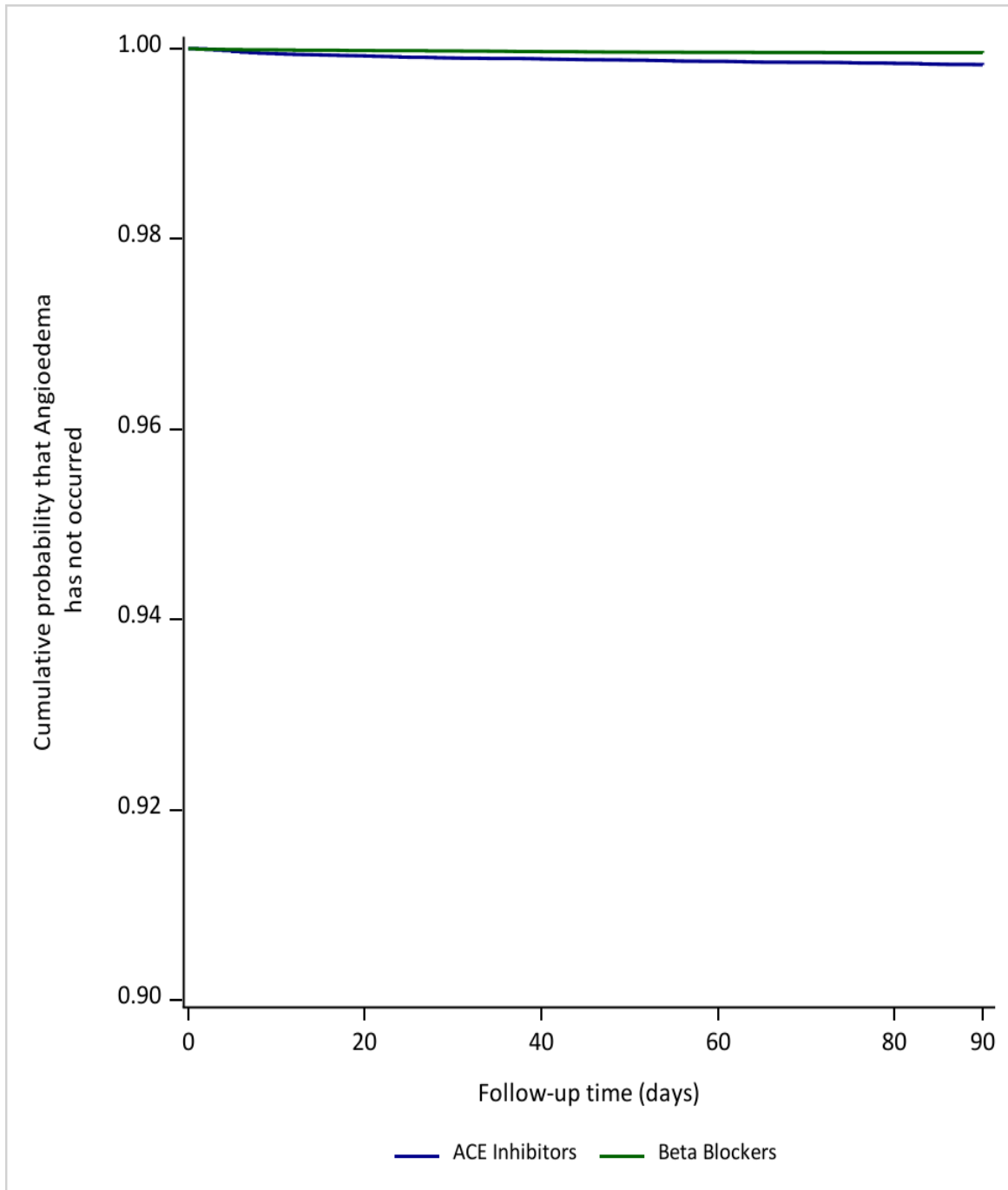


Figure 11b. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

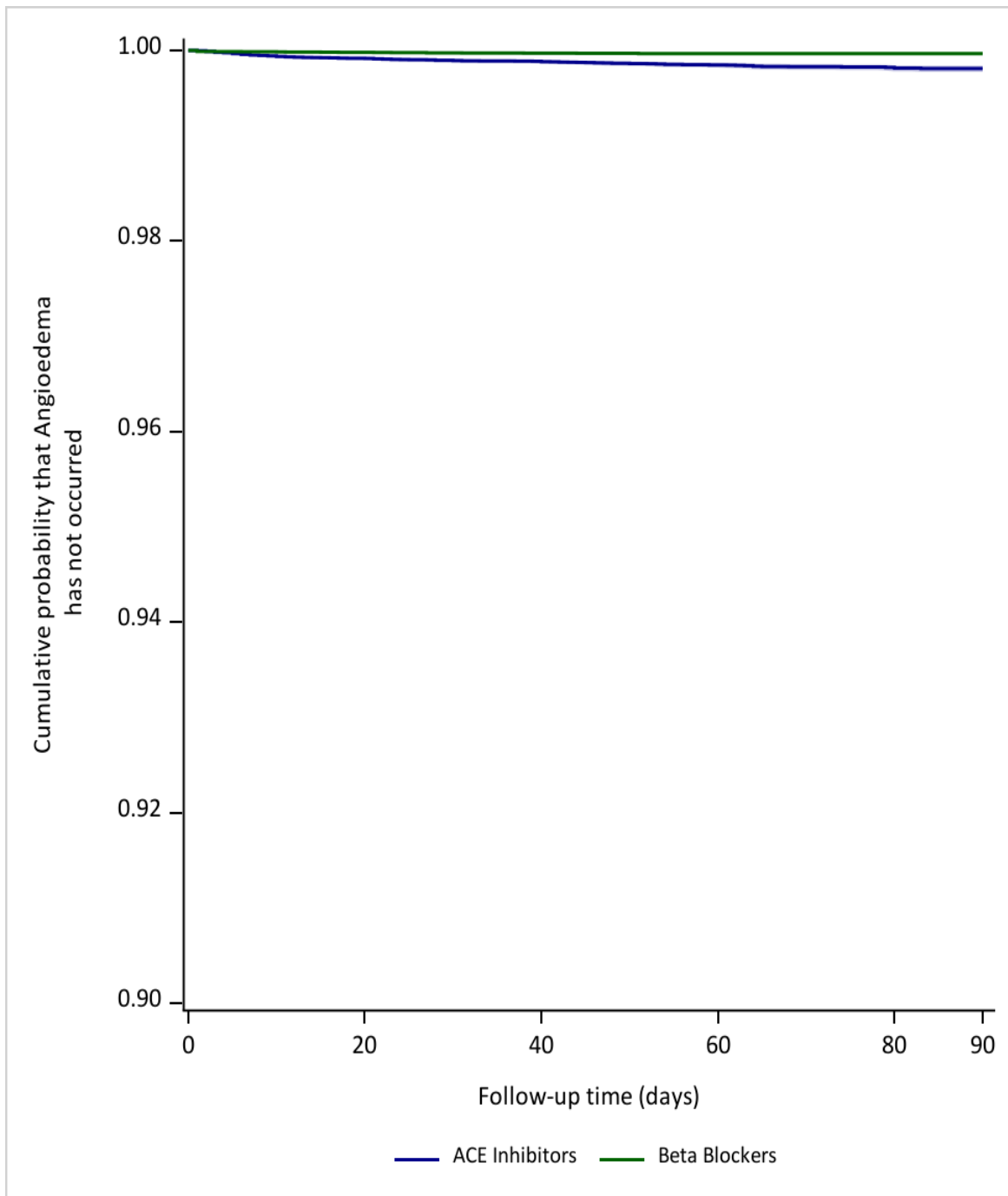


Figure 11c. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

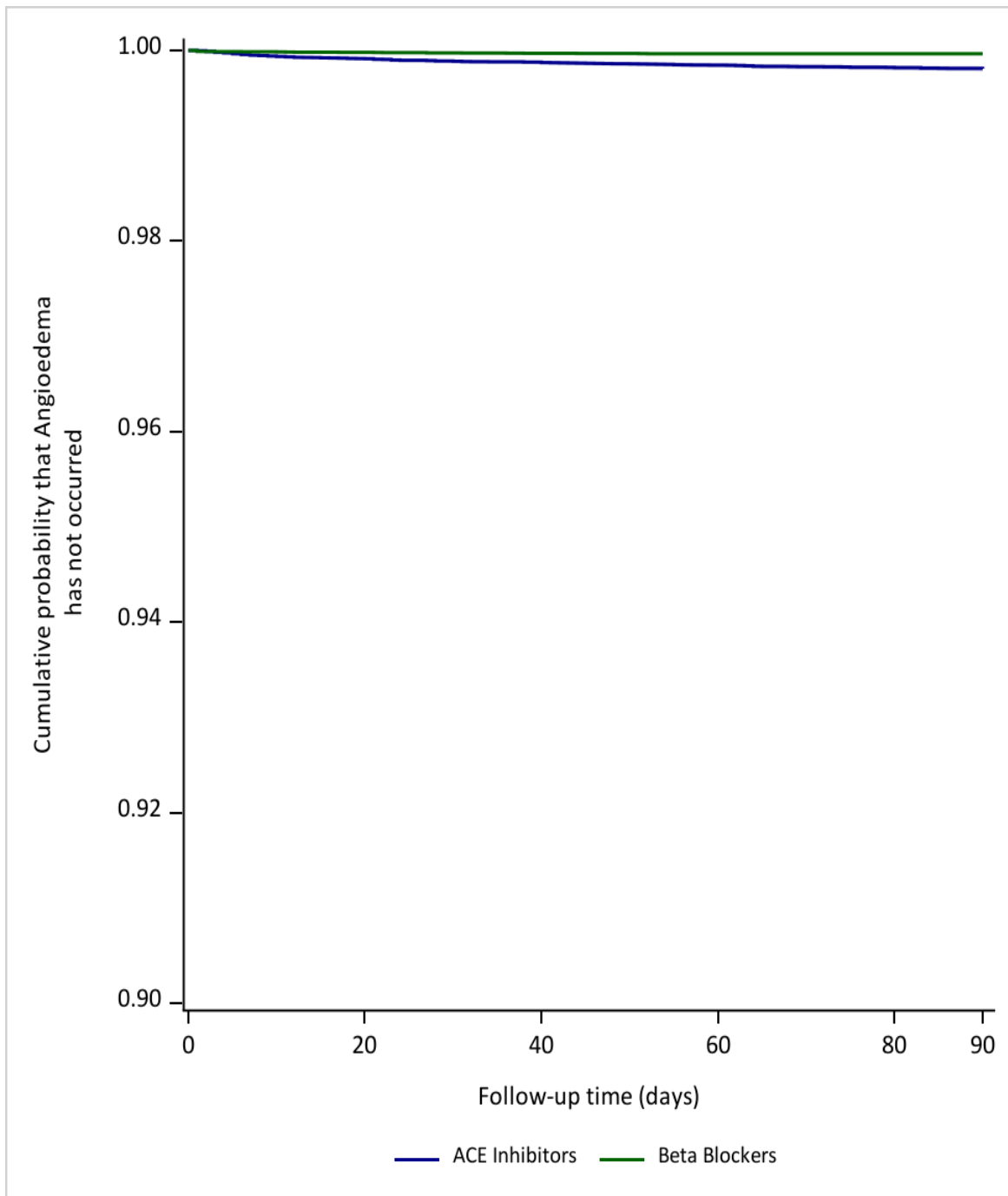


Figure 11d. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

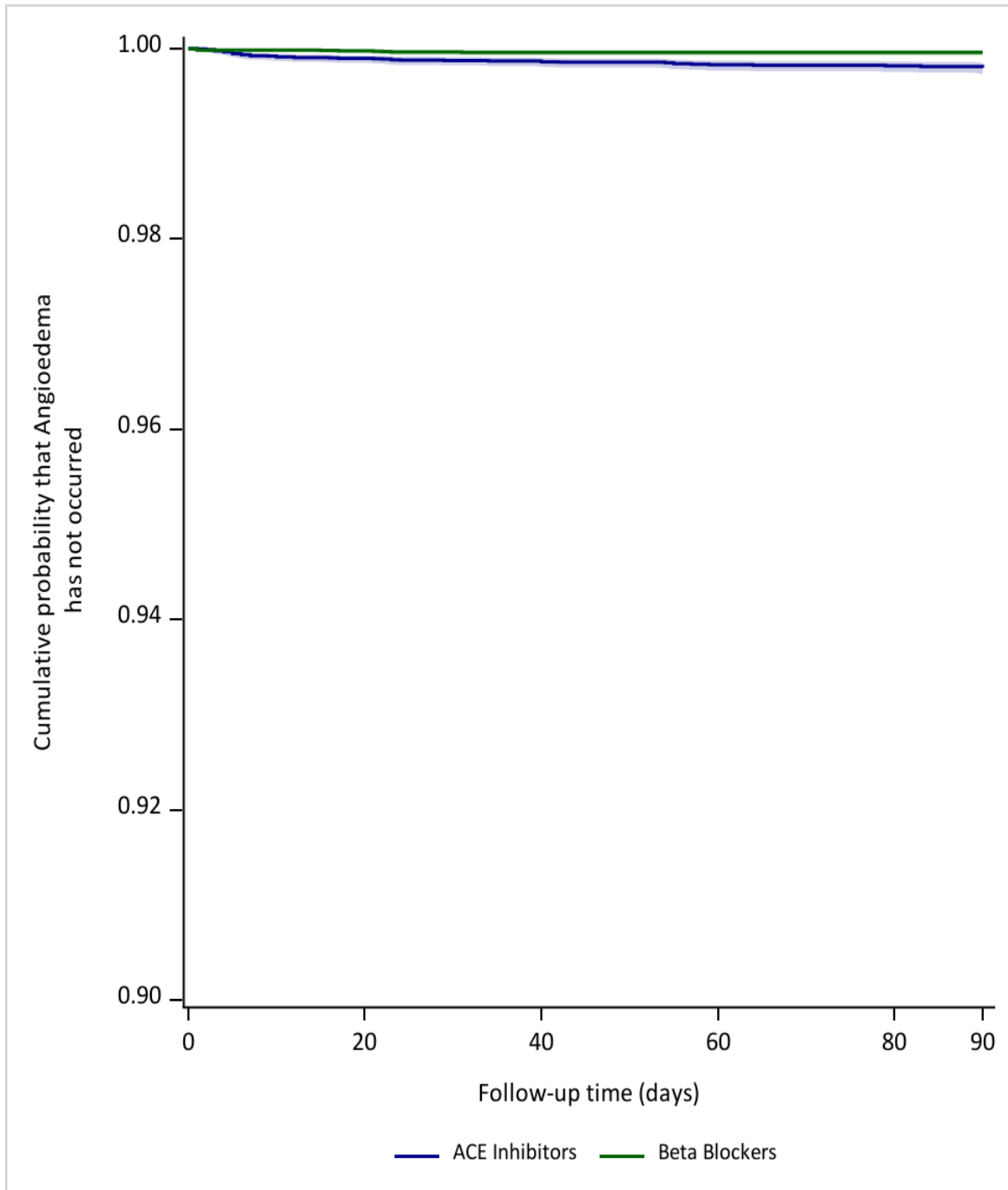


Figure 11e. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

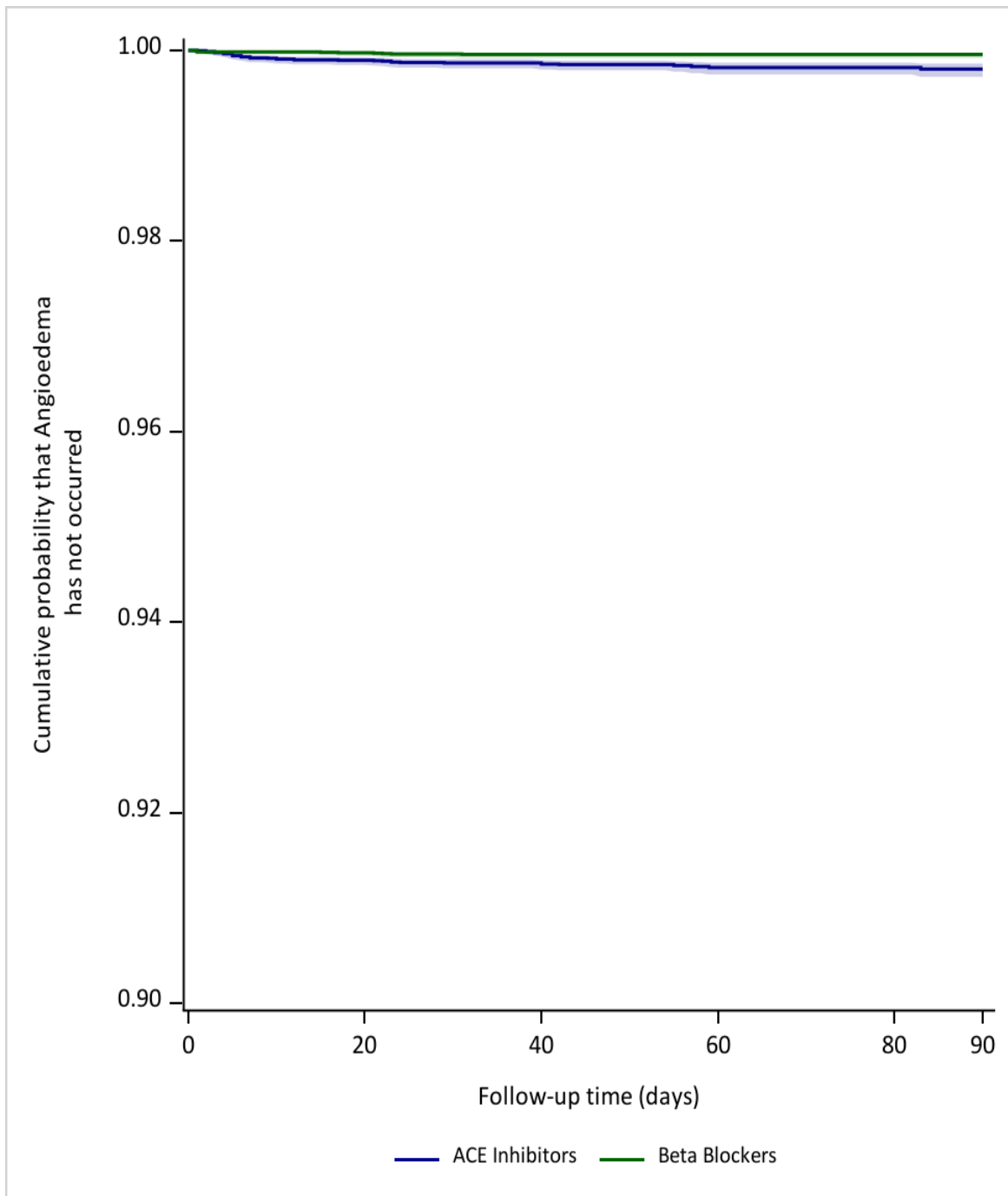


Figure 11f. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

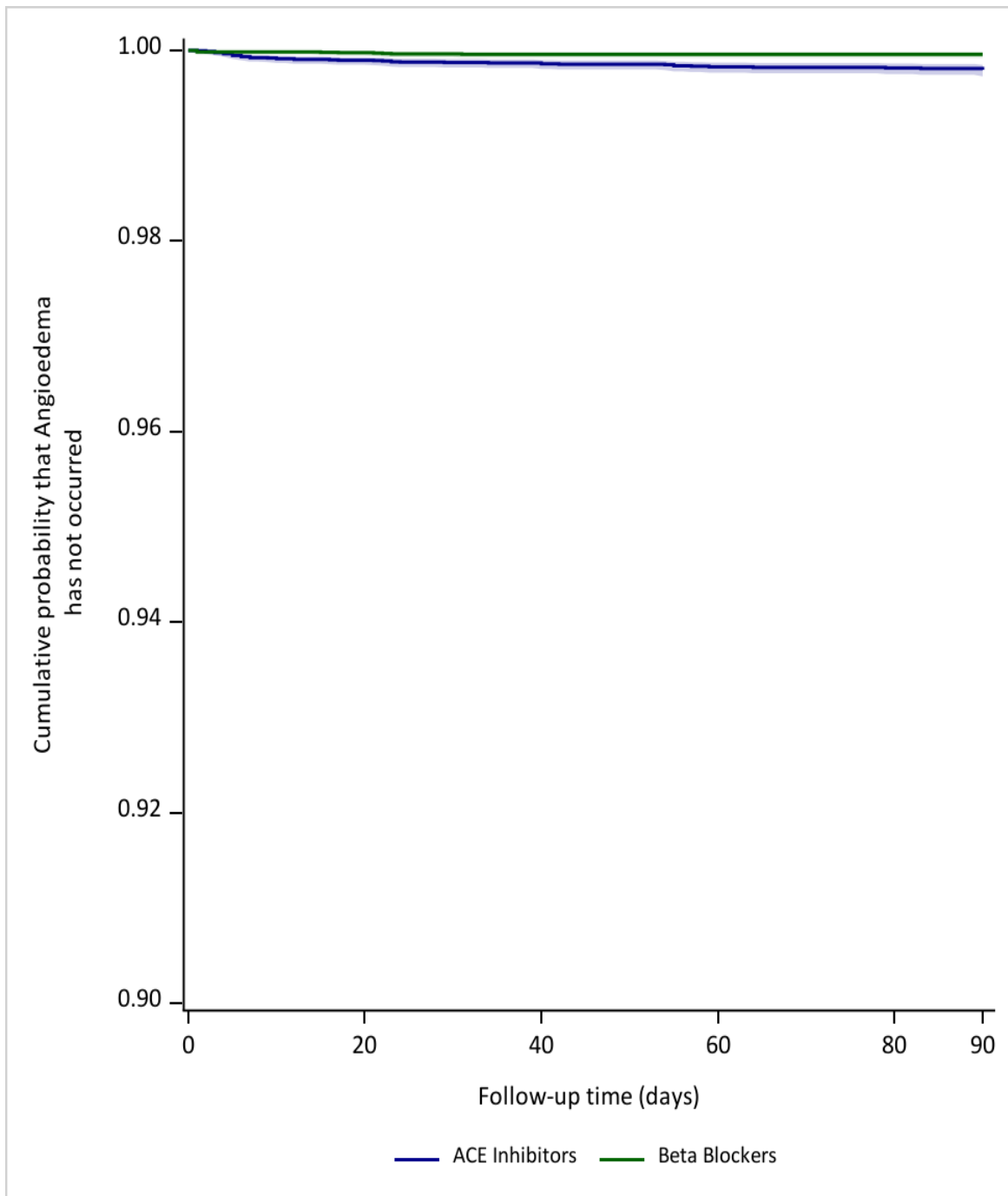


Figure 11g. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

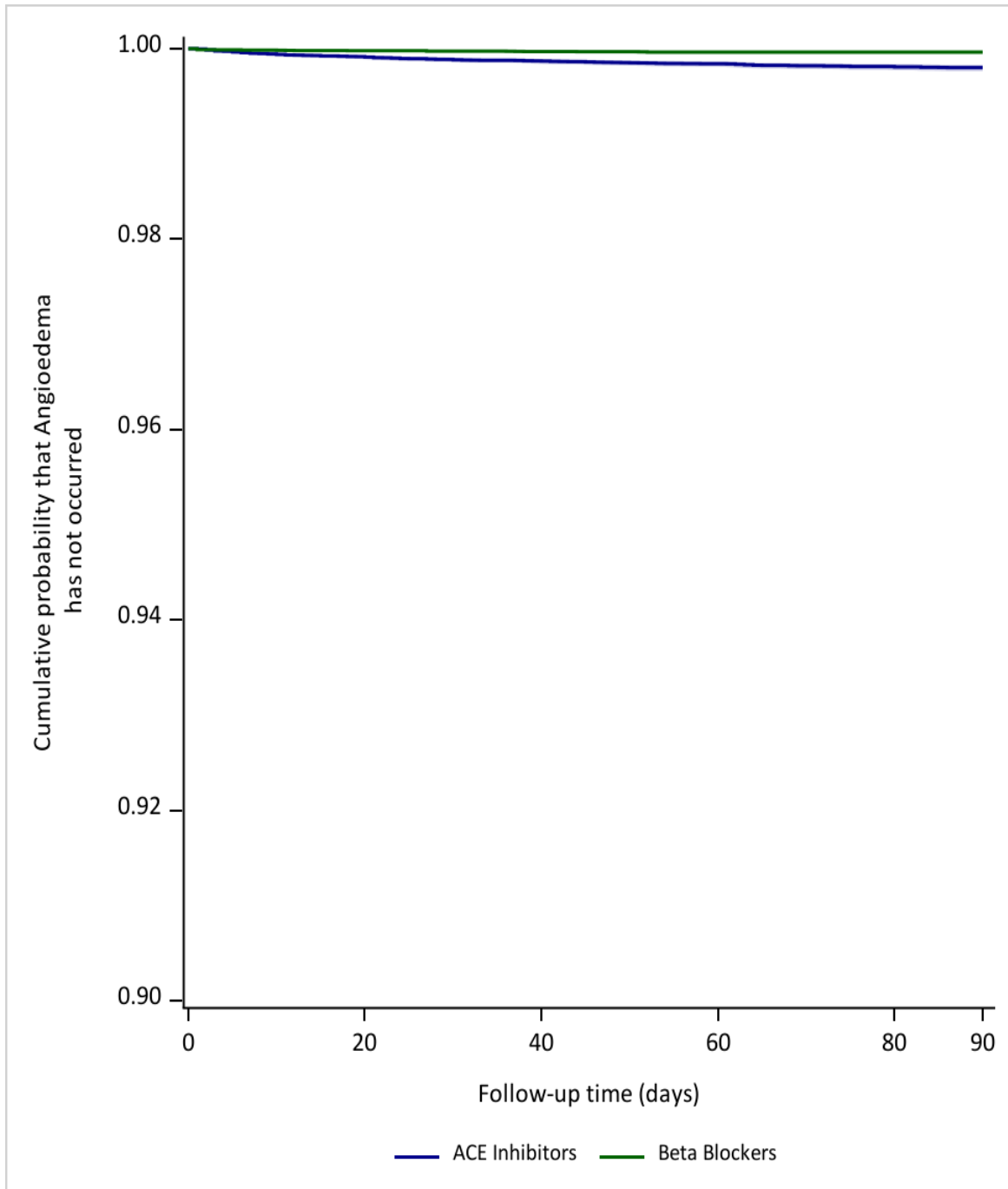


Figure 11h. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

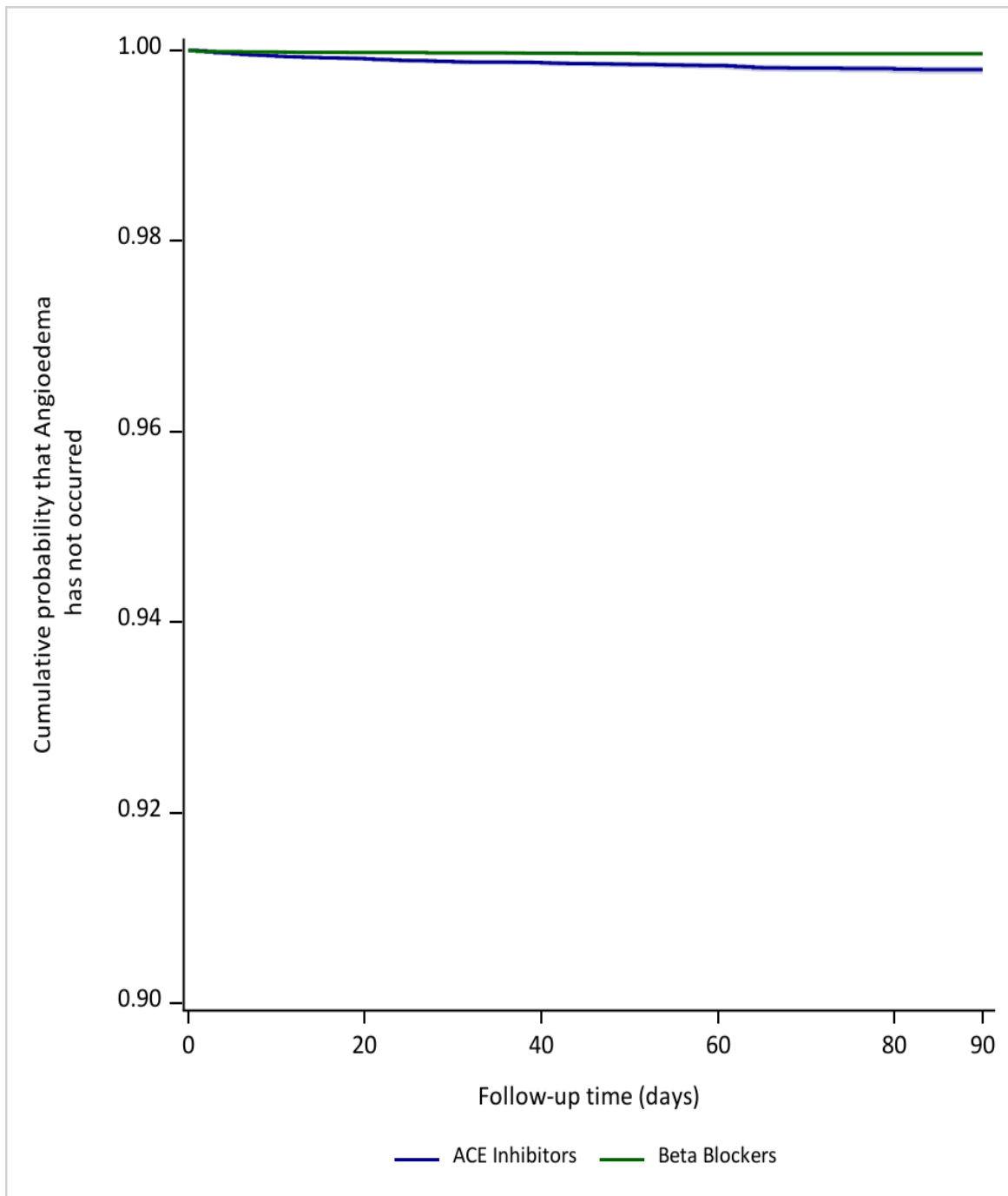


Figure 11i. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

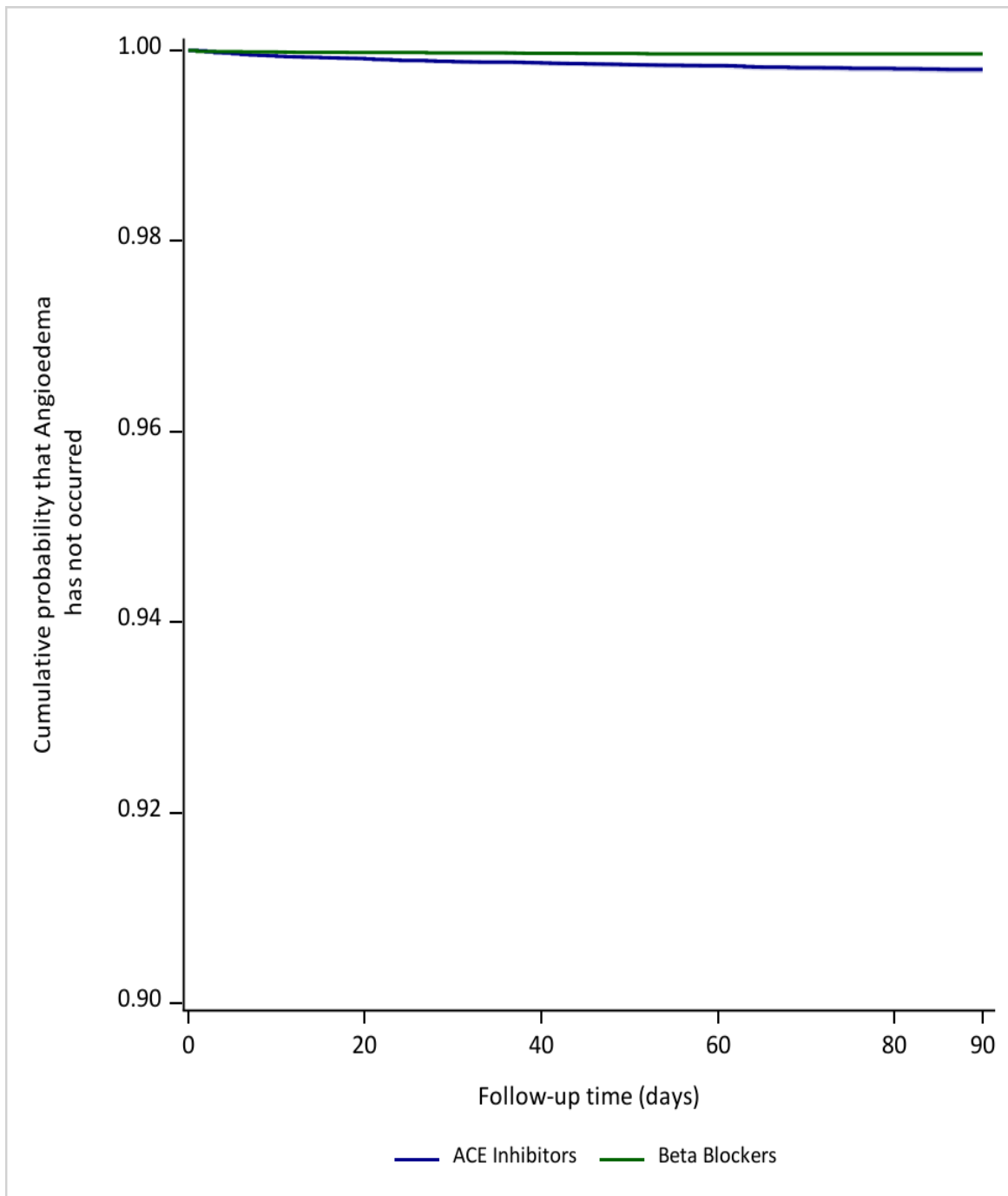


Figure 11j. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

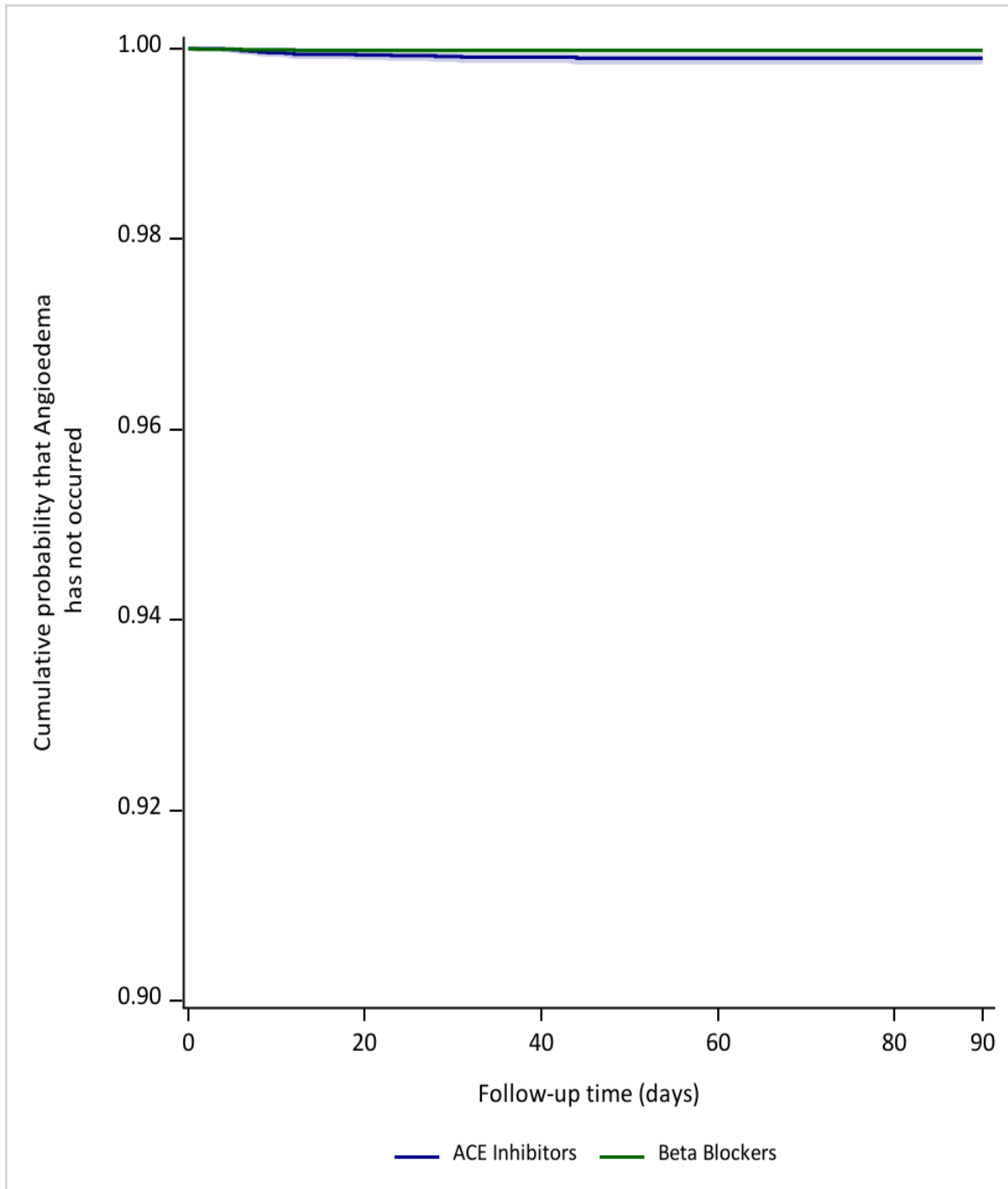


Figure 11k. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

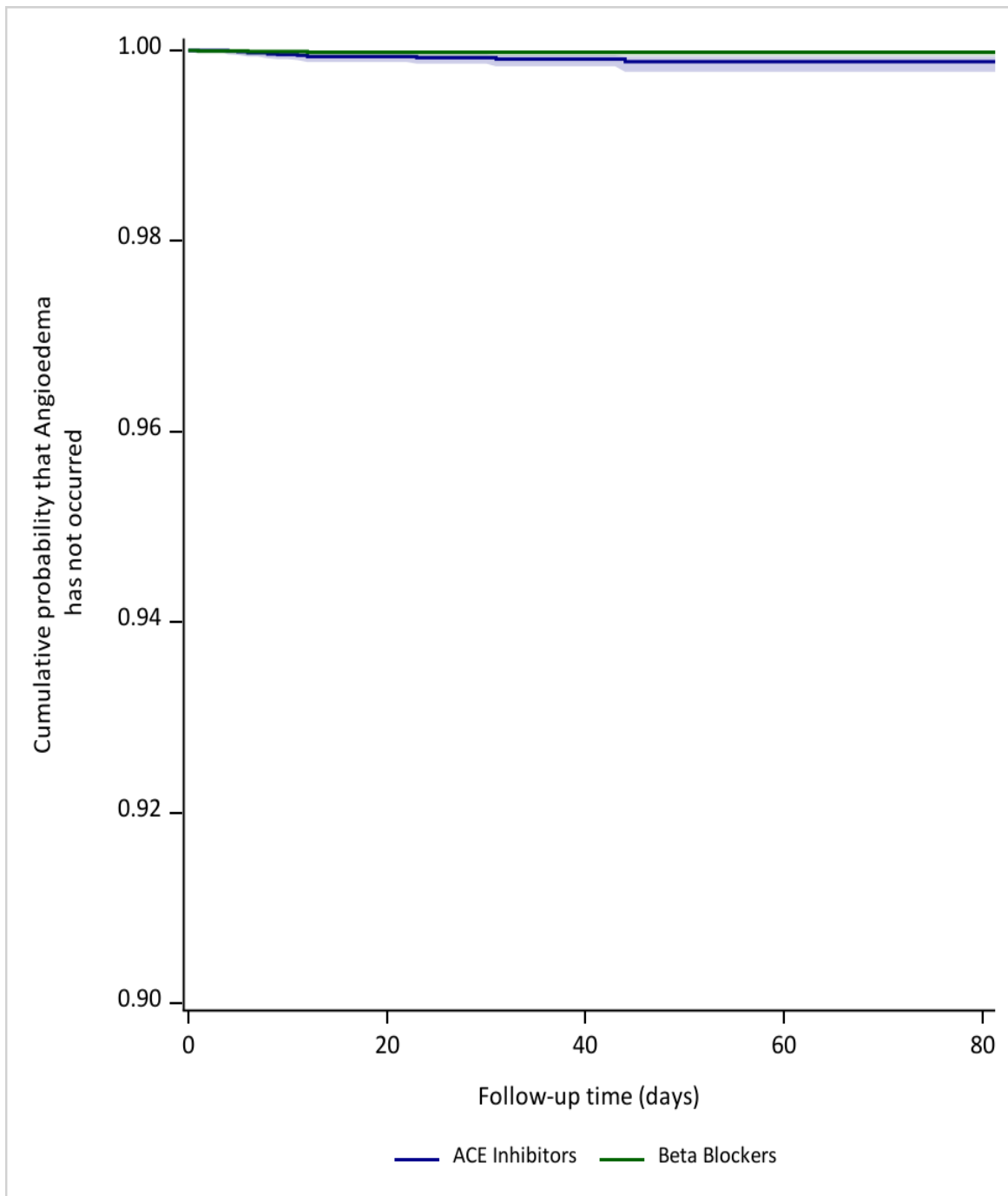


Figure 11l. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

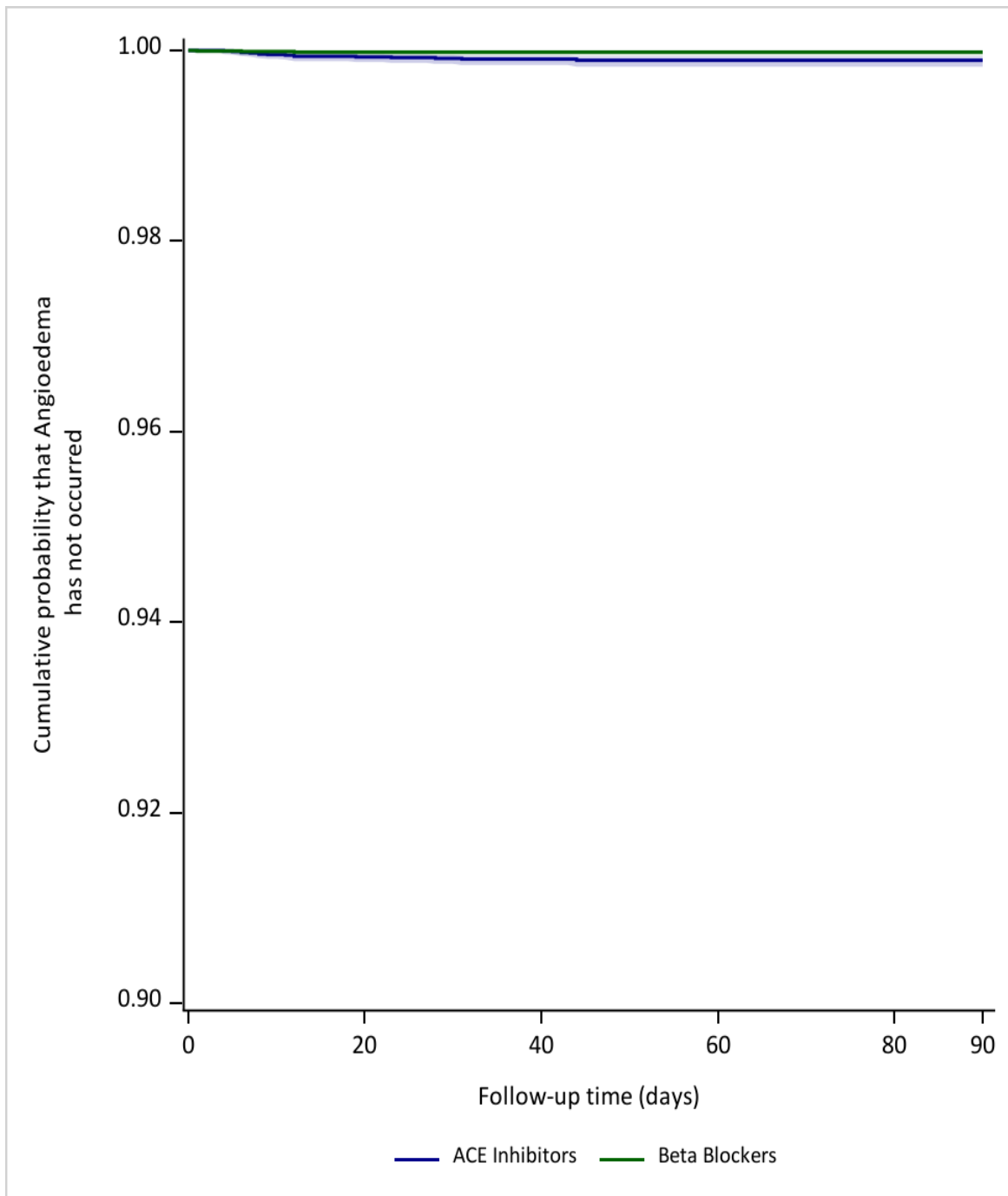


Figure 12a. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

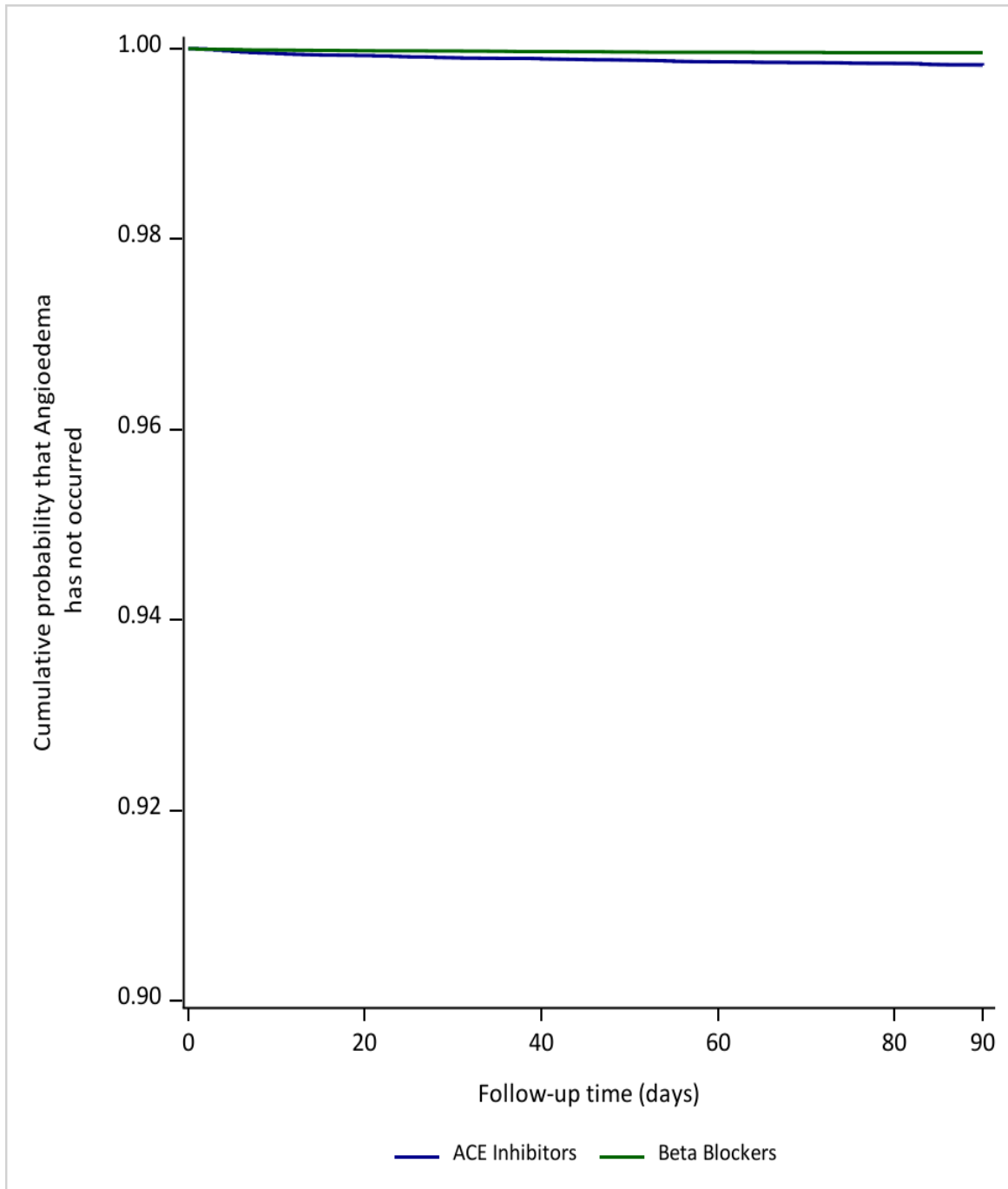


Figure 12b. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

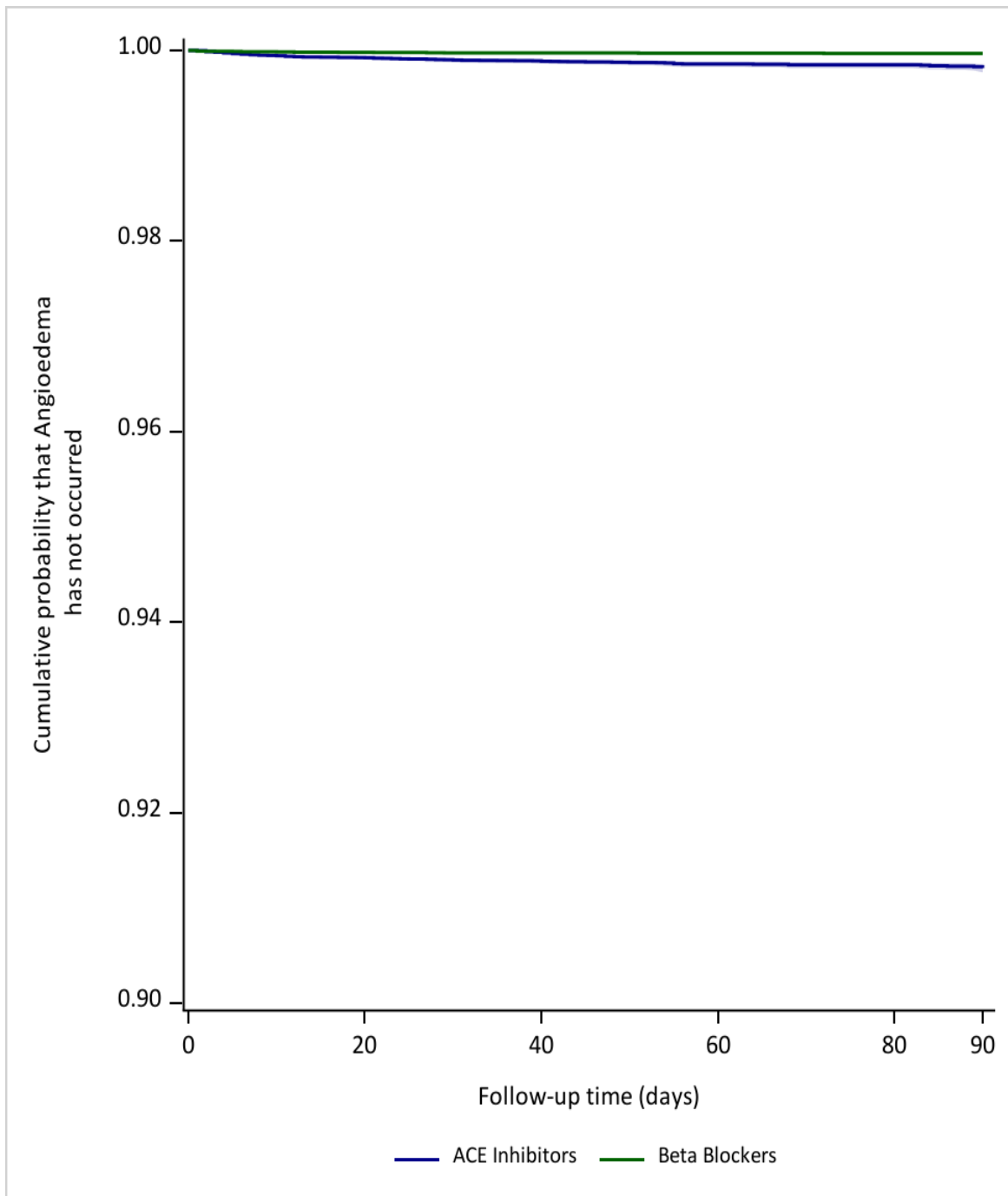


Figure 12c. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

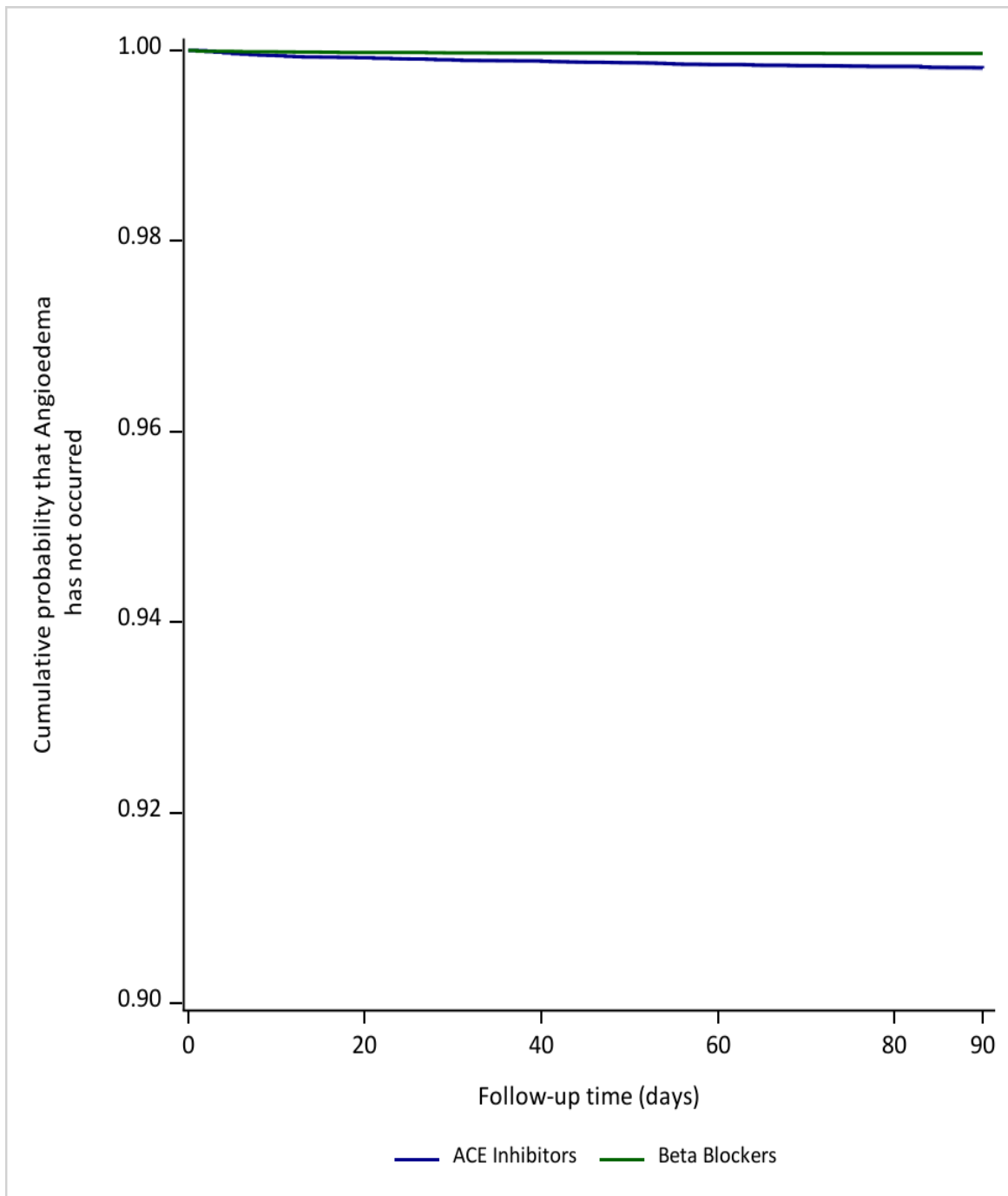


Figure 12d. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

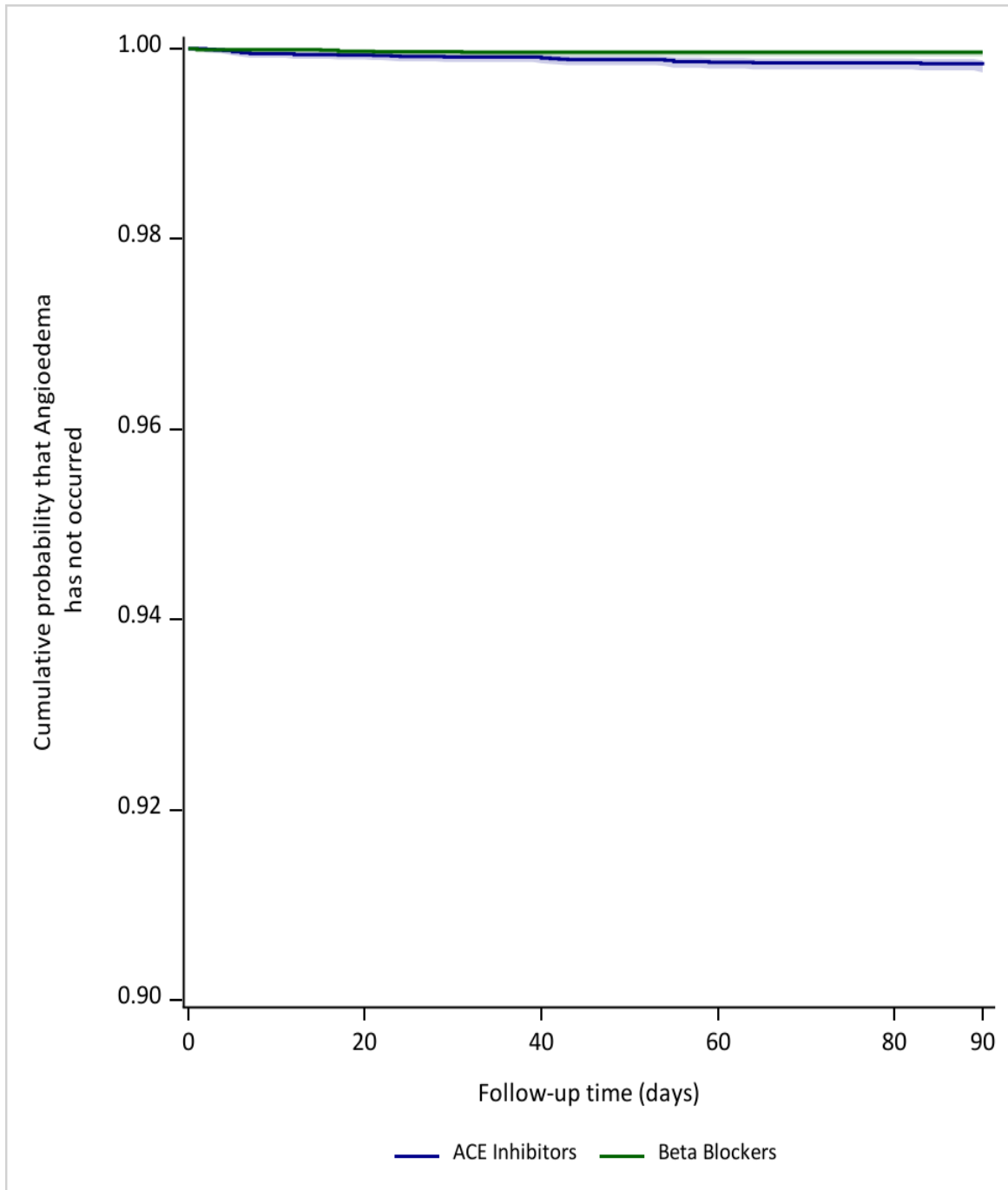


Figure 12e. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

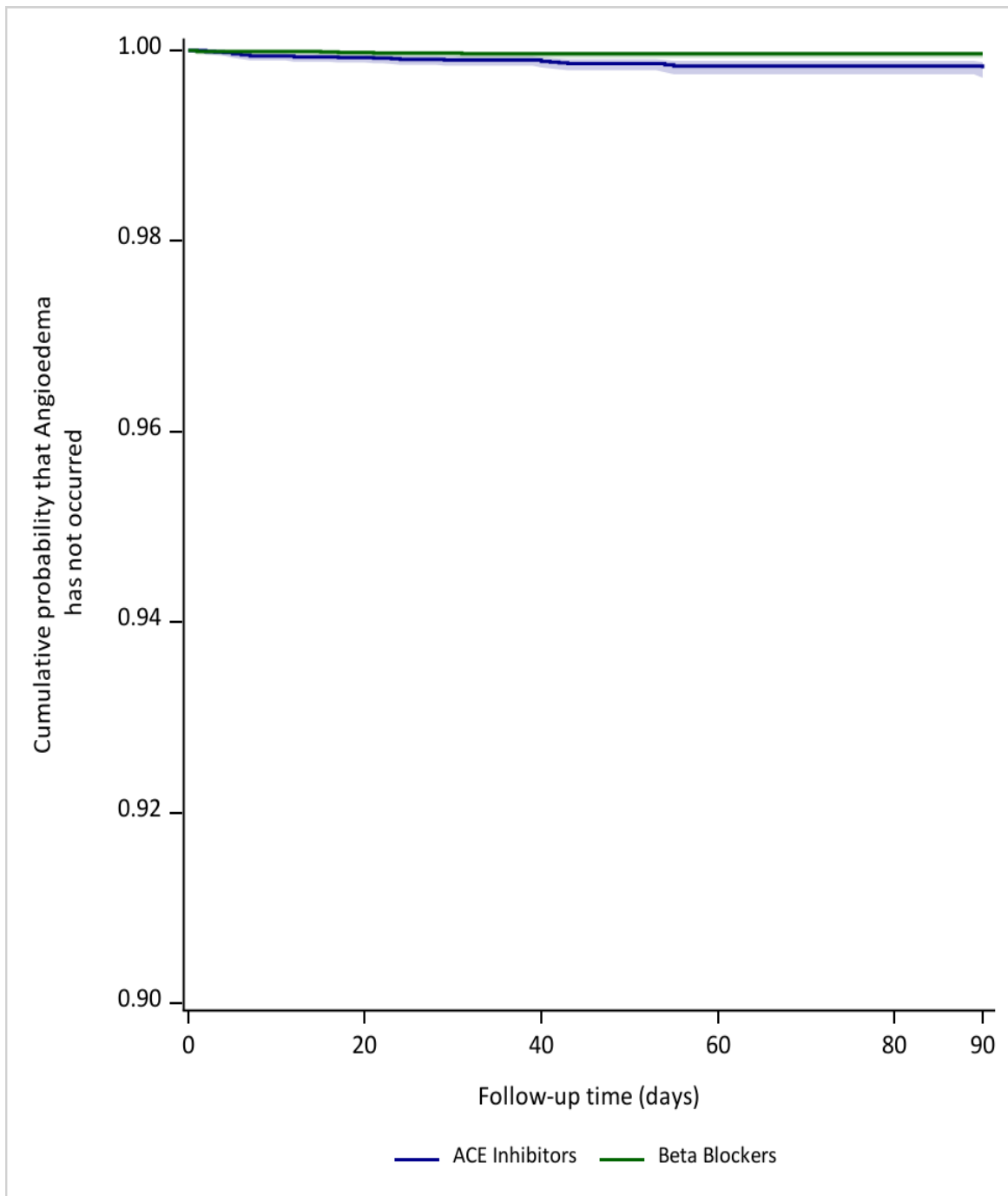


Figure 12f. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

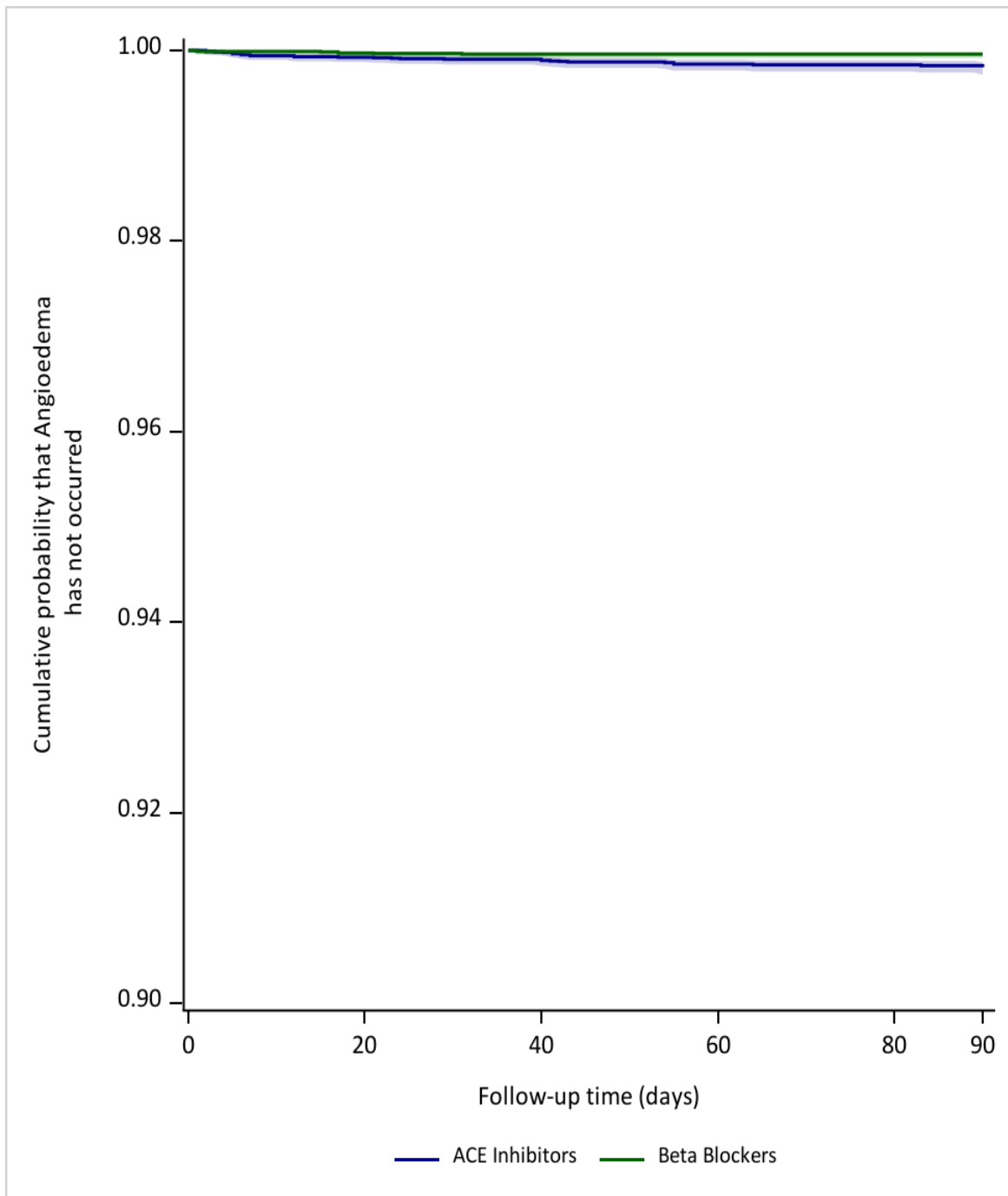


Figure 12g. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

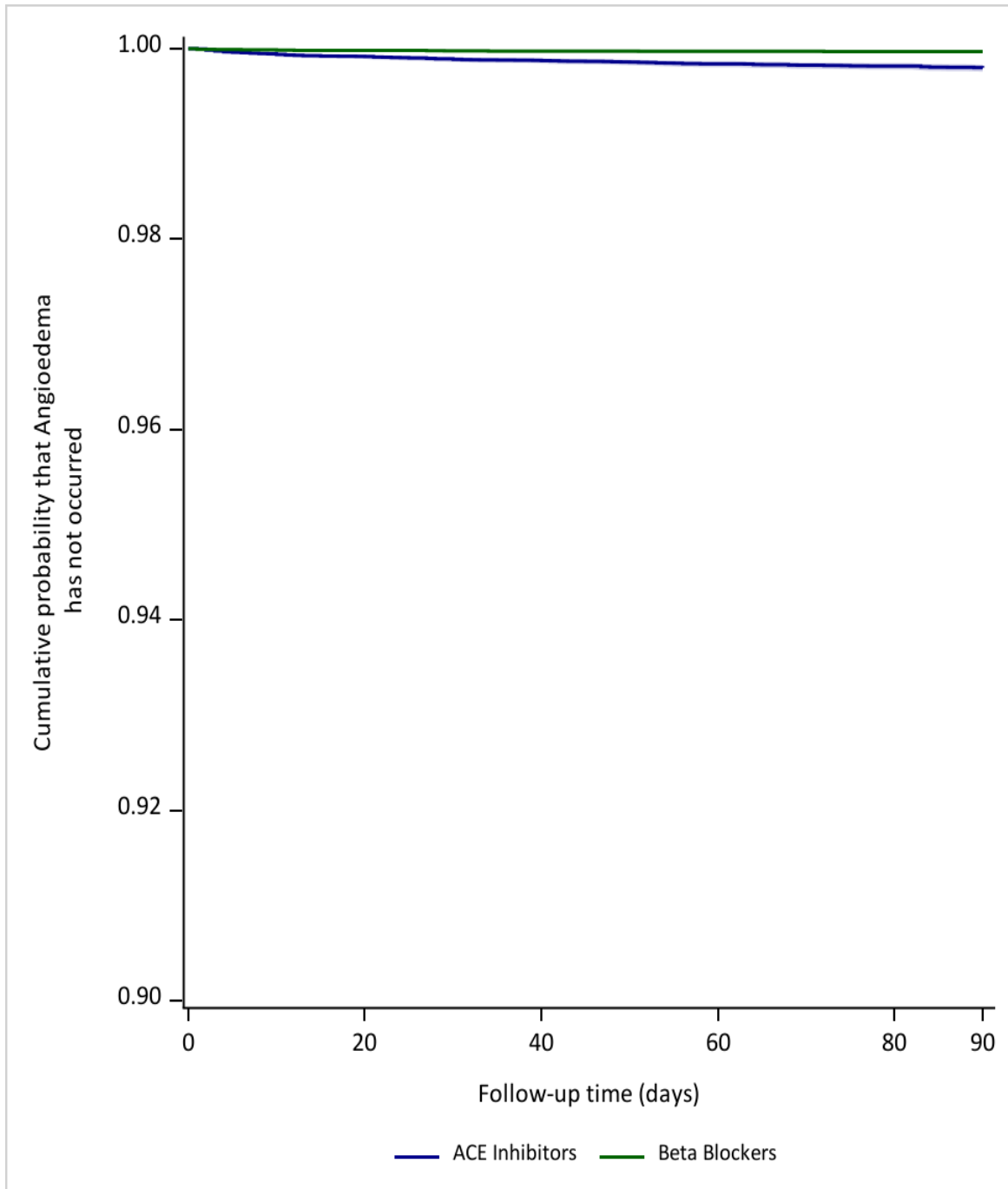


Figure 12h. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

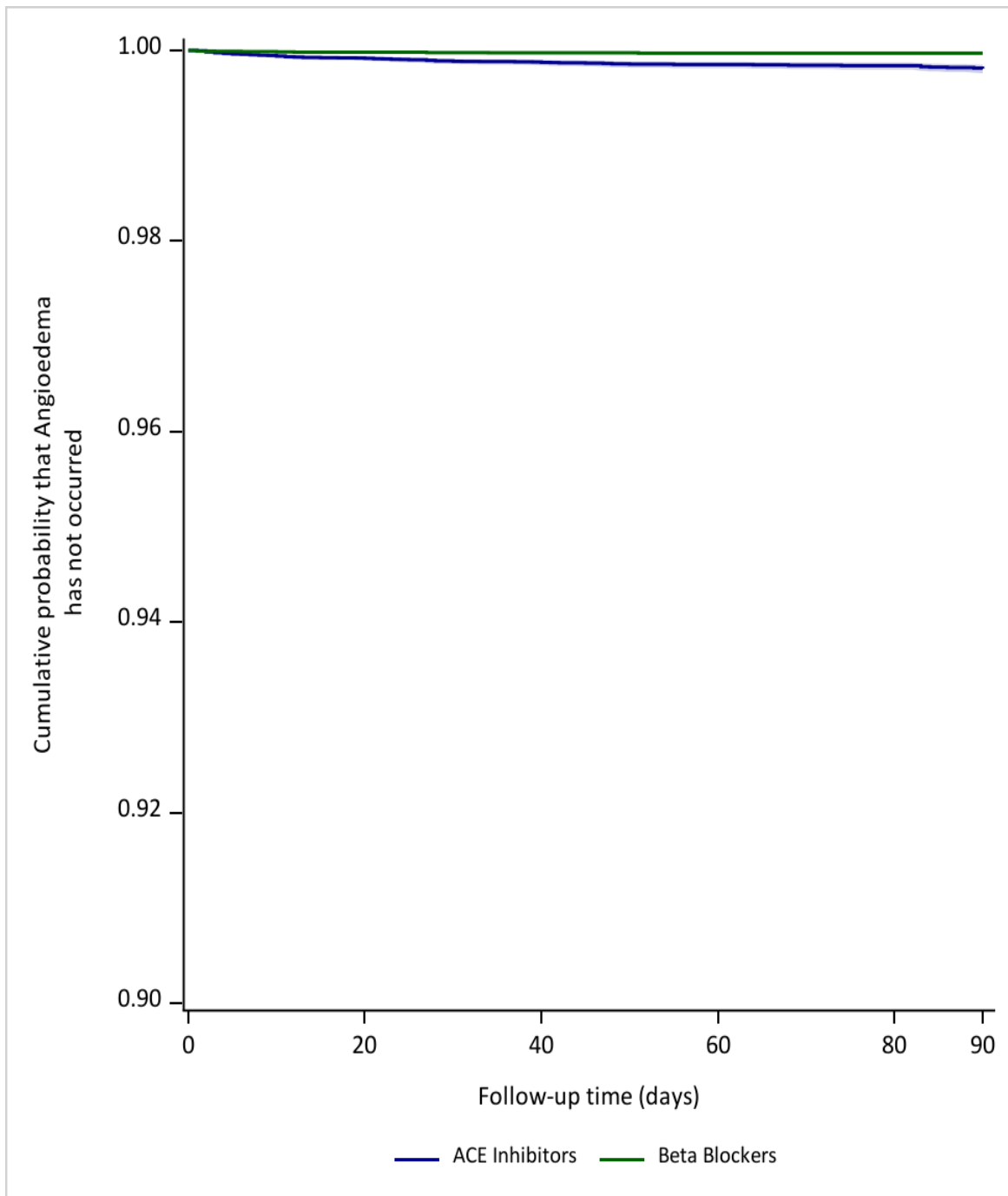


Figure 12i. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

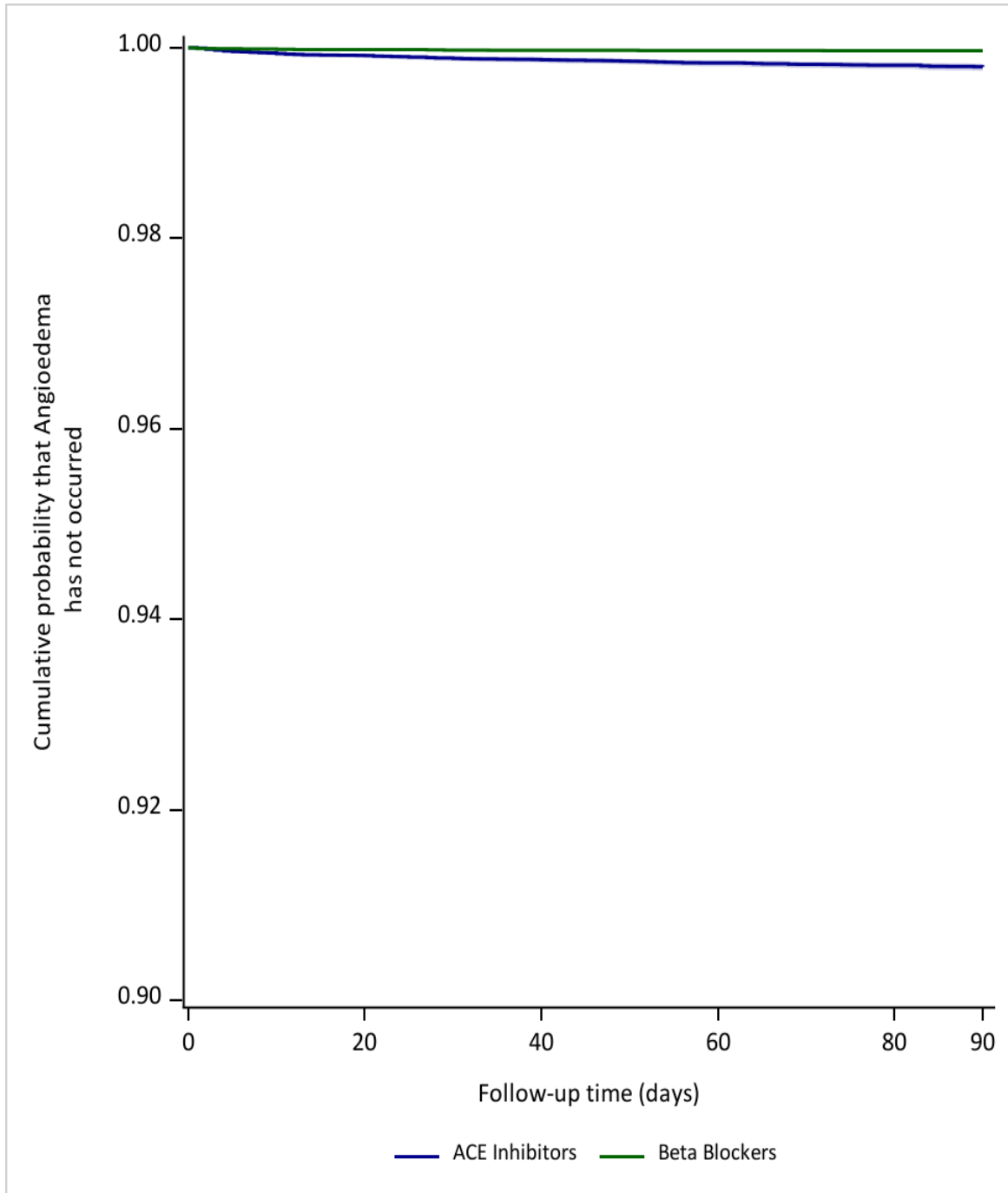


Figure 12j. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

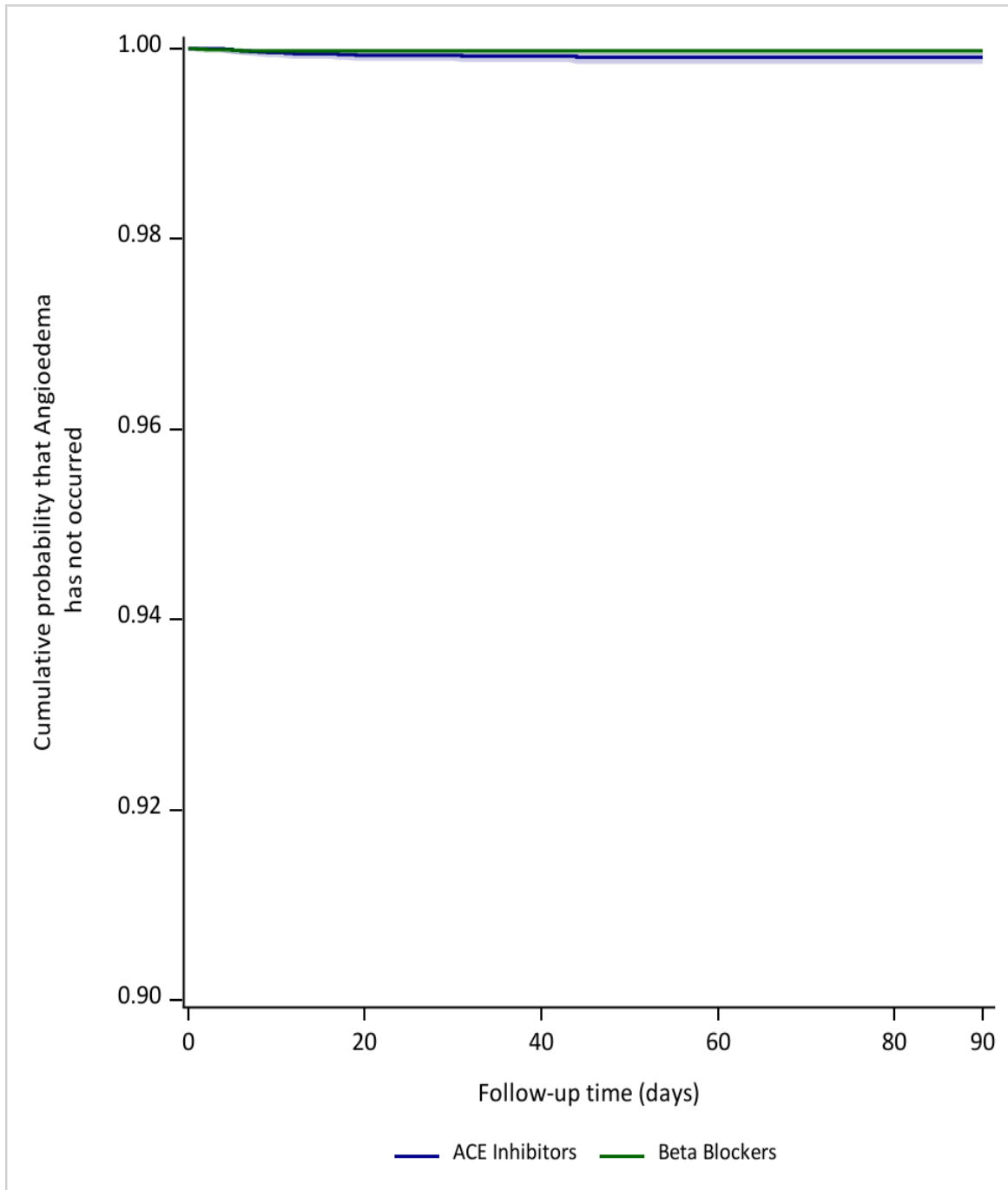


Figure 12k. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

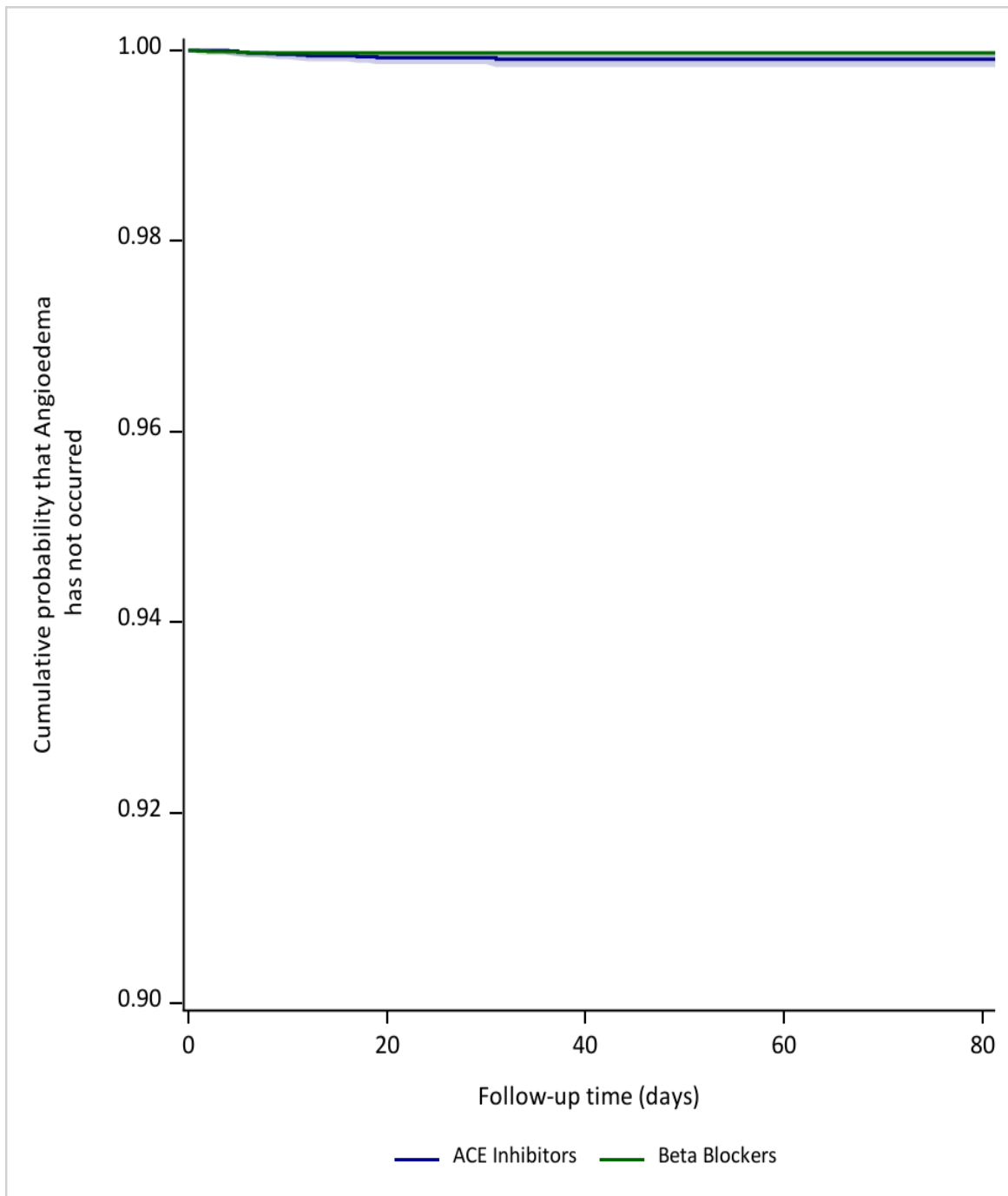


Figure 12I. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

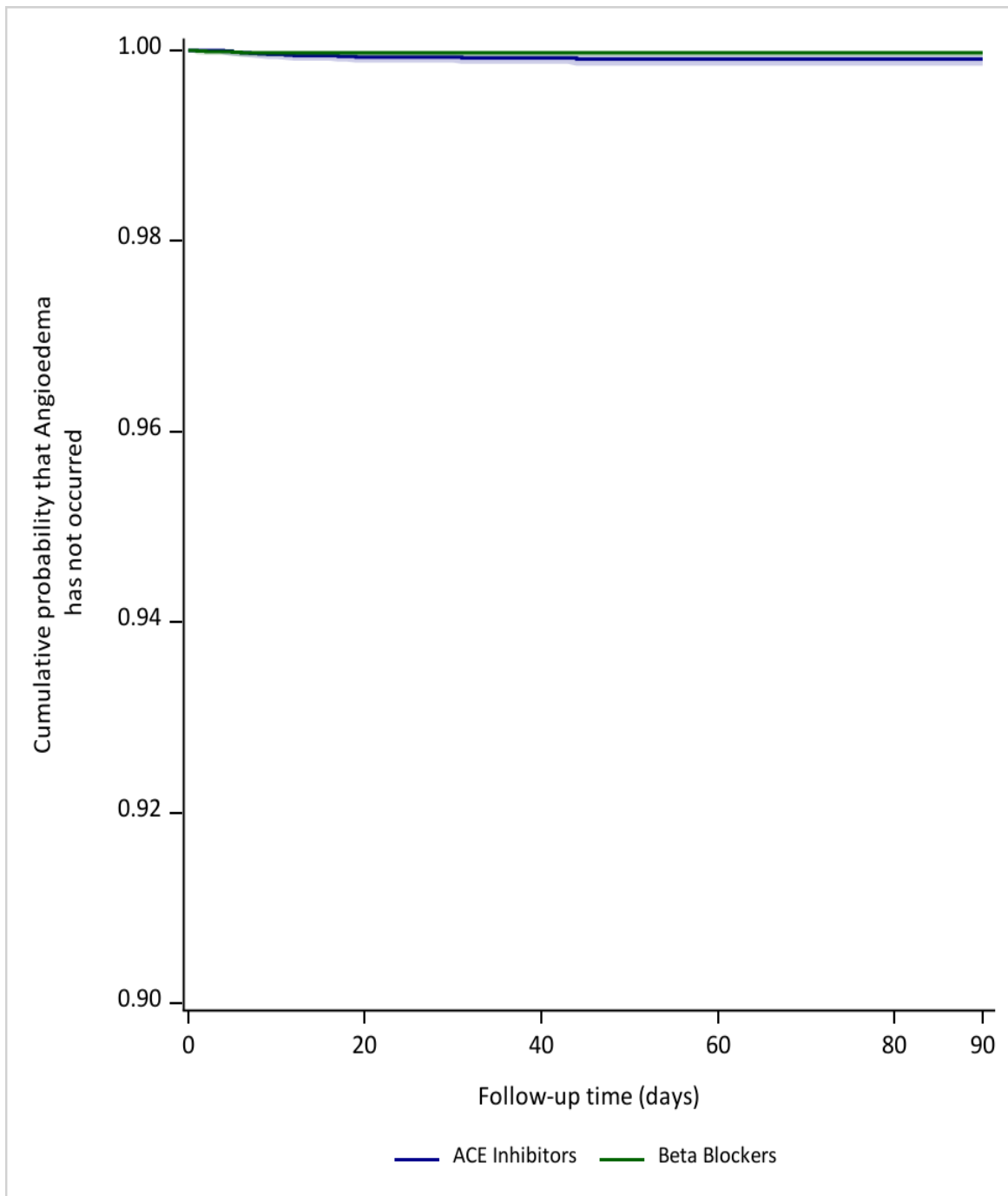


Figure 13a. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Whole Population in the Sentinel Distributed Database from September 10, 2020 to April 1, 2022

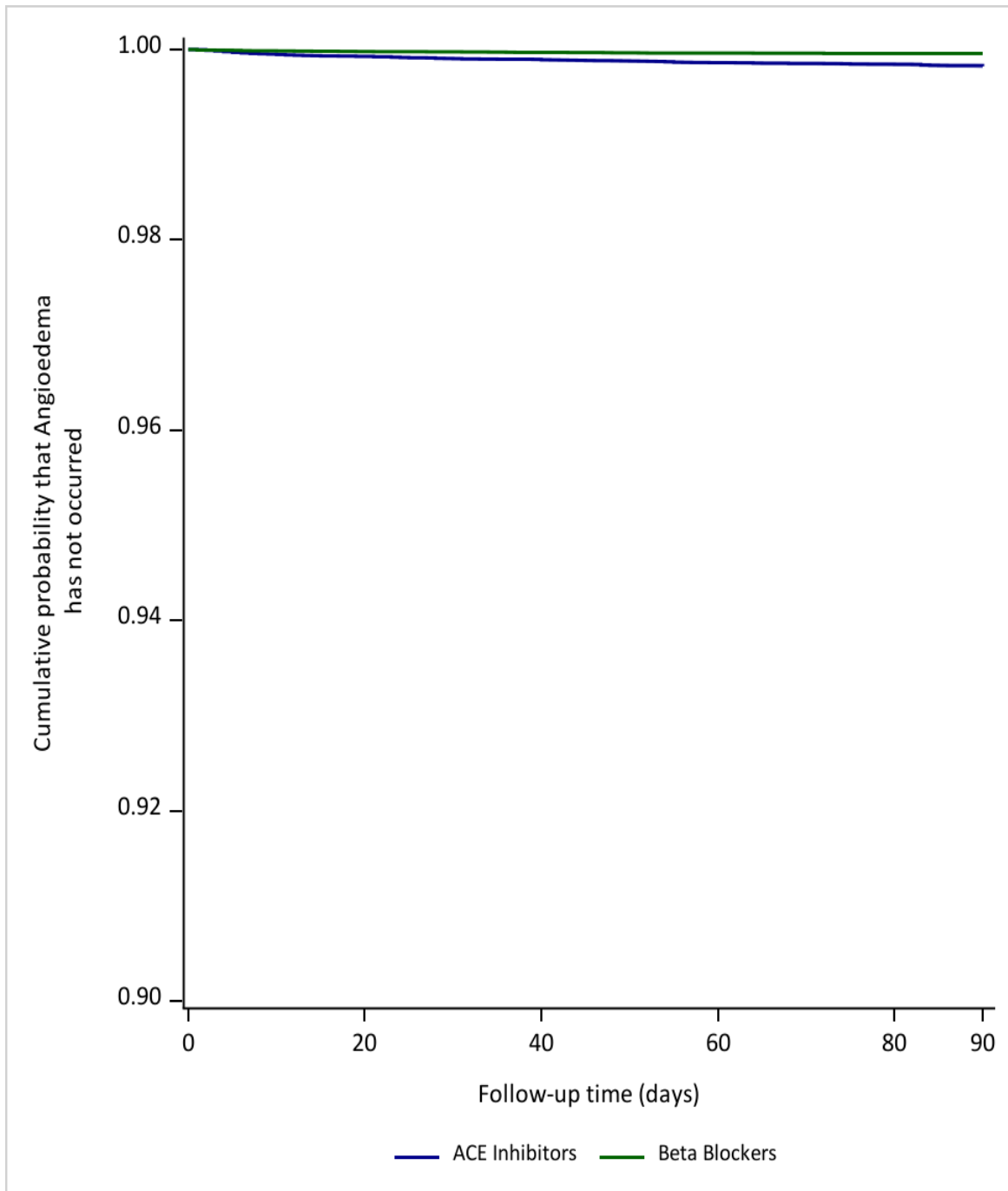


Figure 13b. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

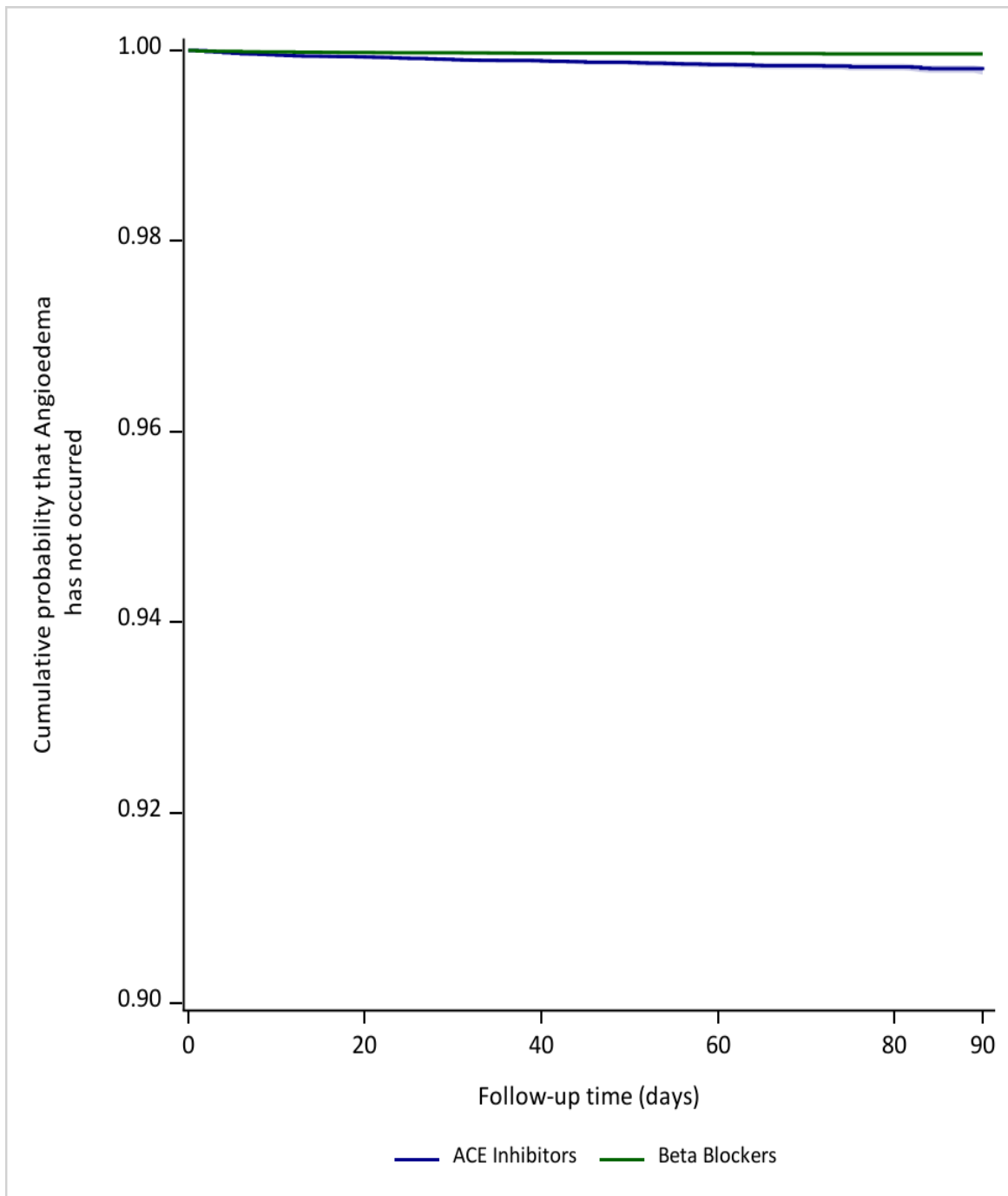


Figure 13c. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

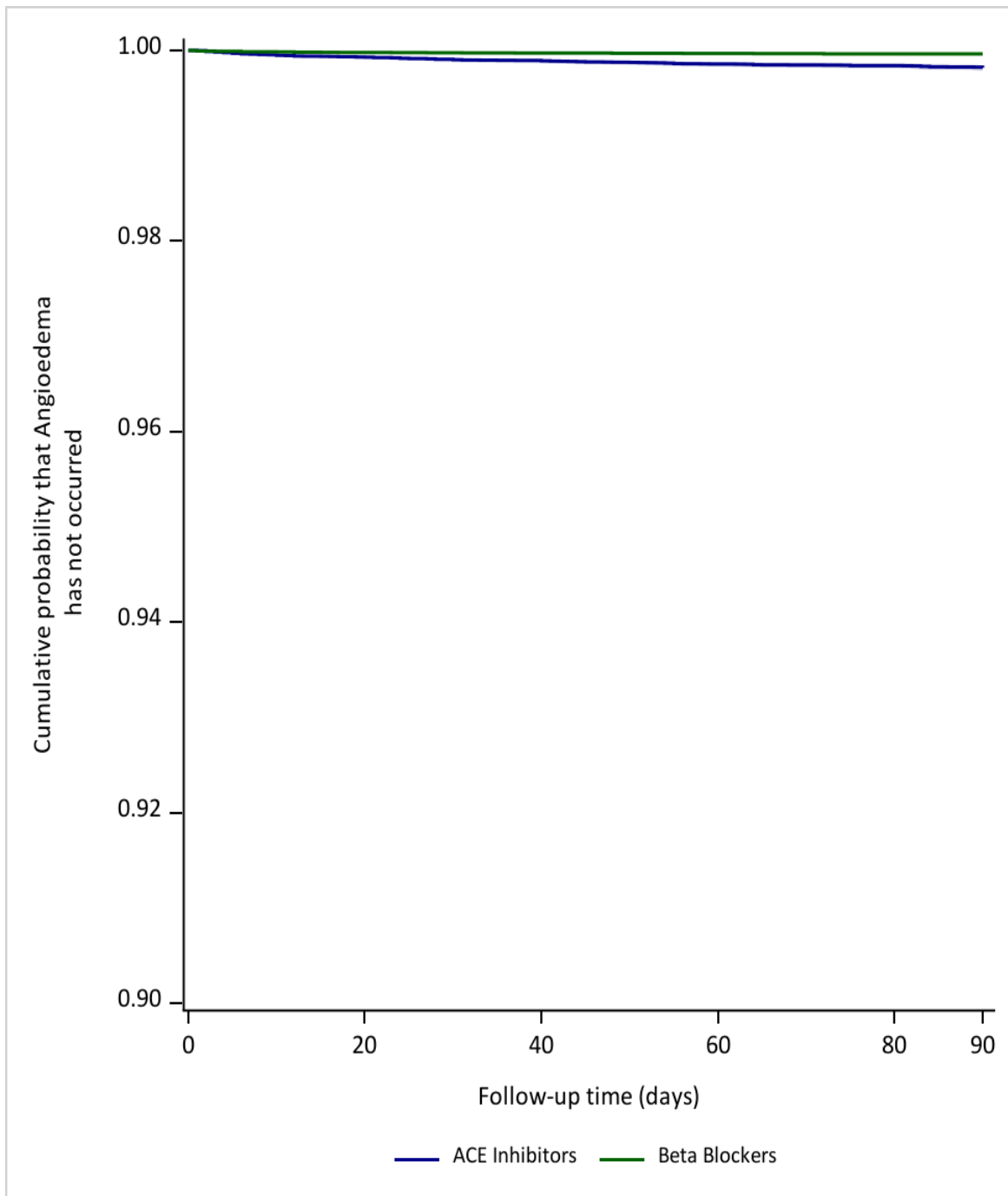


Figure 13d. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

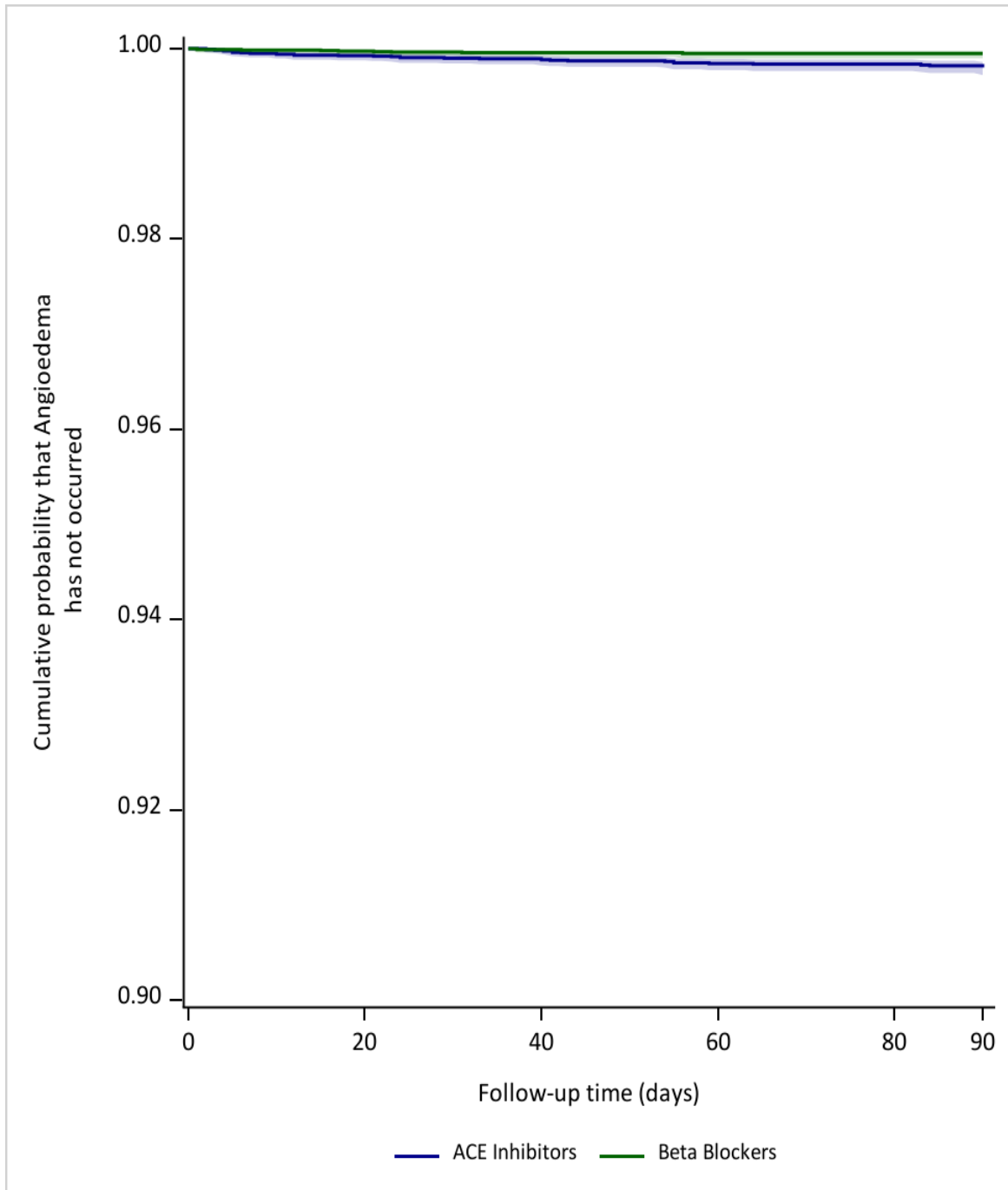


Figure 13e. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

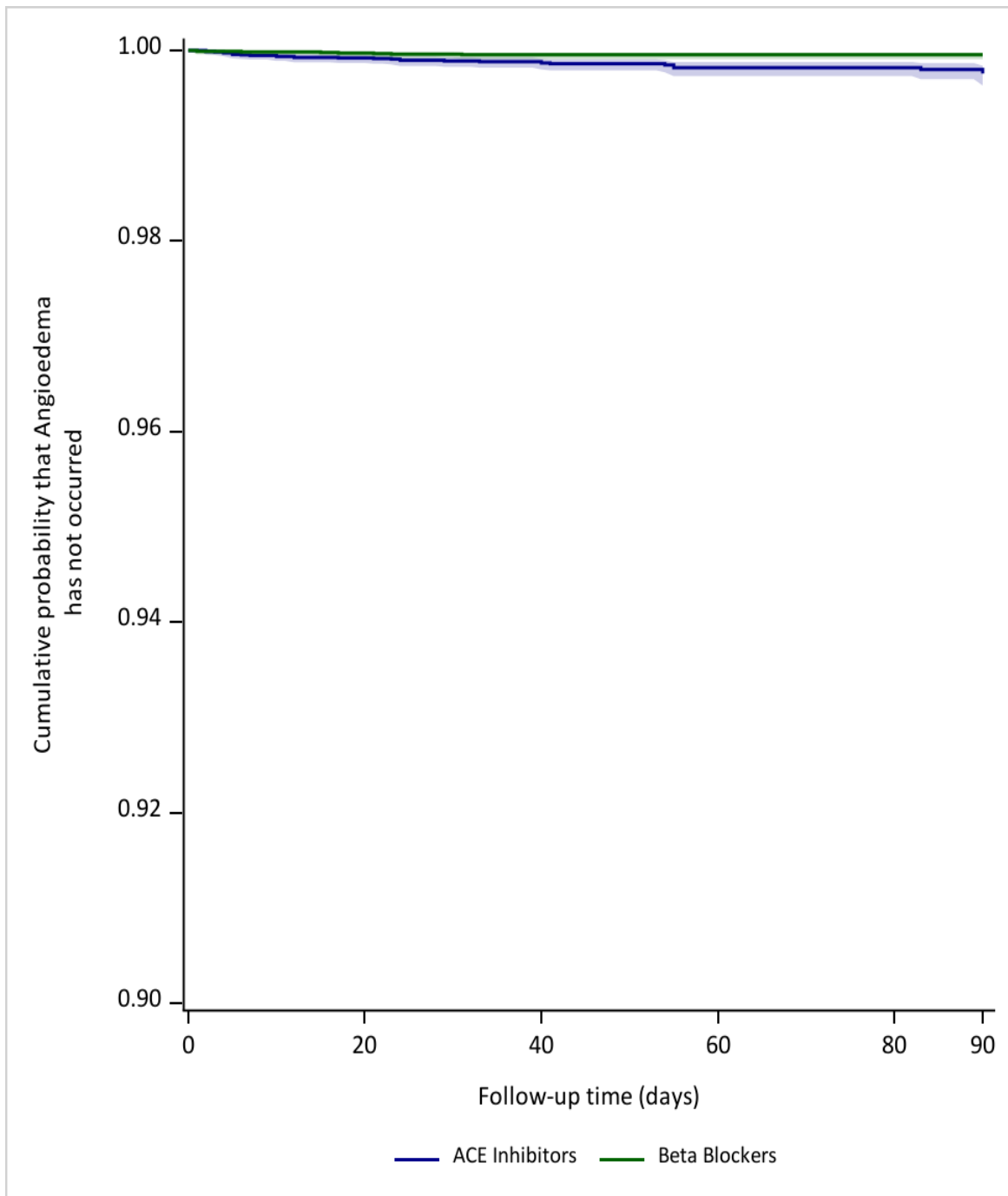


Figure 13f. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

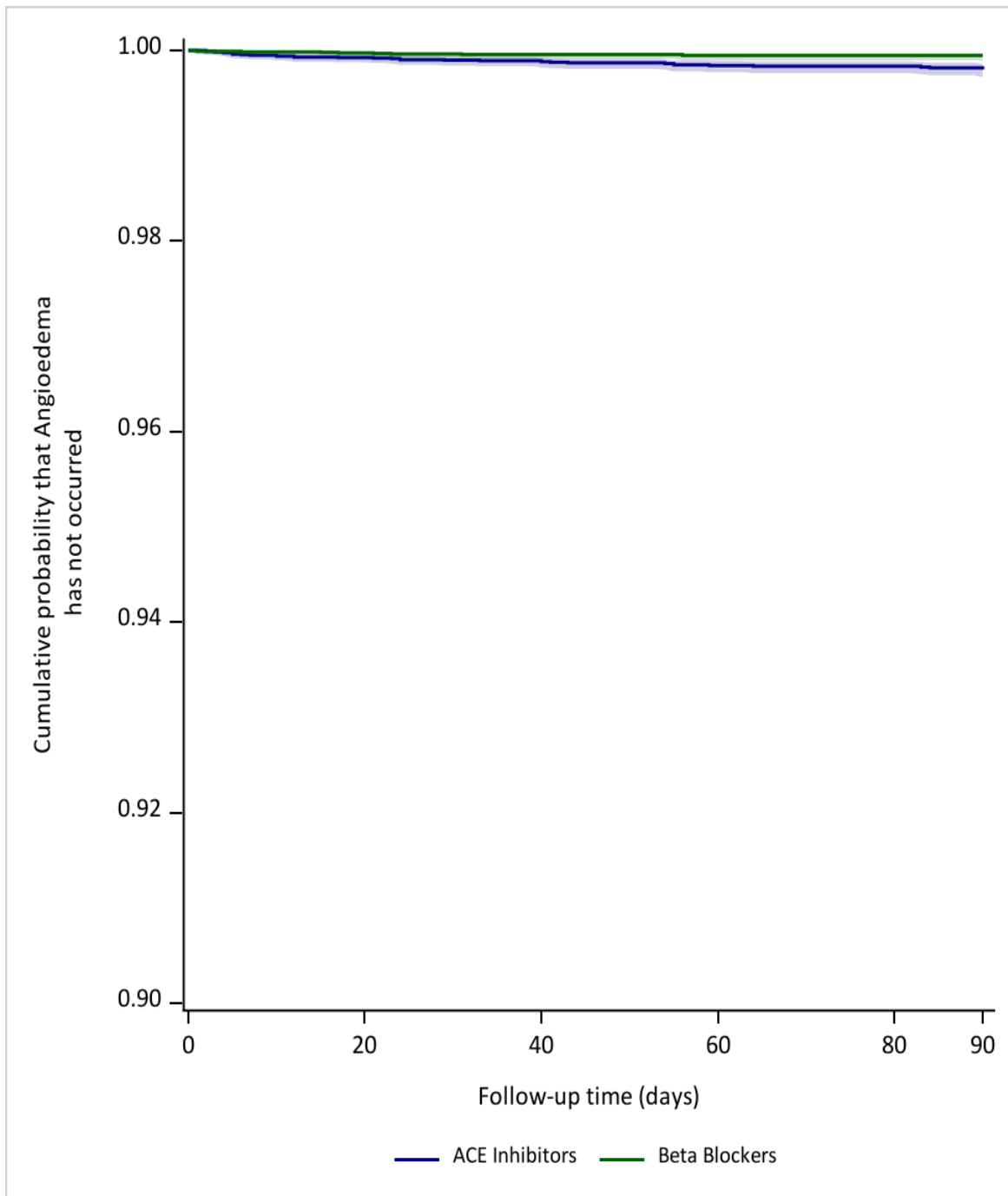


Figure 13g. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

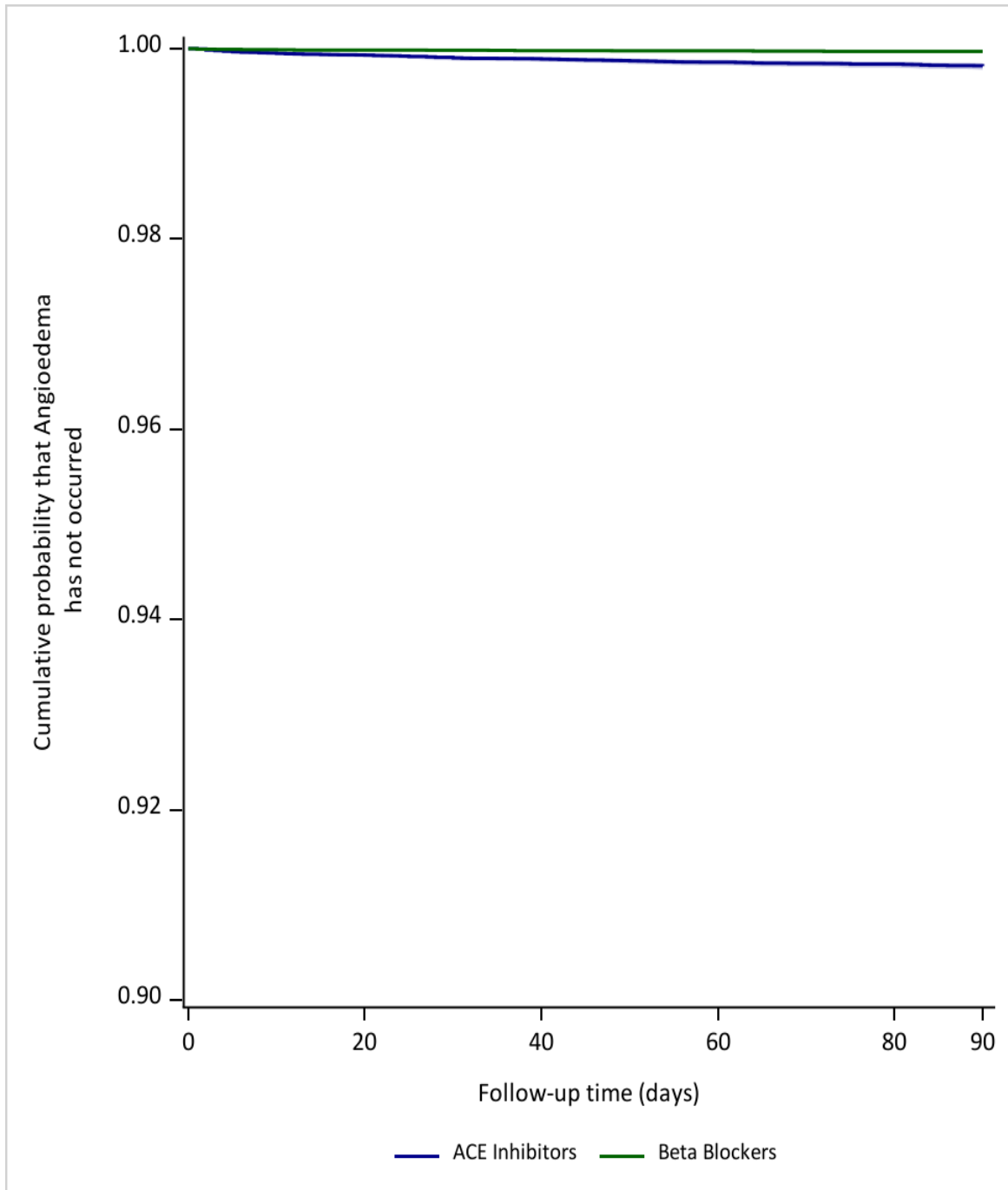


Figure 13h. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

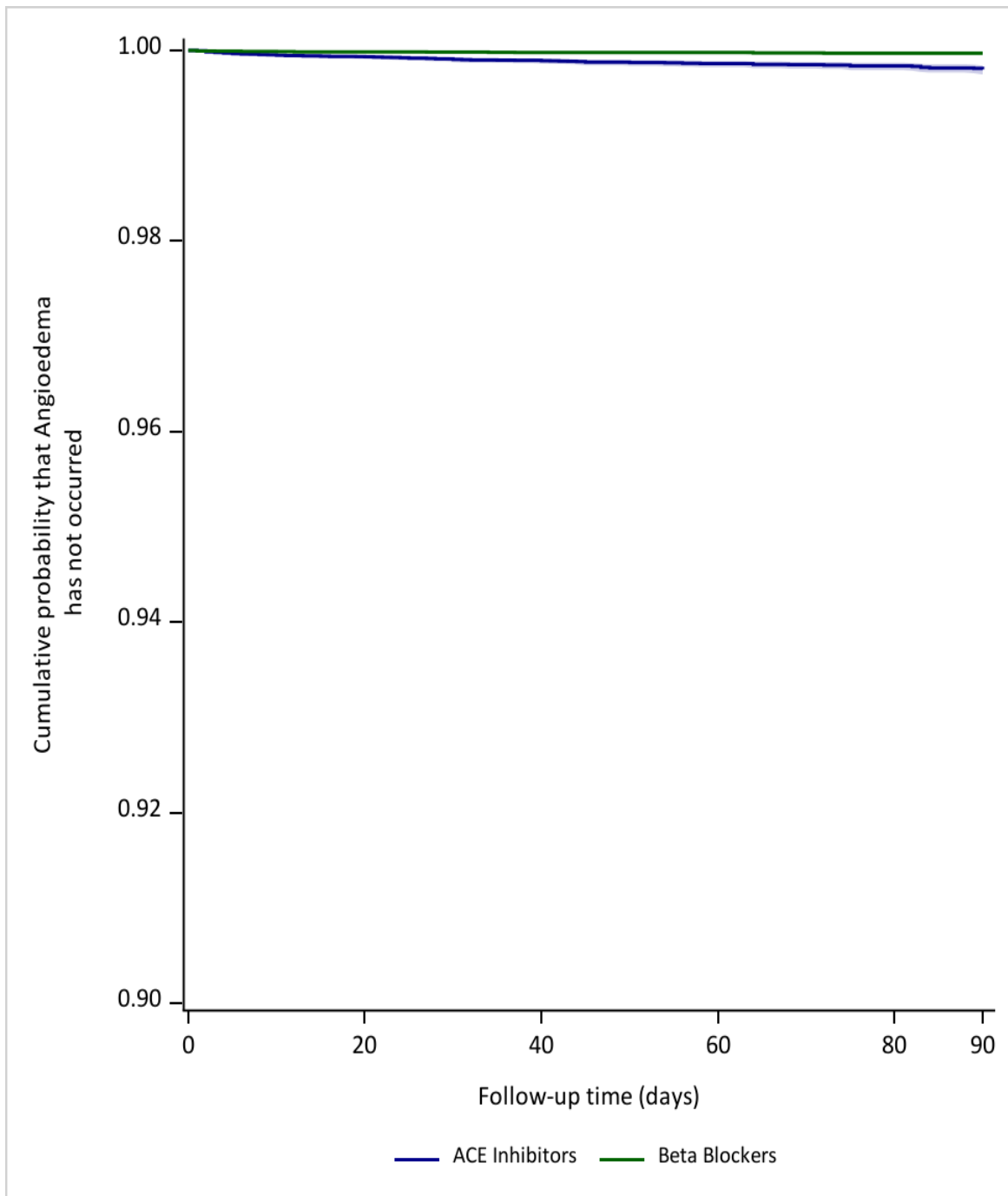


Figure 13i. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

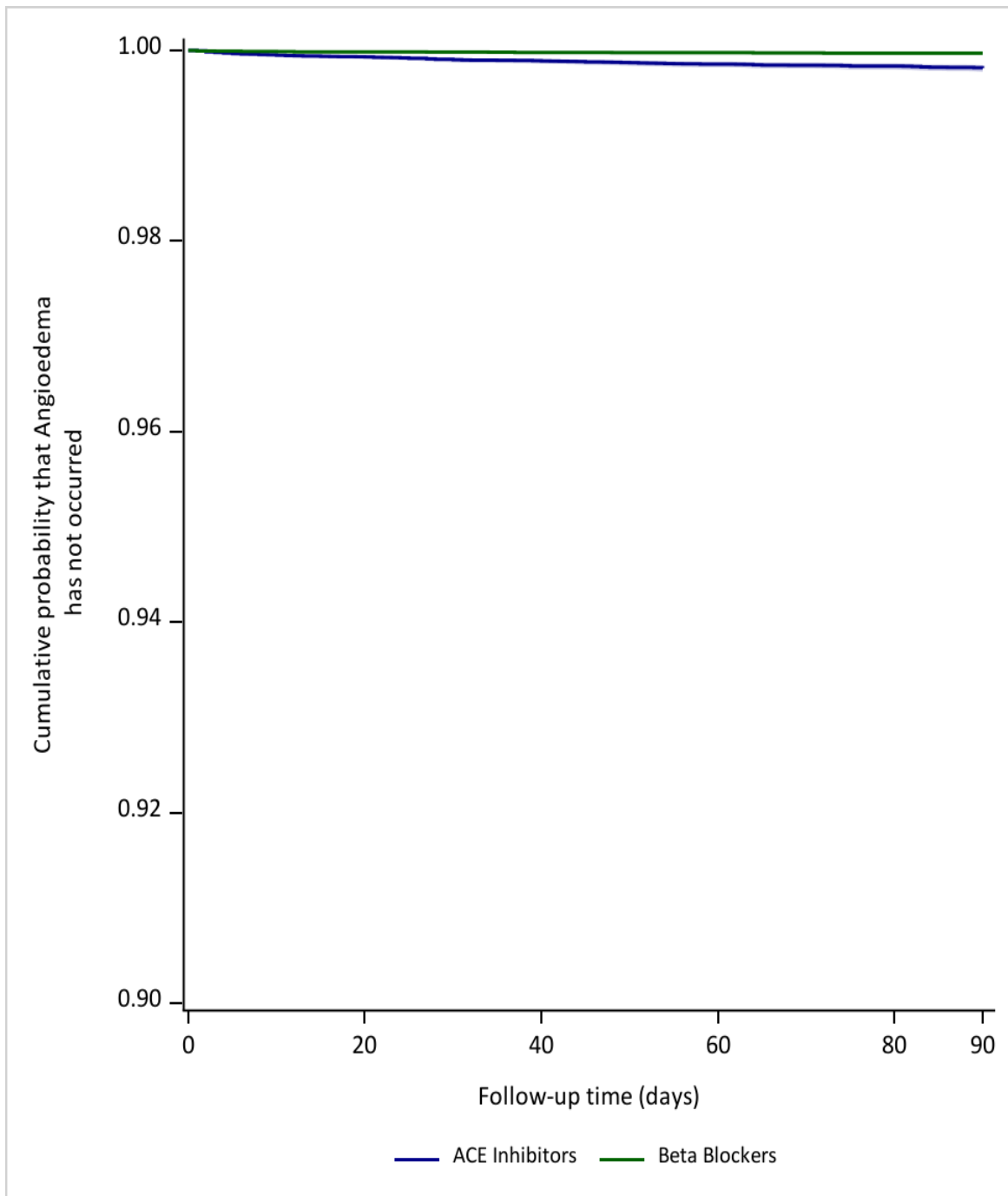


Figure 13j. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

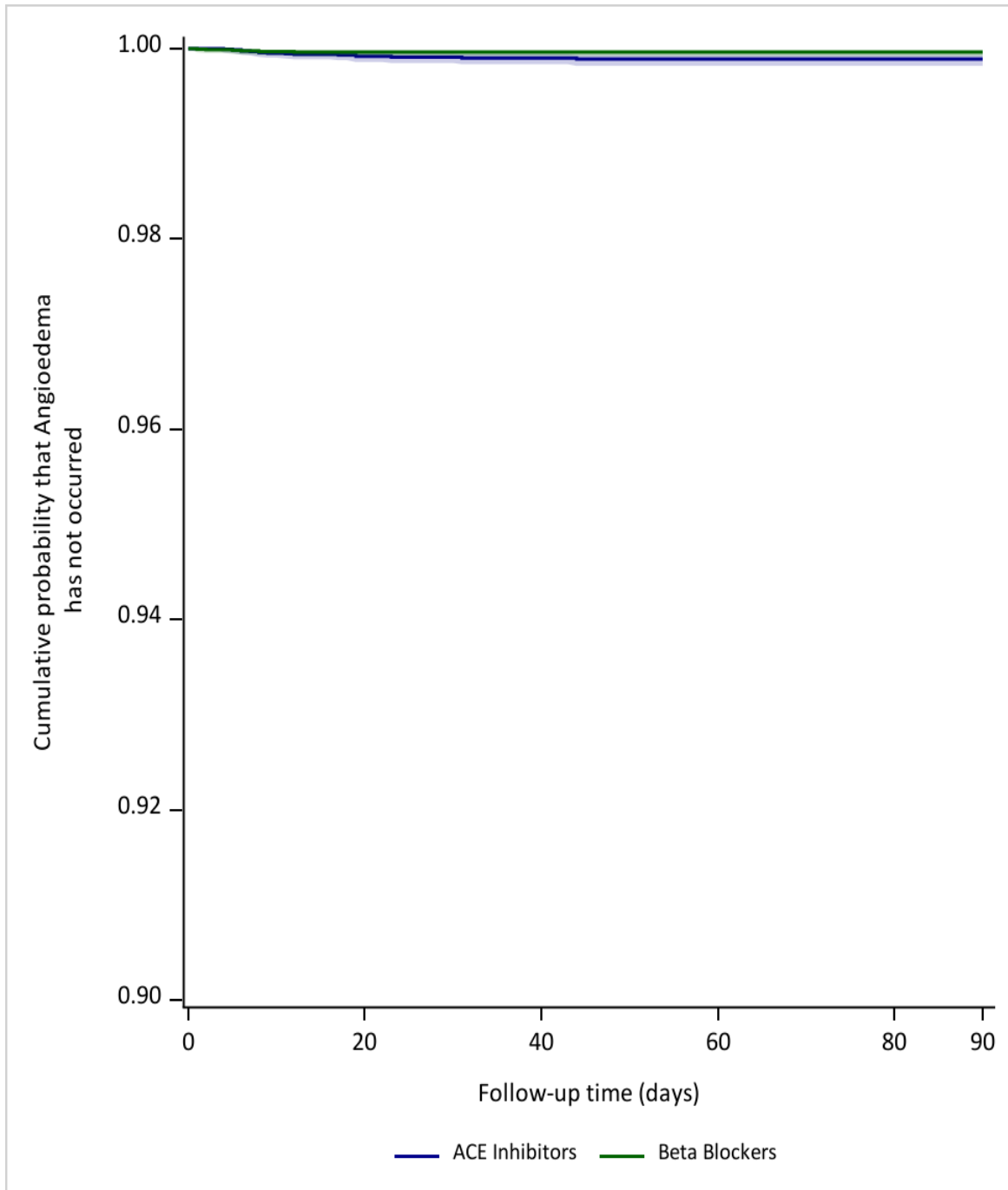


Figure 13k. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Conditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

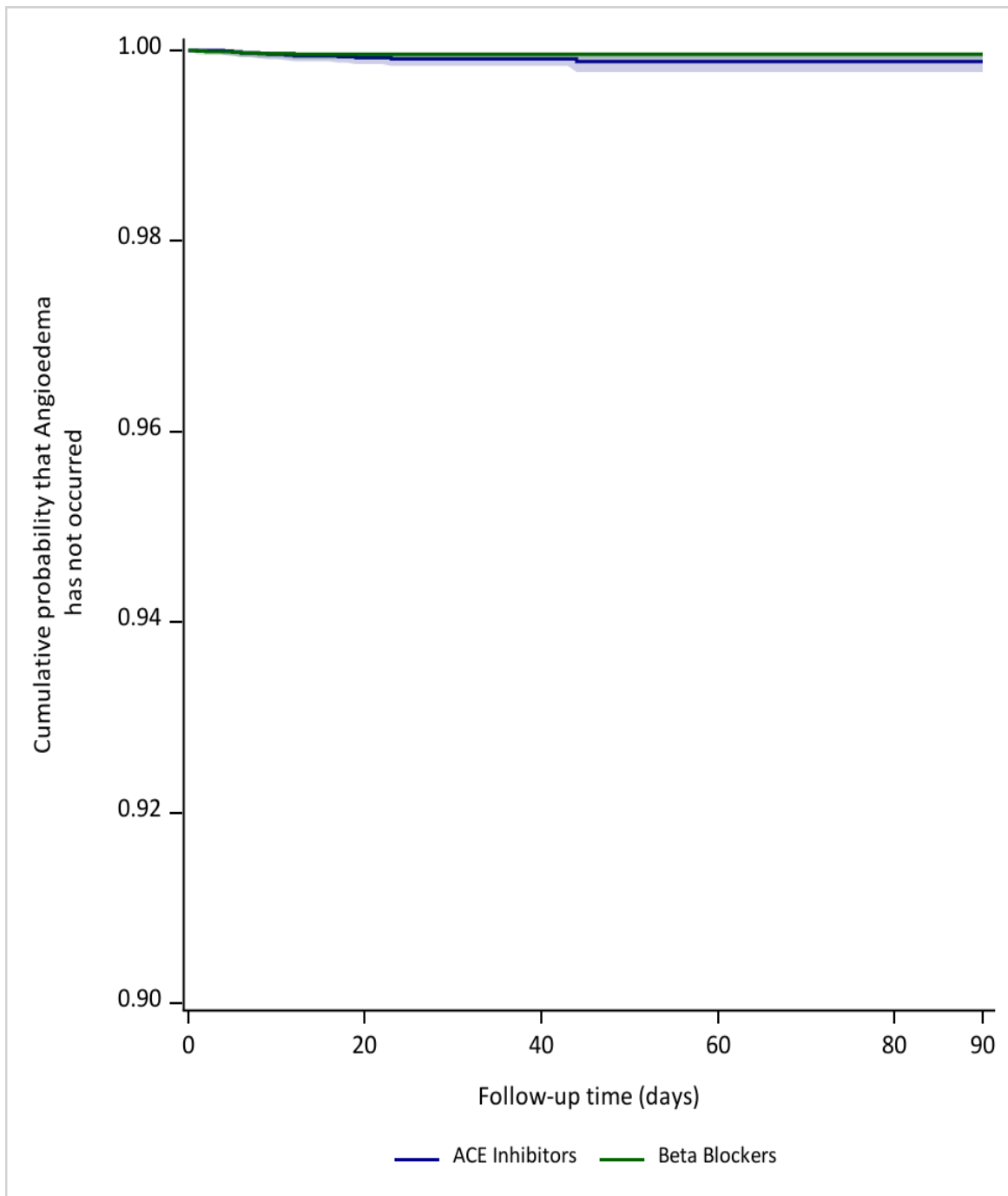


Figure 13I. Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) from the Unconditional Matched Population after New Users of ACE Inhibitors vs Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSM) in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

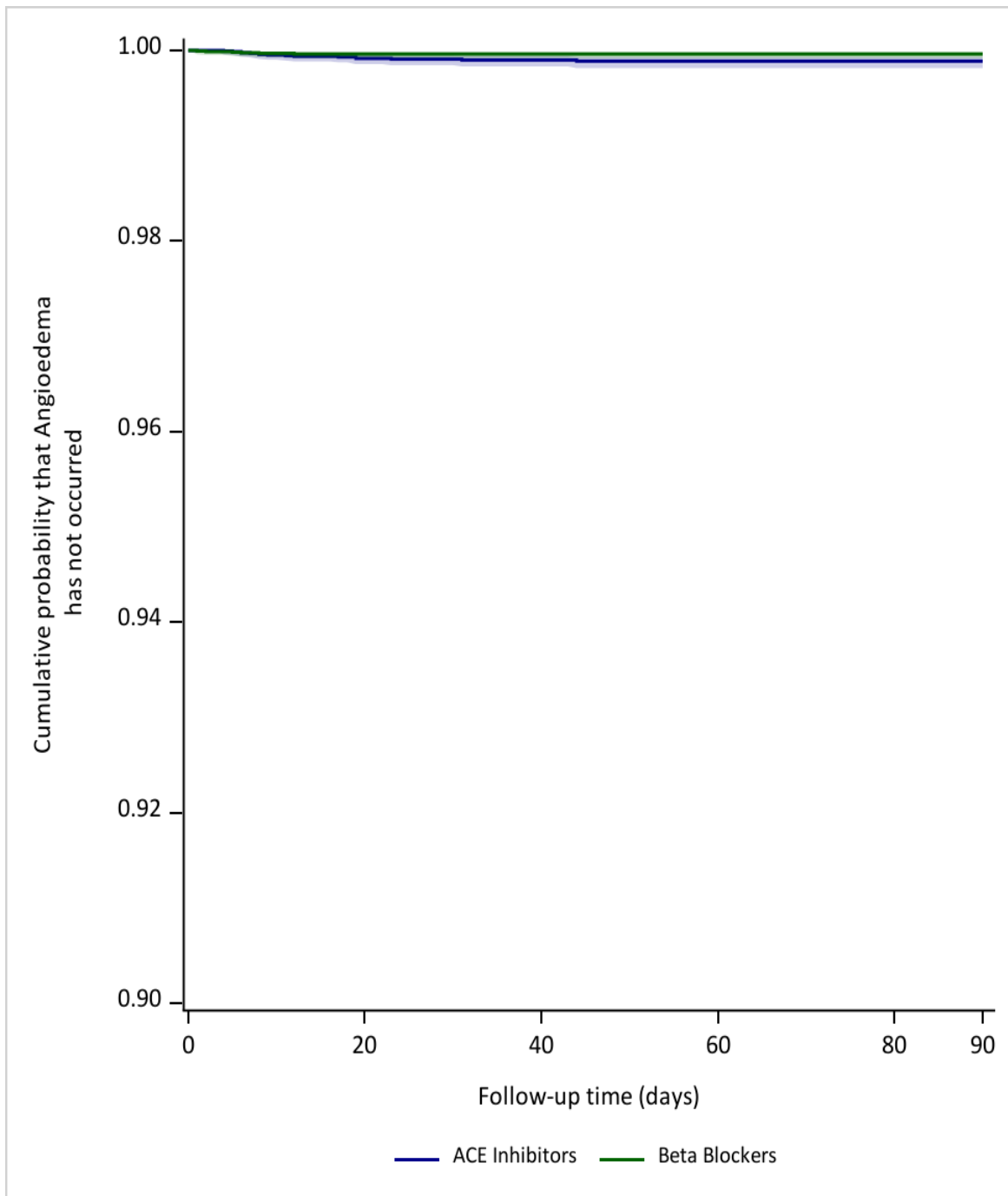


Figure 14a. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

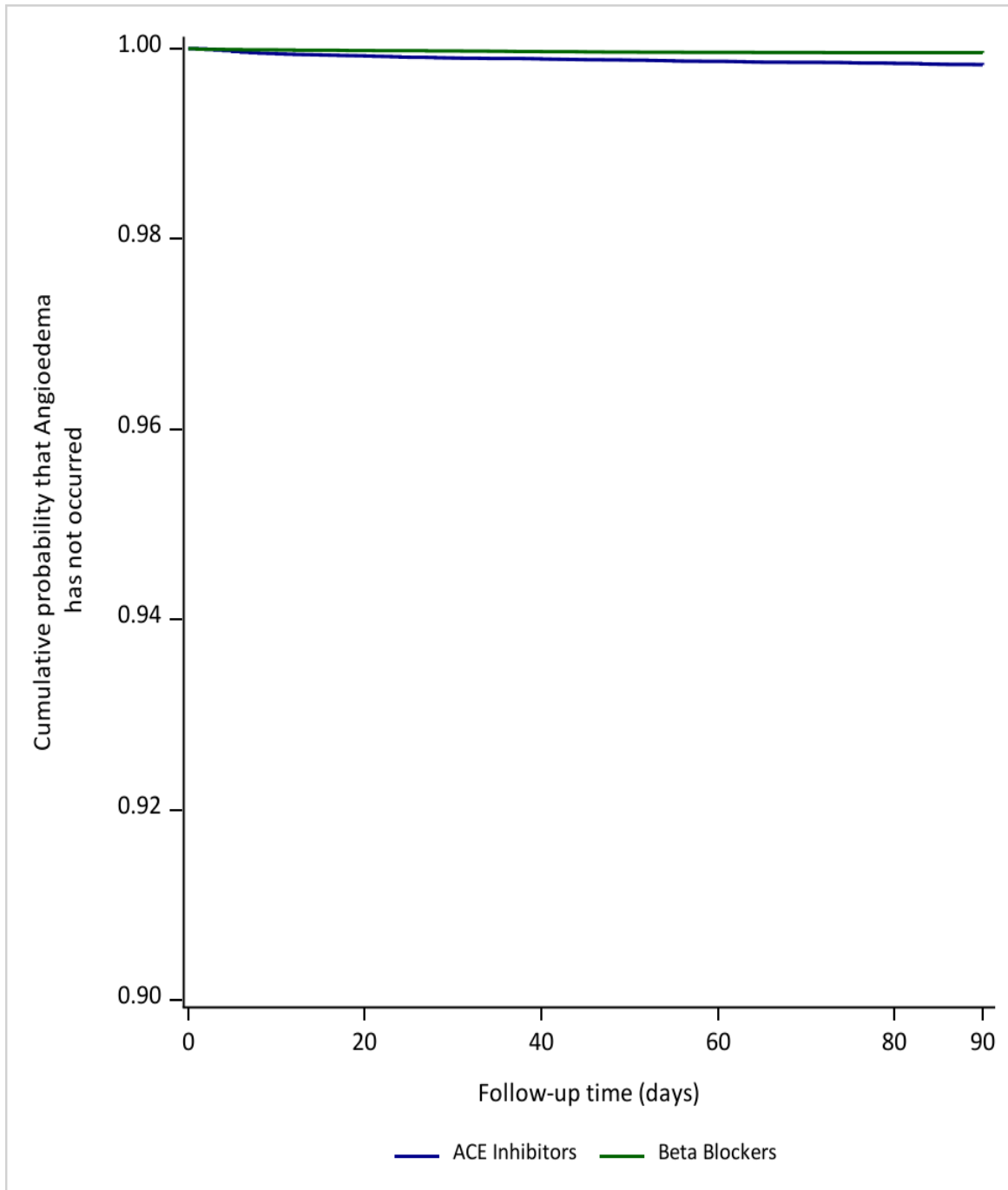


Figure 14b. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

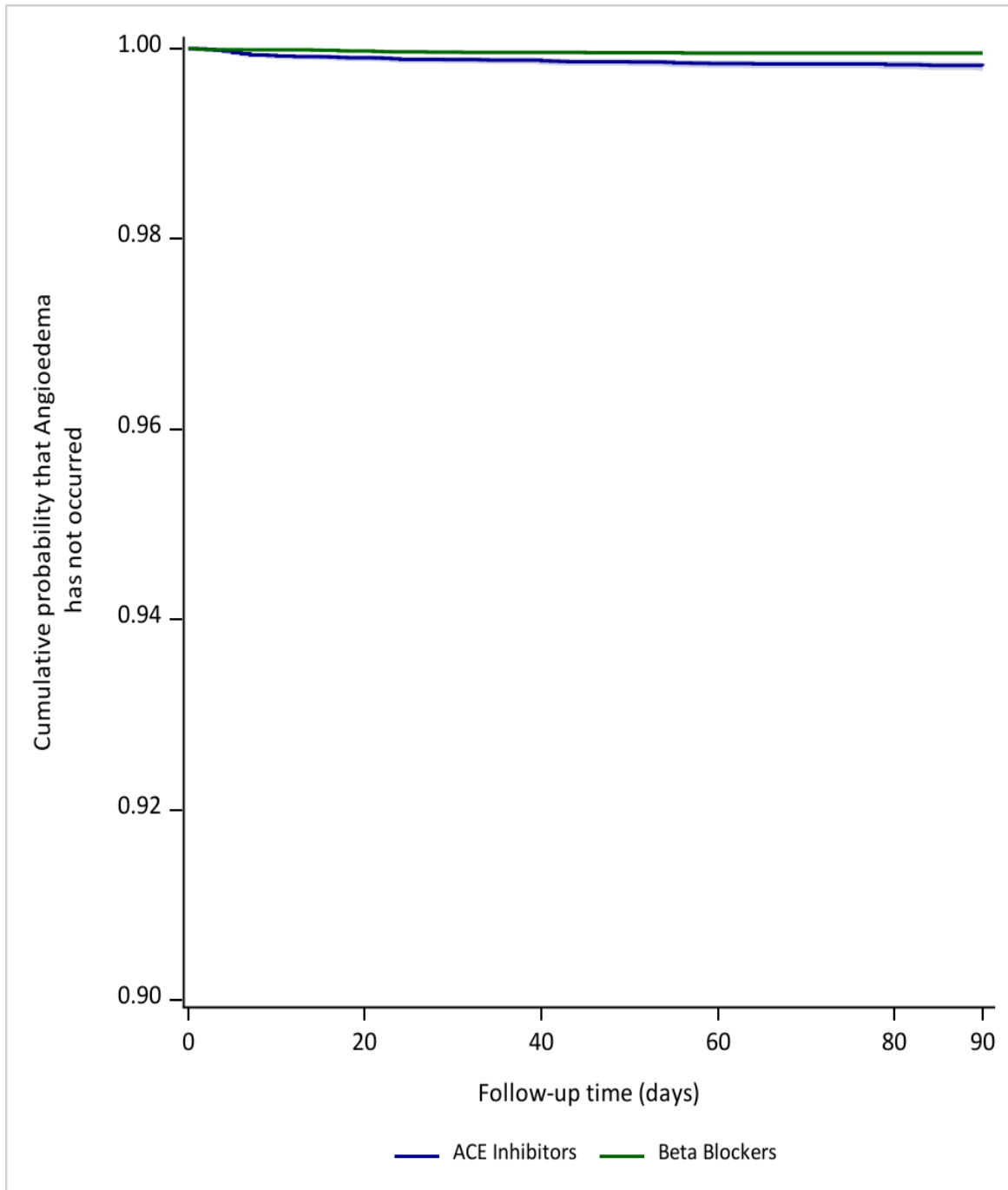


Figure 14c. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

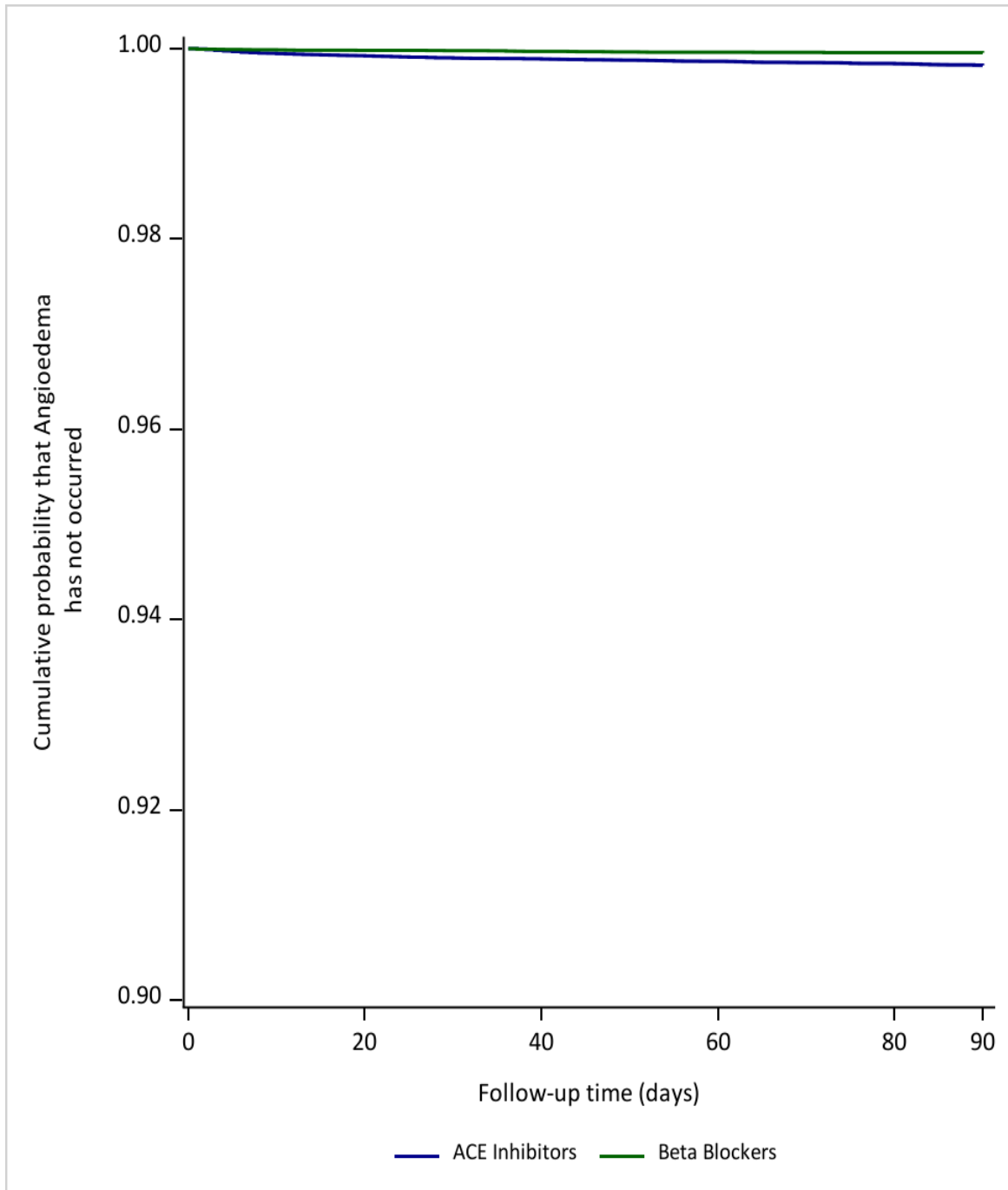


Figure 14d. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model without Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

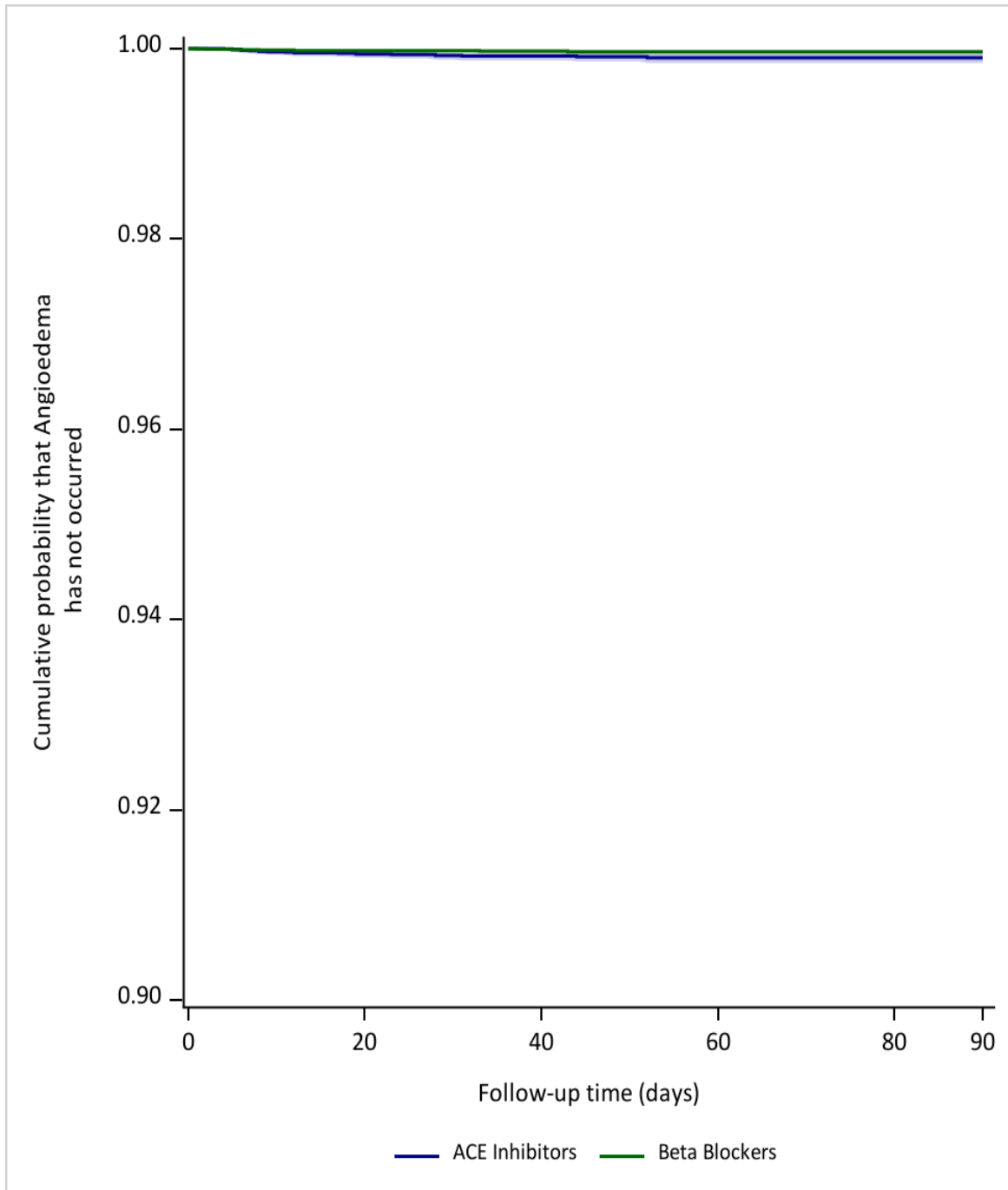


Figure 15a. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

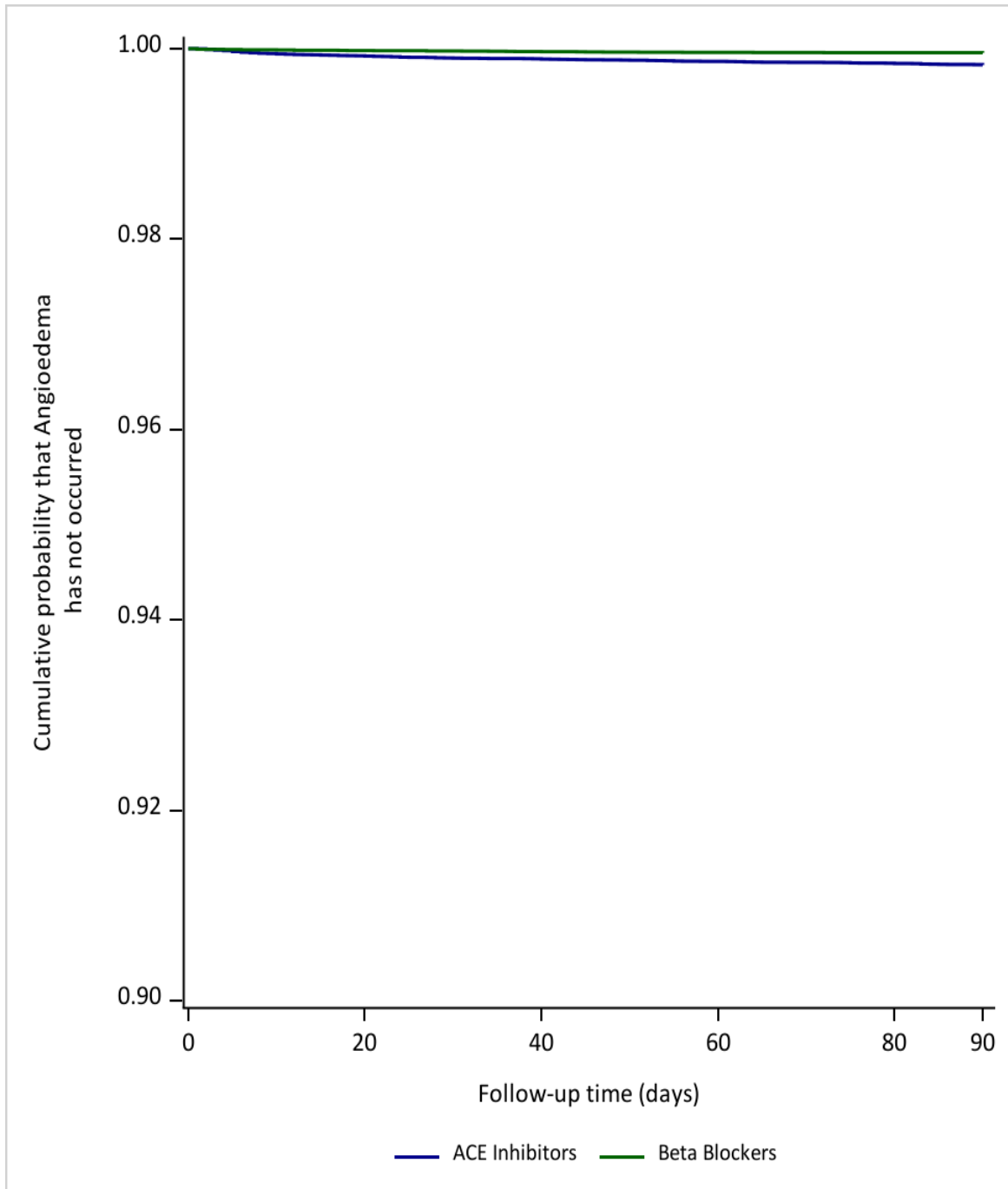


Figure 15b. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

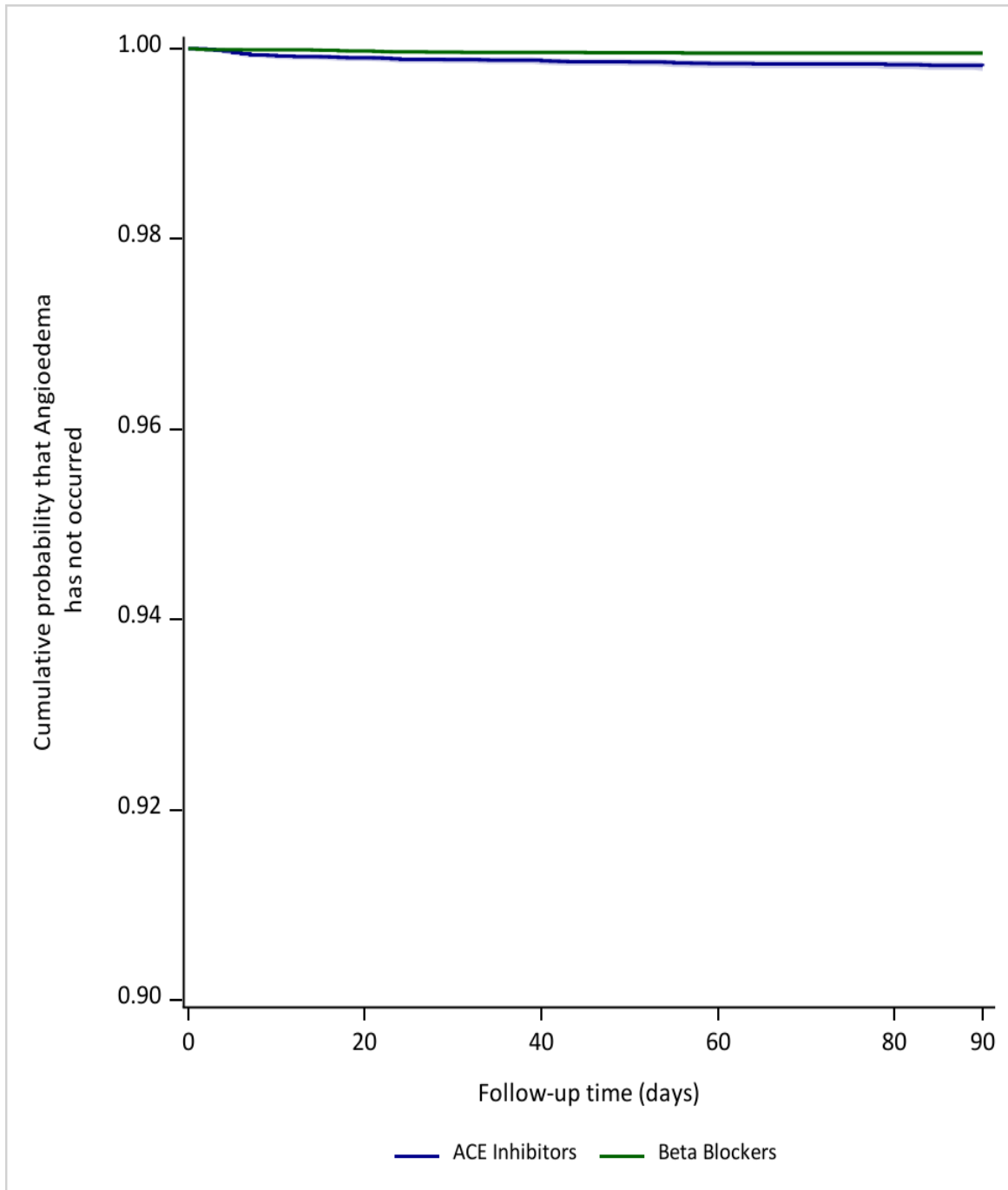


Figure 15c. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

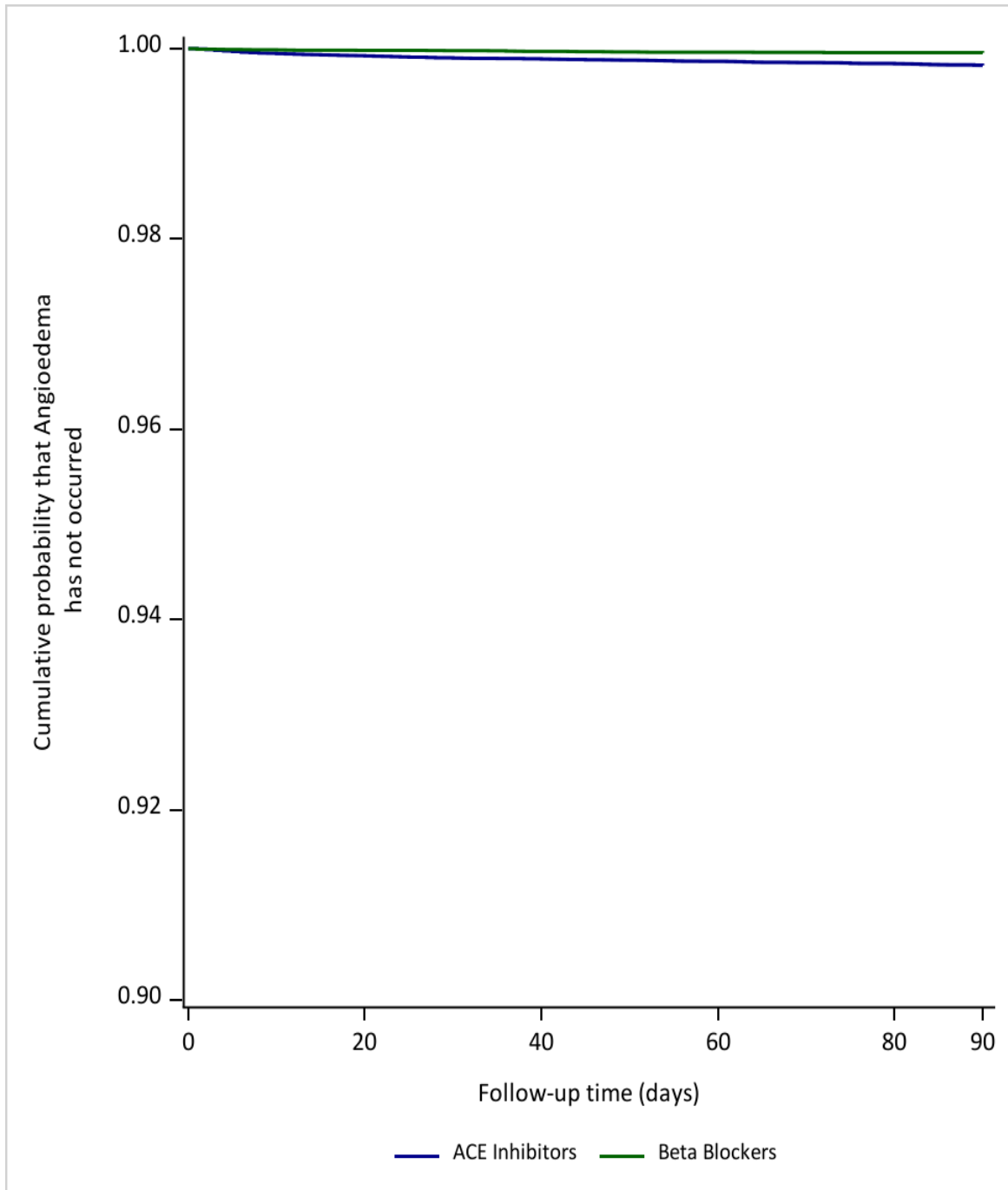


Figure 15d. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Short Lookback, Propensity Score Model with Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

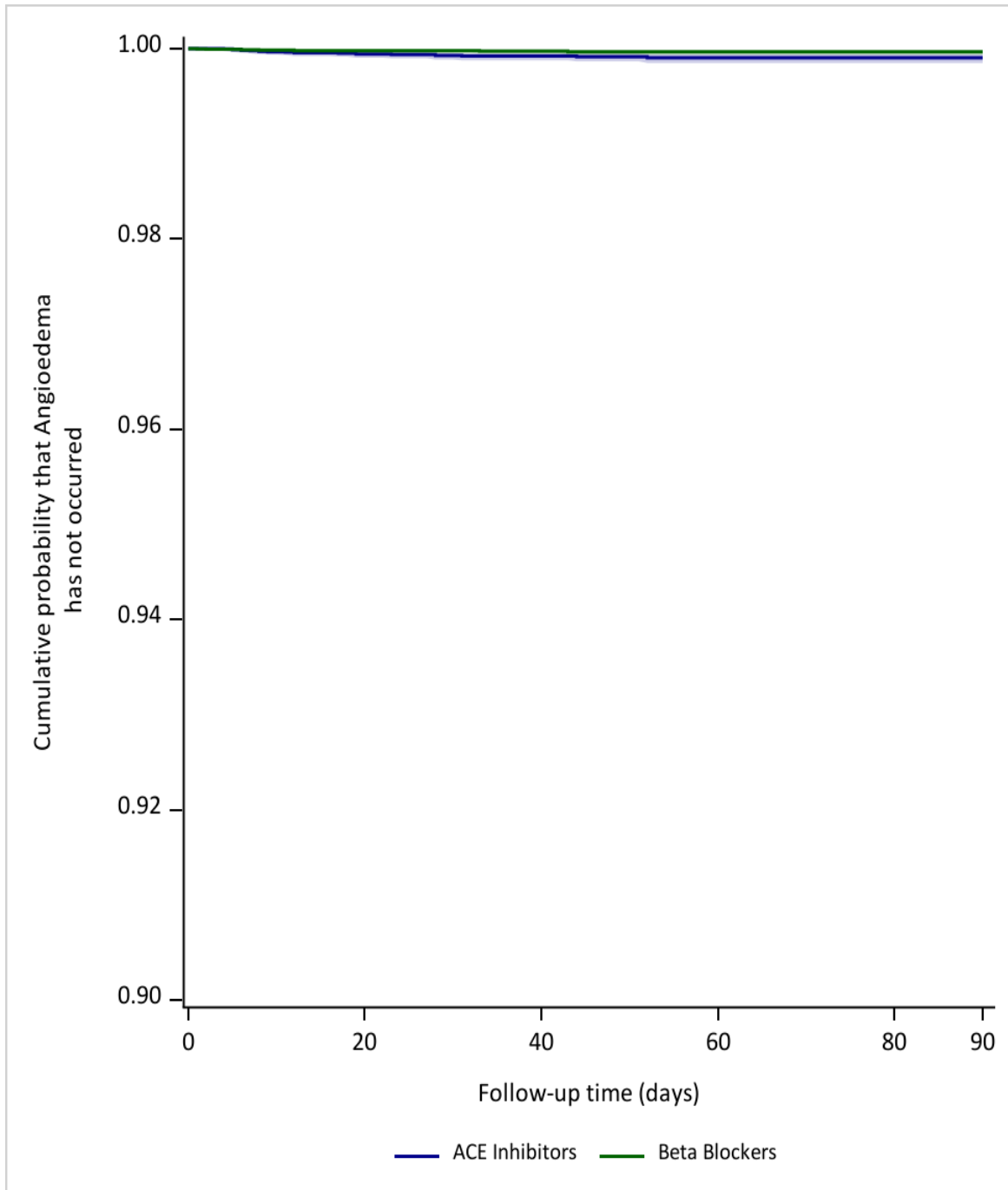


Figure 16a. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

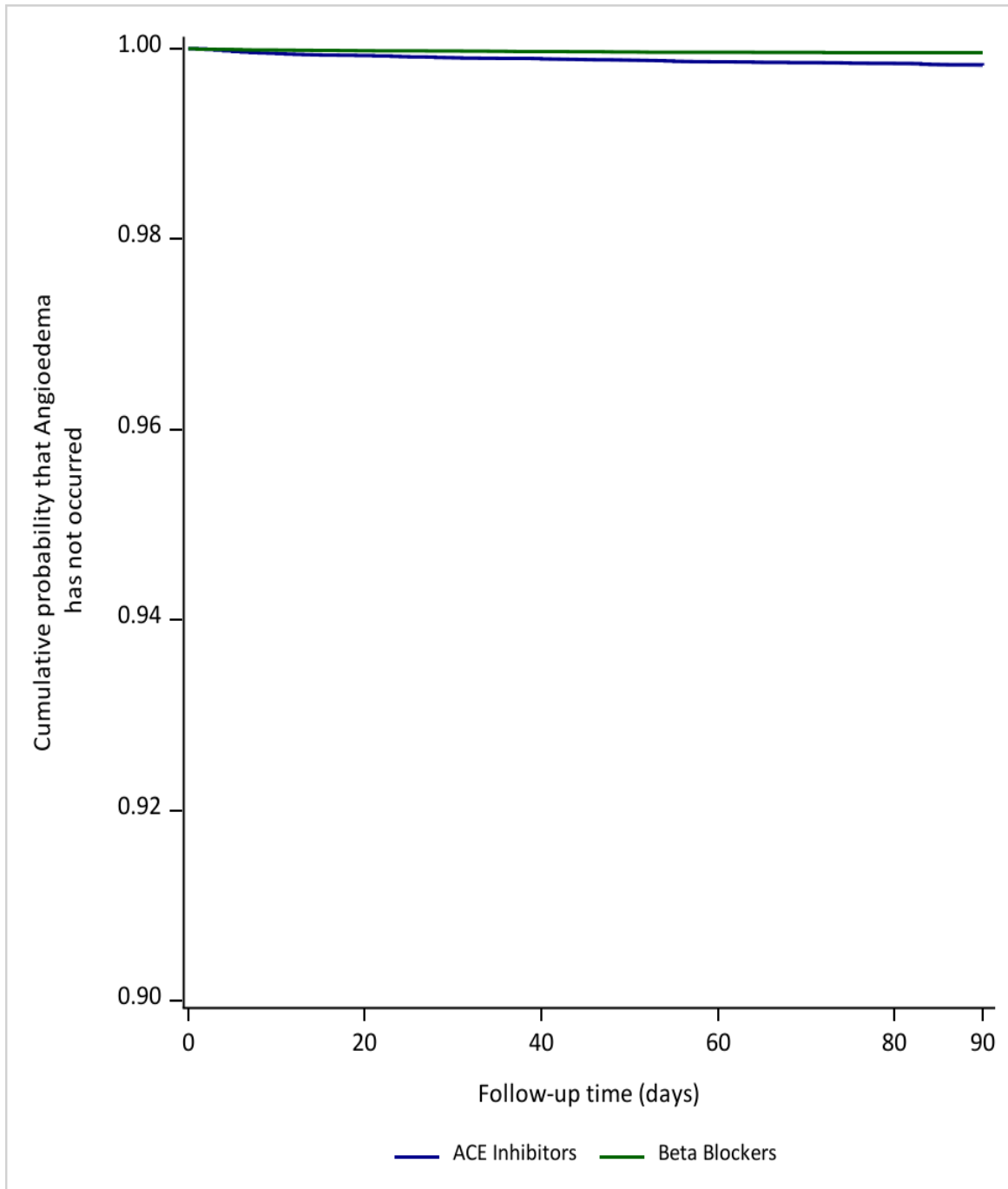


Figure 16b. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

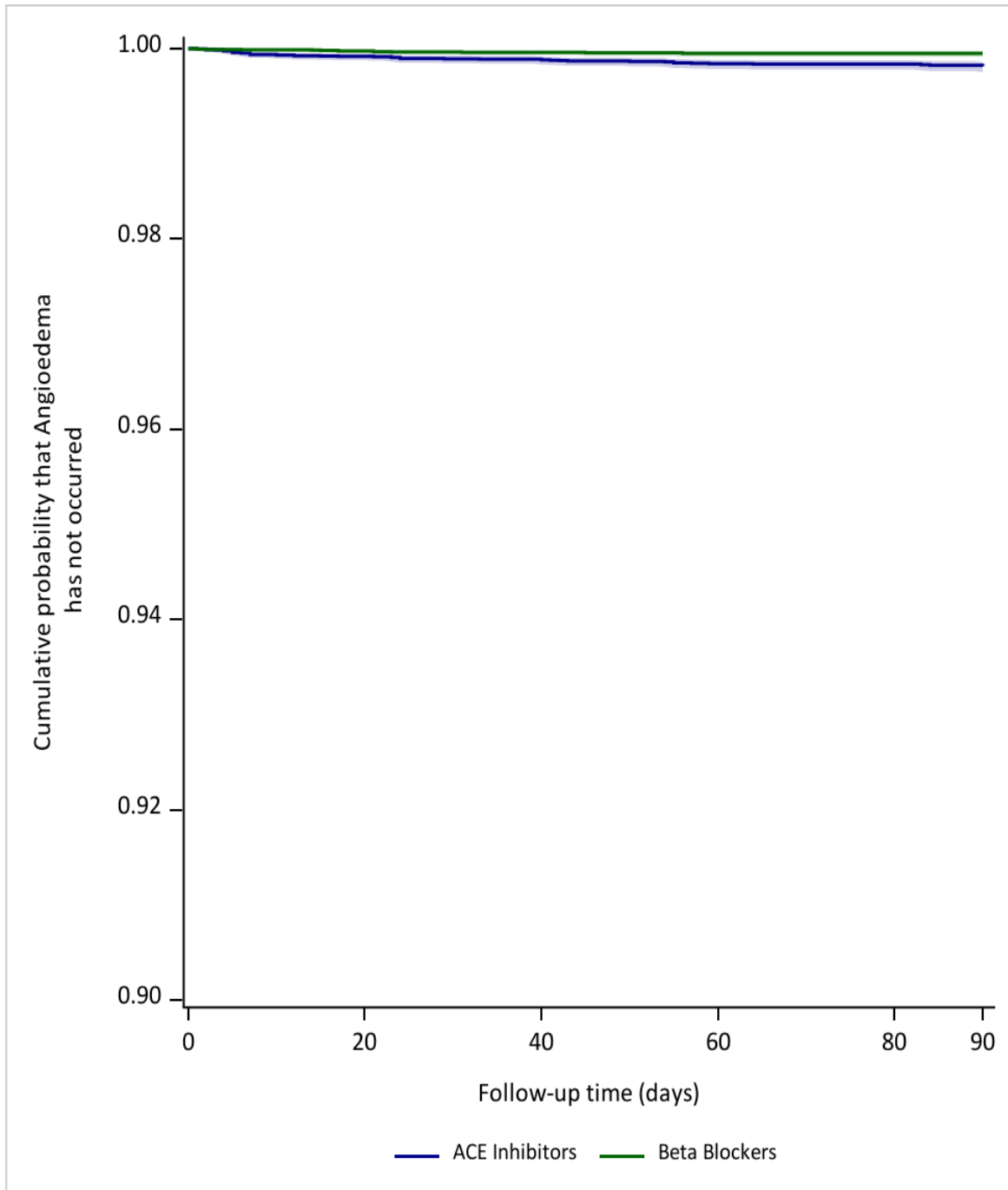


Figure 16c. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

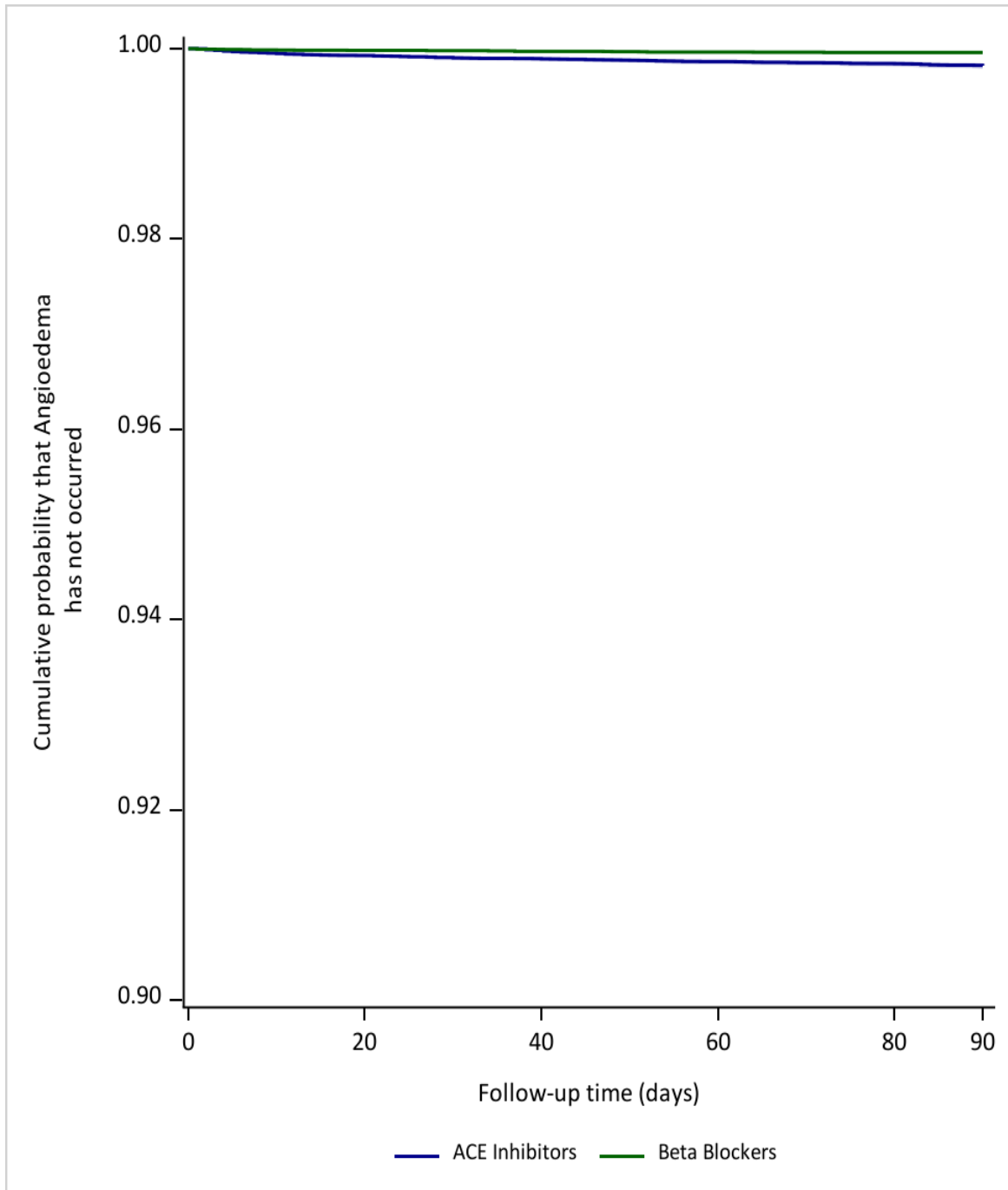


Figure 16d. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model without Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022

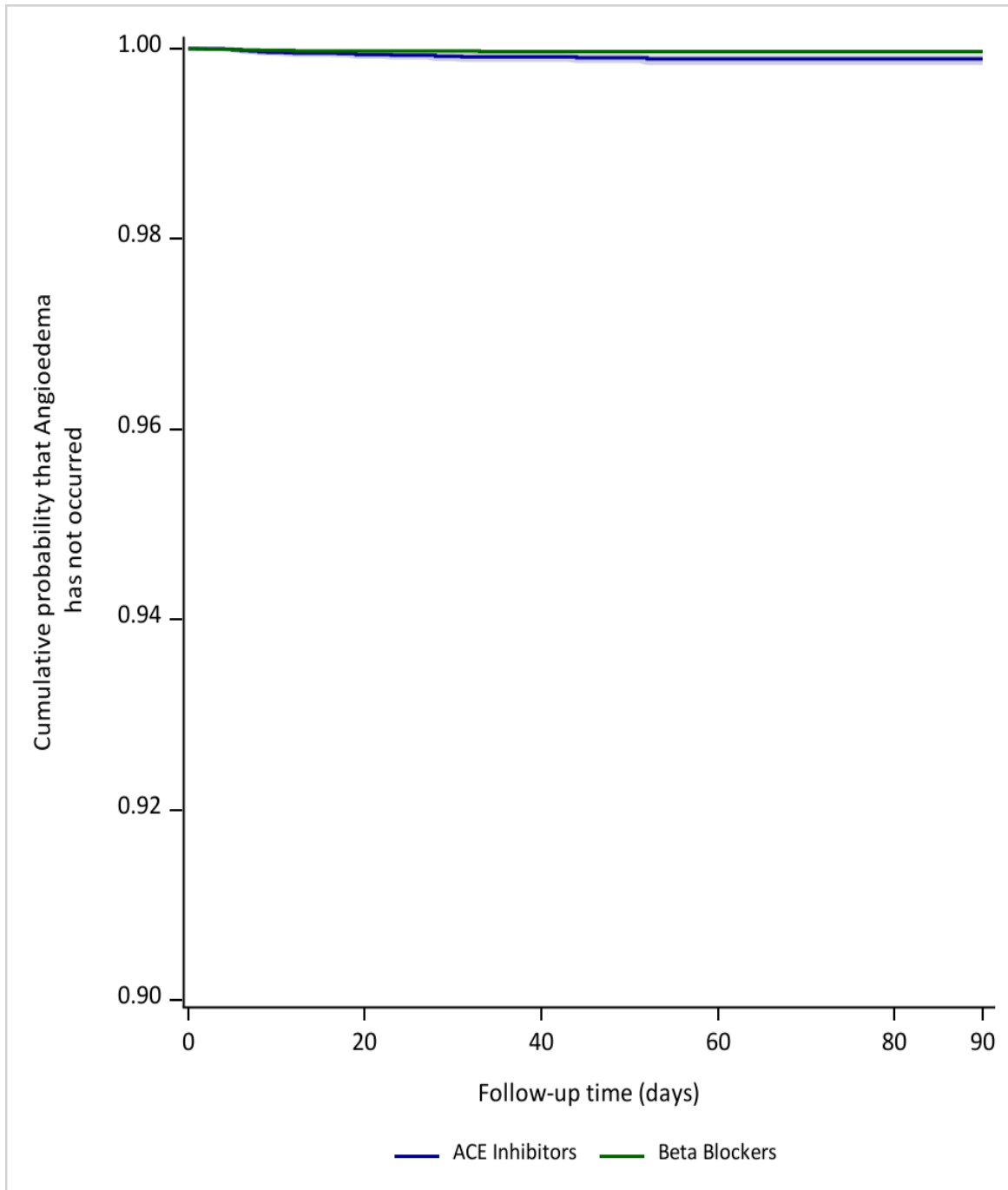


Figure 17a. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022

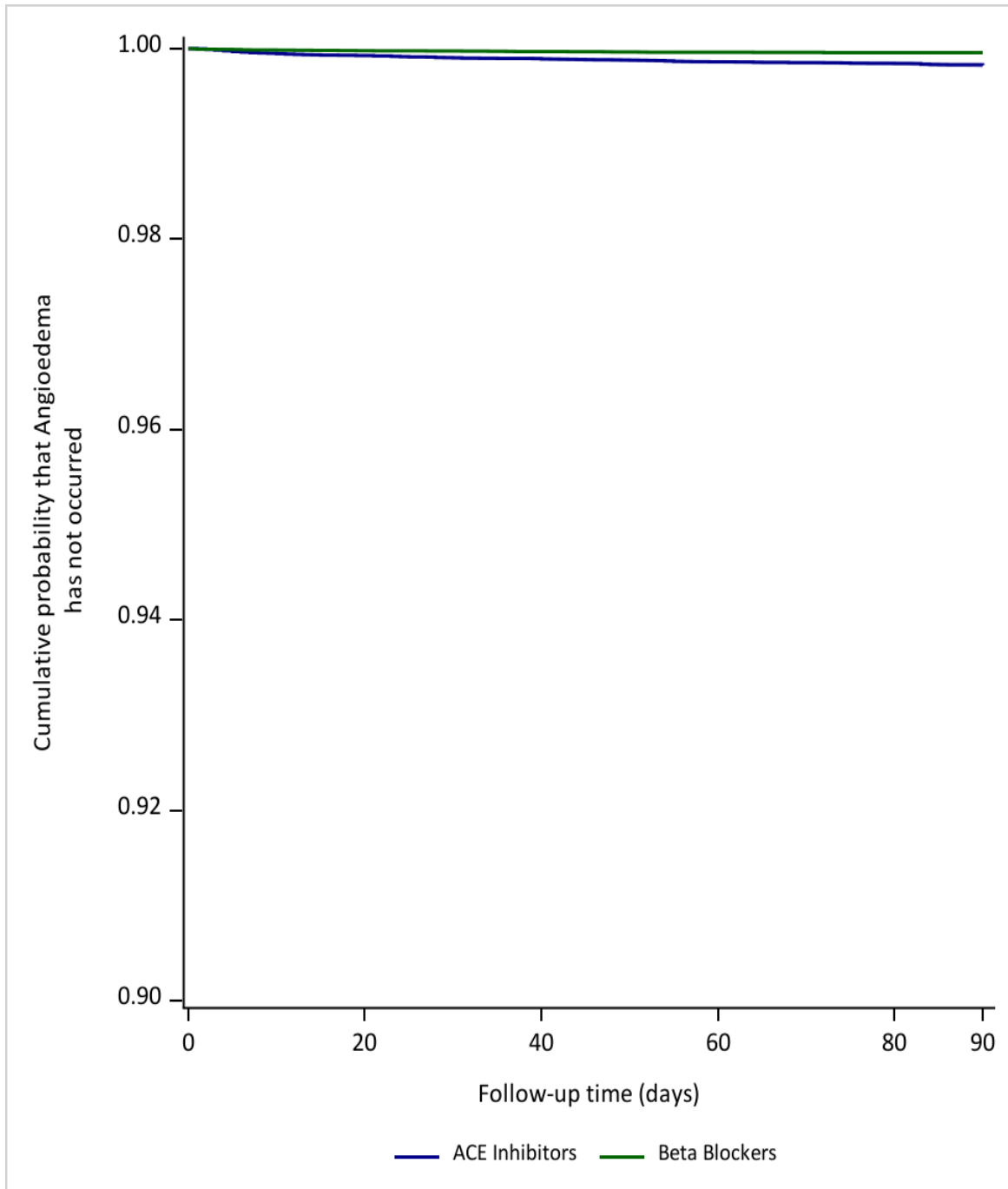


Figure 17b. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2020

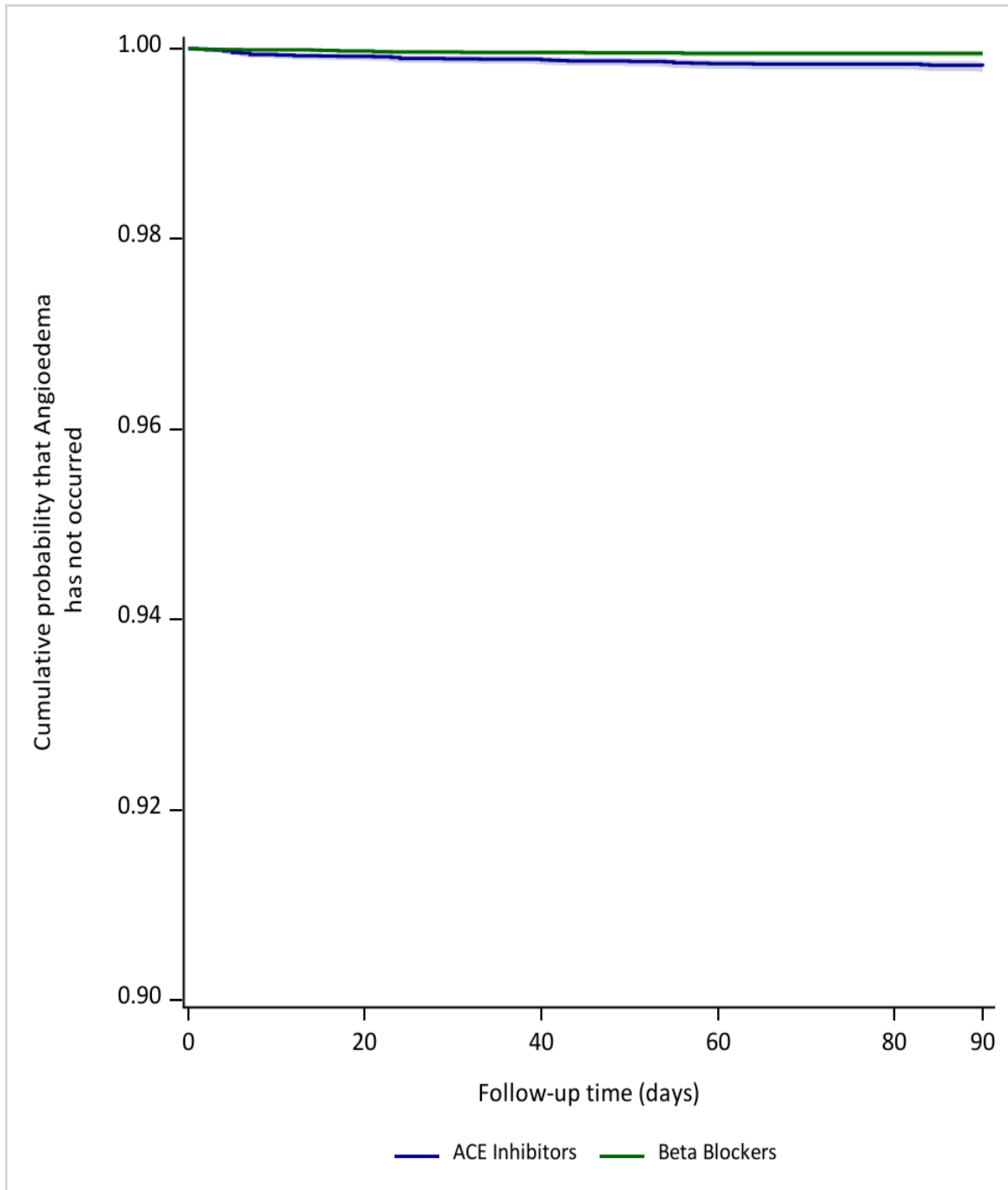


Figure 17c. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2021

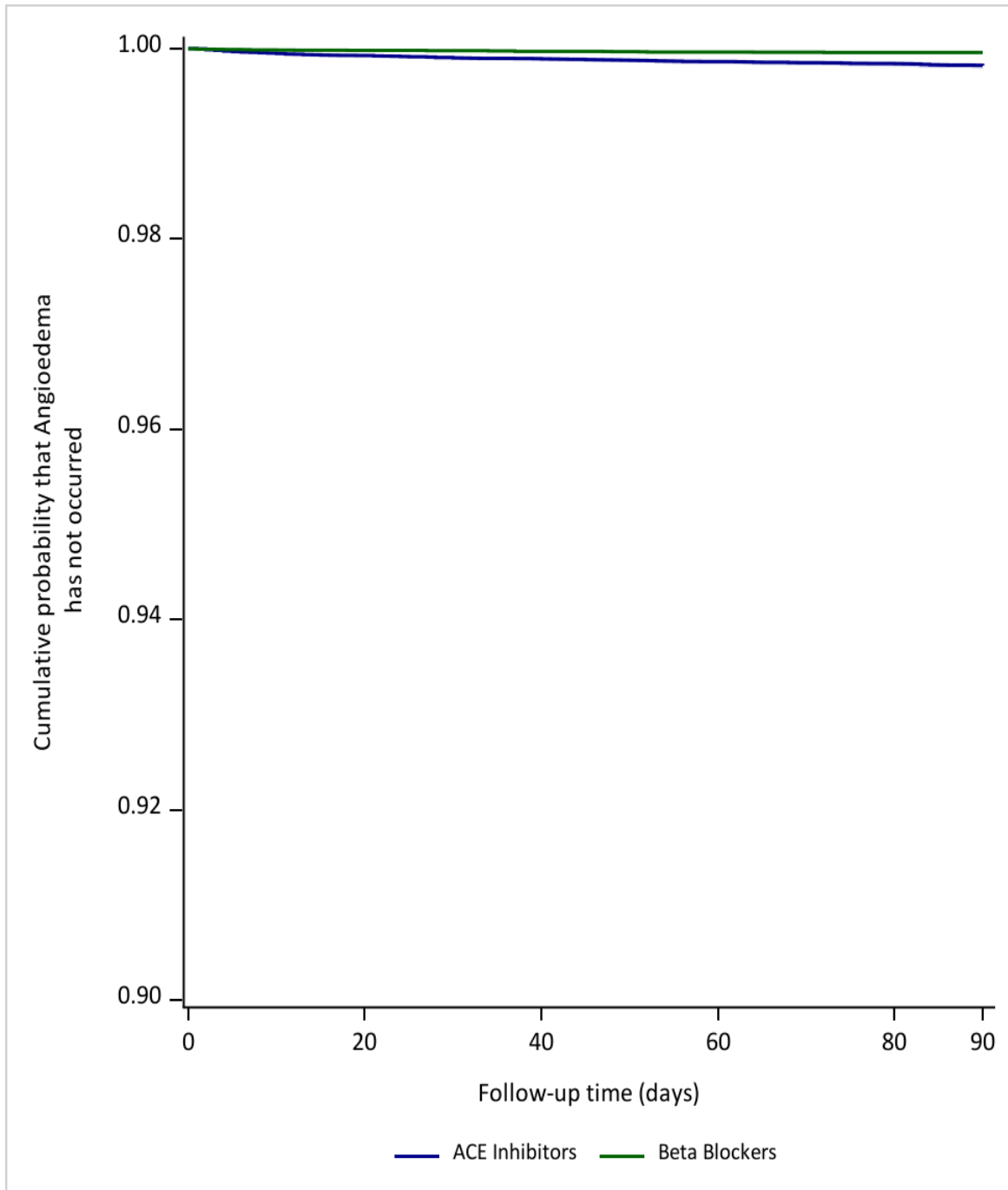
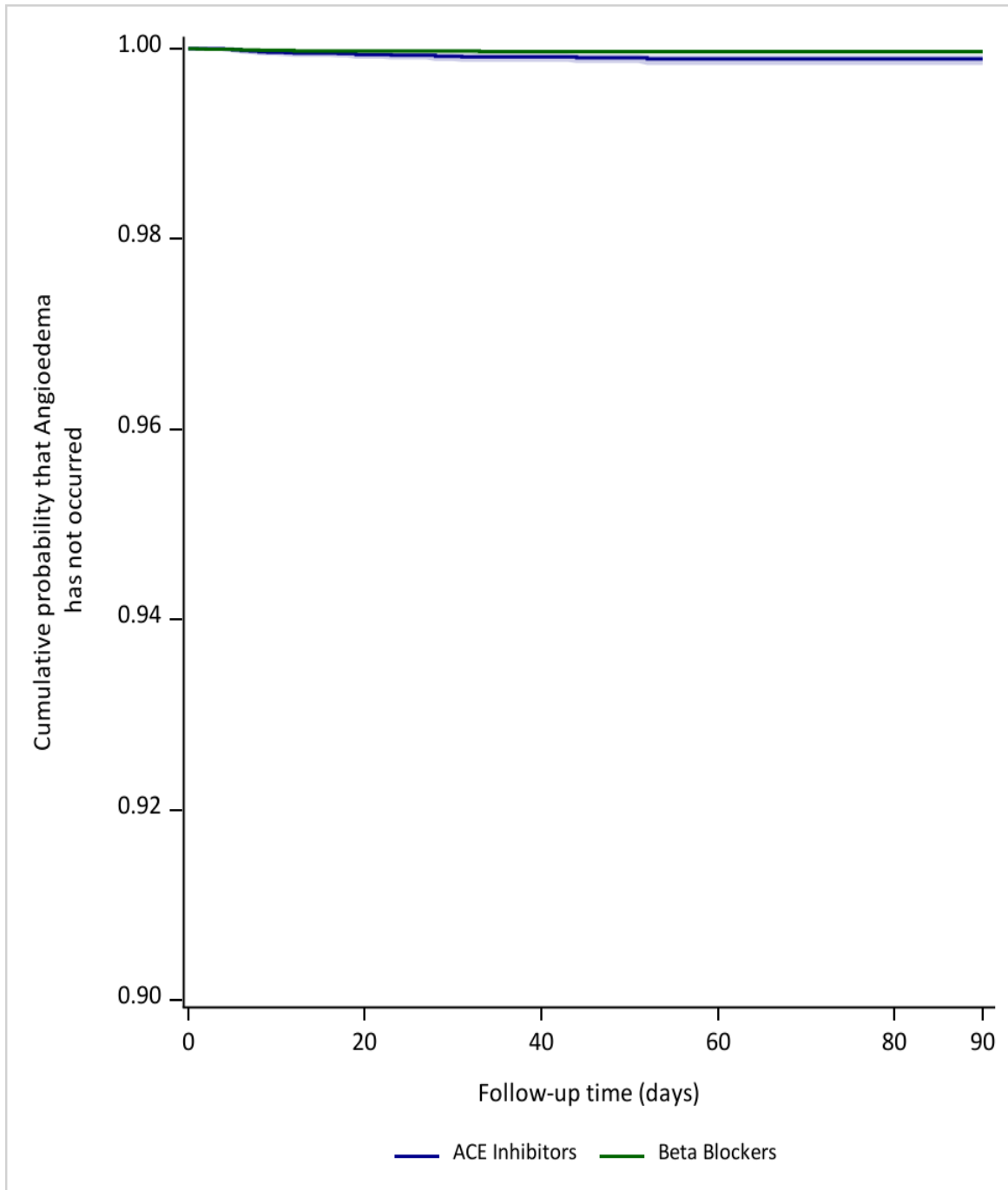


Figure 17d. Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Angioedema Not Occurring Among New Users of ACE Inhibitors vs. Beta Blockers, Pandemic, Long Lookback, Propensity Score Model with Year (PSS) from the Whole Population in the Merative™ MarketScan® Research Databases from September 10, 2020 to April 1, 2022, Year: 2022



Appendix A. Dates of Available Data for Each Data Partner (DP) as of Request Distribution Date (September 13, 2023)

Masked DP ID	DP Start Date	DP End Date¹
DP01	01/01/2010	09/30/2022

¹End Date represents the earliest of: (1) query end date, or (2) last day of the most recent month for which all of a Data Partner's data tables (enrollment, dispensing, etc.) have at least 80% of the record count relative to the prior month.

Appendix B. List of Generic and Brand Names of Medical Products Used to Define Exposures in this Request

Generic Name	Brand Name
ACE Inhibitors	
amlodipine besylate/benazepril HCl	Lotrel
amlodipine besylate/benazepril HCl	amlodipine-benazepril
benazepril HCl	Lotensin
benazepril HCl	benazepril
benazepril HCl/hydrochlorothiazide	Lotensin HCT
benazepril HCl/hydrochlorothiazide	benazepril-hydrochlorothiazide
captopril	captopril
captopril/hydrochlorothiazide	captopril-hydrochlorothiazide
enalapril maleate	Epaned
enalapril maleate	Vasotec
enalapril maleate	enalapril maleate
enalapril maleate/hydrochlorothiazide	Vaseretic
enalapril maleate/hydrochlorothiazide	enalapril-hydrochlorothiazide
fosinopril sodium	fosinopril
fosinopril sodium/hydrochlorothiazide	fosinopril-hydrochlorothiazide
lisinopril	Prinivil
lisinopril	Qbrelis
lisinopril	Zestril
lisinopril	lisinopril
lisinopril/hydrochlorothiazide	Zestoretic
lisinopril/hydrochlorothiazide	lisinopril-hydrochlorothiazide
moexipril HCl	moexipril
moexipril HCl/hydrochlorothiazide	moexipril-hydrochlorothiazide
perindopril arginine/amlodipine besylate	Prestalia
perindopril erbumine	Aceon
perindopril erbumine	perindopril erbumine
quinapril HCl	Accupril
quinapril HCl	quinapril
quinapril HCl/hydrochlorothiazide	Accuretic
quinapril HCl/hydrochlorothiazide	quinapril-hydrochlorothiazide
ramipril	Altace
ramipril	ramipril
trandolapril	Mavik
trandolapril	trandolapril
trandolapril/verapamil HCl	Tarka
trandolapril/verapamil HCl	trandolapril-verapamil
Beta Blockers	

Appendix B. List of Generic and Brand Names of Medical Products Used to Define Exposures in this Request

Generic Name	Brand Name
acebutolol HCl	Sectral
acebutolol HCl	acebutolol
atenolol	Tenormin
atenolol	atenolol
atenolol/chlorthalidone	Tenoretic 100
atenolol/chlorthalidone	Tenoretic 50
atenolol/chlorthalidone	atenolol-chlorthalidone
betaxolol HCl	betaxolol
bisoprolol fumarate	Zebeta
bisoprolol fumarate	bisoprolol fumarate
bisoprolol fumarate/hydrochlorothiazide	Ziac
bisoprolol fumarate/hydrochlorothiazide	bisoprolol-hydrochlorothiazide
carvedilol	Coreg
carvedilol	carvedilol
carvedilol phosphate	Coreg CR
carvedilol phosphate	carvedilol phosphate
labetalol HCl	labetalol
metoprolol succinate	Kaspargo Sprinkle
metoprolol succinate	Toprol XL
metoprolol succinate	metoprolol succinate
metoprolol succinate/hydrochlorothiazide	Dutoprol
metoprolol succinate/hydrochlorothiazide	metoprolol su-hydrochlorothiaz
metoprolol tartrate	Lopressor
metoprolol tartrate	metoprolol tartrate
metoprolol tartrate/hydrochlorothiazide	metoprolol ta-hydrochlorothiaz
nadolol	Corgard
nadolol	nadolol
nadolol/bendroflumethiazide	Corzide
nadolol/bendroflumethiazide	nadolol-bendroflumethiazide
nebivolol HCl	Bystolic
nebivolol HCl	nebivolol
pindolol	pindolol
propranolol HCl	Inderal LA
propranolol HCl	Inderal XL
propranolol HCl	InnoPran XL
propranolol HCl	propranolol
propranolol HCl/hydrochlorothiazide	propranolol-hydrochlorothiazid
sotalol HCl	Betapace

Appendix B. List of Generic and Brand Names of Medical Products Used to Define Exposures in this Request

Generic Name	Brand Name
sotalol HCl	Betapace AF
sotalol HCl	Sorine
sotalol HCl	Sotalol AF
sotalol HCl	Sotylize
sotalol HCl	sotalol
timolol maleate	timolol maleate

Appendix C. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Outcomes in this Request

Code	Description	Code Category	Code Type
Angioedema (Outcome)			
T78.3XXA	Angioneurotic edema, initial encounter	Diagnosis	ICD-10-CM

Appendix D. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Exposure Incidence Criteria in this Request

Code	Description	Code Category	Code Type
Angioedema (Exclusion)			
T78.3XXA	Angioneurotic edema, initial encounter	Diagnosis	ICD-10-CM
T78.3XXD	Angioneurotic edema, subsequent encounter	Diagnosis	ICD-10-CM
T78.3XXS	Angioneurotic edema, sequela	Diagnosis	ICD-10-CM

Appendix E. List of Generic and Brand Names of Medical Products Used to Define Exposure Incidence Criteria in this Request

Generic Name	Brand Name
Angiotensin Receptor Blockers (ARBs)	
amlodipine besylate/olmesartan medoxomil	Azor
amlodipine besylate/olmesartan medoxomil	amlodipine-olmesartan
amlodipine besylate/valsartan	Exforge
amlodipine besylate/valsartan	amlodipine-valsartan
amlodipine besylate/valsartan/hydrochlorothiazide	Exforge HCT
amlodipine besylate/valsartan/hydrochlorothiazide	amlodipine-valsartan-hcthiazid
azilsartan medoxomil	Edarbi
azilsartan medoxomil/chlorthalidone	Edarbyclor
candesartan cilexetil	Atacand
candesartan cilexetil	candesartan
candesartan cilexetil/hydrochlorothiazide	Atacand HCT
candesartan cilexetil/hydrochlorothiazide	candesartan-hydrochlorothiazid
eprosartan mesylate	eprosartan
irbesartan	Avapro
irbesartan	irbesartan
irbesartan/hydrochlorothiazide	Avalide
irbesartan/hydrochlorothiazide	irbesartan-hydrochlorothiazide
losartan potassium	Cozaar
losartan potassium	losartan
losartan potassium/hydrochlorothiazide	Hyzaar
losartan potassium/hydrochlorothiazide	losartan-hydrochlorothiazide
nebivolol HCl/valsartan	Byvalson
olmesartan medoxomil	Benicar
olmesartan medoxomil	olmesartan
olmesartan medoxomil/amlodipine	
besylate/hydrochlorothiazide	Tribenzor
olmesartan medoxomil/amlodipine	
besylate/hydrochlorothiazide	olmesartan-amlodipin-hcthiazid
olmesartan medoxomil/hydrochlorothiazide	Benicar HCT
olmesartan medoxomil/hydrochlorothiazide	olmesartan-hydrochlorothiazide
sacubitril/valsartan	Entresto
telmisartan	Micardis
telmisartan	telmisartan
telmisartan/amlodipine besylate	Twynta
telmisartan/amlodipine besylate	telmisartan-amlodipine
telmisartan/hydrochlorothiazide	Micardis HCT
telmisartan/hydrochlorothiazide	telmisartan-hydrochlorothiazid
valsartan	Diovan
valsartan	valsartan
valsartan/hydrochlorothiazide	Diovan HCT
valsartan/hydrochlorothiazide	valsartan-hydrochlorothiazide
ACE Inhibitors	
amlodipine besylate/benazepril HCl	Lotrel
amlodipine besylate/benazepril HCl	amlodipine-benazepril
benazepril HCl	Lotensin
benazepril HCl	benazepril

Appendix E. List of Generic and Brand Names of Medical Products Used to Define Exposure Incidence Criteria in this Request

Generic Name	Brand Name
benazepril HCl/hydrochlorothiazide	Lotensin HCT
benazepril HCl/hydrochlorothiazide	benazepril-hydrochlorothiazide
captopril	captopril
captopril/hydrochlorothiazide	captopril-hydrochlorothiazide
enalapril maleate	Epaned
enalapril maleate	Vasotec
enalapril maleate	enalapril maleate
enalapril maleate/hydrochlorothiazide	Vaseretic
enalapril maleate/hydrochlorothiazide	enalapril-hydrochlorothiazide
fosinopril sodium	fosinopril
fosinopril sodium/hydrochlorothiazide	fosinopril-hydrochlorothiazide
lisinopril	Prinivil
lisinopril	Qbrelis
lisinopril	Zestril
lisinopril	lisinopril
lisinopril/hydrochlorothiazide	Zestoretic
lisinopril/hydrochlorothiazide	lisinopril-hydrochlorothiazide
moexipril HCl	moexipril
moexipril HCl/hydrochlorothiazide	moexipril-hydrochlorothiazide
perindopril arginine/amlodipine besylate	Prestalia
perindopril erbumine	Aceon
perindopril erbumine	perindopril erbumine
quinapril HCl	Accupril
quinapril HCl	quinapril
quinapril HCl/hydrochlorothiazide	Accuretic
quinapril HCl/hydrochlorothiazide	quinapril-hydrochlorothiazide
ramipril	Altace
ramipril	ramipril
trandolapril	Mavik
trandolapril	trandolapril
trandolapril/verapamil HCl	Tarka
trandolapril/verapamil HCl	trandolapril-verapamil
Beta Blockers	
acebutolol HCl	Sectral
acebutolol HCl	acebutolol
atenolol	Tenormin
atenolol	atenolol
atenolol/chlorthalidone	Tenoretic 100
atenolol/chlorthalidone	Tenoretic 50
atenolol/chlorthalidone	atenolol-chlorthalidone
betaxolol HCl	betaxolol
bisoprolol fumarate	Zebeta
bisoprolol fumarate	bisoprolol fumarate
bisoprolol fumarate/hydrochlorothiazide	Ziac
bisoprolol fumarate/hydrochlorothiazide	bisoprolol-hydrochlorothiazide
carvedilol	Coreg
carvedilol	carvedilol

Appendix E. List of Generic and Brand Names of Medical Products Used to Define Exposure Incidence Criteria in this Request

Generic Name	Brand Name
carvedilol phosphate	Coreg CR
carvedilol phosphate	carvedilol phosphate
labetalol HCl	labetalol
metoprolol succinate	Kaspargo Sprinkle
metoprolol succinate	Toprol XL
metoprolol succinate	metoprolol succinate
metoprolol succinate/hydrochlorothiazide	Dutoprol
metoprolol succinate/hydrochlorothiazide	metoprolol su-hydrochlorothiaz
metoprolol tartrate	Lopressor
metoprolol tartrate	metoprolol tartrate
metoprolol tartrate/hydrochlorothiazide	metoprolol ta-hydrochlorothiaz
nadolol	Corgard
nadolol	nadolol
nadolol/bendroflumethiazide	Corzide
nadolol/bendroflumethiazide	nadolol-bendroflumethiazide
nebivolol HCl	Bystolic
nebivolol HCl	nebivolol
pindolol	pindolol
propranolol HCl	Inderal LA
propranolol HCl	Inderal XL
propranolol HCl	InnoPran XL
propranolol HCl	propranolol
propranolol HCl/hydrochlorothiazide	propranolol-hydrochlorothiazid
sotalol HCl	Betapace
sotalol HCl	Betapace AF
sotalol HCl	Sorine
sotalol HCl	Sotalol AF
sotalol HCl	Sotylize
sotalol HCl	sotalol
timolol maleate	timolol maleate
Aliskiren	
aliskiren hemifumarate	Tekturna
aliskiren hemifumarate	aliskiren
aliskiren hemifumarate/hydrochlorothiazide	Tekturna HCT

Appendix F. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request

Generic Name	Brand Name
Non-Steroidal Anti-Inflammatory Drug (NSAID) Use	
amlodipine besylate/celecoxib	Consensi
celecoxib	Celebrex
celecoxib	Elyxyb
celecoxib	celecoxib
diclofenac potassium	Cambia
diclofenac potassium	Cataflam
diclofenac potassium	Lofena
diclofenac potassium	Zipsor
diclofenac potassium	diclofenac potassium
diclofenac sodium	Voltaren-XR
diclofenac sodium	diclofenac sodium
diclofenac sodium/misoprostol	Arthrotec 50
diclofenac sodium/misoprostol	Arthrotec 75
diclofenac sodium/misoprostol	diclofenac-misoprostol
diclofenac submicronized	Zorvolex
diclofenac submicronized	diclofenac submicronized
etodolac	Lodine
etodolac	etodolac
fenoprofen calcium	Fenortho
fenoprofen calcium	Nalfon
fenoprofen calcium	ProFeno
fenoprofen calcium	fenoprofen
flurbiprofen	flurbiprofen
hydrocodone/ibuprofen	Ibudone
hydrocodone/ibuprofen	Reprexain
hydrocodone/ibuprofen	Vicoprofen
hydrocodone/ibuprofen	Xylon 10
hydrocodone/ibuprofen	hydrocodone-ibuprofen
ibuprofen	IBU
ibuprofen	ibuprofen
ibuprofen/famotidine	Duexis
ibuprofen/famotidine	ibuprofen-famotidine
ibuprofen/glycerin	Ibupak
ibuprofen/oxycodone HCl	ibuprofen-oxycodone
indomethacin	Indocin
indomethacin	indomethacin

Appendix F. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request

Generic Name	Brand Name
indomethacin, submicronized	Tivorbex
indomethacin, submicronized	indomethacin submicronized
ketoprofen	ketoprofen
ketorolac tromethamine	ketorolac
meclofenamate sodium	meclofenamate
mefenamic acid	Ponstel
mefenamic acid	mefenamic acid
meloxicam	Mobic
meloxicam	Qmiiz ODT
meloxicam	meloxicam
meloxicam, submicronized	Vivlodex
meloxicam, submicronized	meloxicam submicronized
nabumetone	Relafen
nabumetone	Relafen DS
nabumetone	nabumetone
naproxen	EC-Naprosyn
naproxen	EC-Naproxen
naproxen	Naprosyn
naproxen	naproxen
naproxen sodium	Anaprox
naproxen sodium	Anaprox DS
naproxen sodium	Naprelan CR
naproxen sodium	naproxen sodium
naproxen/esomeprazole magnesium	Vimovo
naproxen/esomeprazole magnesium	naproxen-esomeprazole
oxaprozin	Daypro
oxaprozin	oxaprozin
piroxicam	Feldene
piroxicam	piroxicam
sulindac	sulindac
sumatriptan succinate/naproxen sodium	Treximet
sumatriptan succinate/naproxen sodium	sumatriptan-naproxen
tolmetin sodium	tolmetin
tramadol HCl/celecoxib	Seglentis

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
Allergic Reaction			
B44.81	Allergic bronchopulmonary aspergillosis	Diagnosis	ICD-10-CM
J30.5	Allergic rhinitis due to food	Diagnosis	ICD-10-CM
K52.21	Food protein-induced enterocolitis syndrome	Diagnosis	ICD-10-CM
K52.22	Food protein-induced enteropathy	Diagnosis	ICD-10-CM
K52.29	Other allergic and dietetic gastroenteritis and colitis	Diagnosis	ICD-10-CM
L20.0	Besnier's prurigo	Diagnosis	ICD-10-CM
L20.81	Atopic neurodermatitis	Diagnosis	ICD-10-CM
L20.82	Flexural eczema	Diagnosis	ICD-10-CM
L20.84	Intrinsic (allergic) eczema	Diagnosis	ICD-10-CM
L20.89	Other atopic dermatitis	Diagnosis	ICD-10-CM
L20.9	Atopic dermatitis, unspecified	Diagnosis	ICD-10-CM
L23.0	Allergic contact dermatitis due to metals	Diagnosis	ICD-10-CM
L23.1	Allergic contact dermatitis due to adhesives	Diagnosis	ICD-10-CM
L23.2	Allergic contact dermatitis due to cosmetics	Diagnosis	ICD-10-CM
L23.3	Allergic contact dermatitis due to drugs in contact with skin	Diagnosis	ICD-10-CM
L23.4	Allergic contact dermatitis due to dyes	Diagnosis	ICD-10-CM
L23.5	Allergic contact dermatitis due to other chemical products	Diagnosis	ICD-10-CM
L23.6	Allergic contact dermatitis due to food in contact with the skin	Diagnosis	ICD-10-CM
L23.7	Allergic contact dermatitis due to plants, except food	Diagnosis	ICD-10-CM
L23.81	Allergic contact dermatitis due to animal (cat) (dog) dander	Diagnosis	ICD-10-CM
L23.89	Allergic contact dermatitis due to other agents	Diagnosis	ICD-10-CM
L23.9	Allergic contact dermatitis, unspecified cause	Diagnosis	ICD-10-CM
L24.0	Irritant contact dermatitis due to detergents	Diagnosis	ICD-10-CM
L24.1	Irritant contact dermatitis due to oils and greases	Diagnosis	ICD-10-CM
L24.2	Irritant contact dermatitis due to solvents	Diagnosis	ICD-10-CM
L24.3	Irritant contact dermatitis due to cosmetics	Diagnosis	ICD-10-CM
L24.4	Irritant contact dermatitis due to drugs in contact with skin	Diagnosis	ICD-10-CM
L24.5	Irritant contact dermatitis due to other chemical products	Diagnosis	ICD-10-CM
L24.6	Irritant contact dermatitis due to food in contact with skin	Diagnosis	ICD-10-CM
L24.7	Irritant contact dermatitis due to plants, except food	Diagnosis	ICD-10-CM
L24.81	Irritant contact dermatitis due to metals	Diagnosis	ICD-10-CM
L24.89	Irritant contact dermatitis due to other agents	Diagnosis	ICD-10-CM
L24.9	Irritant contact dermatitis, unspecified cause	Diagnosis	ICD-10-CM
L25.0	Unspecified contact dermatitis due to cosmetics	Diagnosis	ICD-10-CM
L25.1	Unspecified contact dermatitis due to drugs in contact with skin	Diagnosis	ICD-10-CM
L25.2	Unspecified contact dermatitis due to dyes	Diagnosis	ICD-10-CM
L25.3	Unspecified contact dermatitis due to other chemical products	Diagnosis	ICD-10-CM
L25.4	Unspecified contact dermatitis due to food in contact with skin	Diagnosis	ICD-10-CM
L25.5	Unspecified contact dermatitis due to plants, except food	Diagnosis	ICD-10-CM
L25.8	Unspecified contact dermatitis due to other agents	Diagnosis	ICD-10-CM
L25.9	Unspecified contact dermatitis, unspecified cause	Diagnosis	ICD-10-CM
L27.0	Generalized skin eruption due to drugs and medicaments taken internally	Diagnosis	ICD-10-CM
L27.1	Localized skin eruption due to drugs and medicaments taken internally	Diagnosis	ICD-10-CM
L27.2	Dermatitis due to ingested food	Diagnosis	ICD-10-CM
L27.8	Dermatitis due to other substances taken internally	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
L27.9	Dermatitis due to unspecified substance taken internally	Diagnosis	ICD-10-CM
L30.0	Nummular dermatitis	Diagnosis	ICD-10-CM
L30.2	Cutaneous autosensitization	Diagnosis	ICD-10-CM
L30.8	Other specified dermatitis	Diagnosis	ICD-10-CM
L30.9	Dermatitis, unspecified	Diagnosis	ICD-10-CM
L50.0	Allergic urticaria	Diagnosis	ICD-10-CM
L50.1	Idiopathic urticaria	Diagnosis	ICD-10-CM
L50.2	Urticaria due to cold and heat	Diagnosis	ICD-10-CM
L50.3	Dermatographic urticaria	Diagnosis	ICD-10-CM
L50.4	Vibratory urticaria	Diagnosis	ICD-10-CM
L50.5	Cholinergic urticaria	Diagnosis	ICD-10-CM
L50.6	Contact urticaria	Diagnosis	ICD-10-CM
L50.8	Other urticaria	Diagnosis	ICD-10-CM
L50.9	Urticaria, unspecified	Diagnosis	ICD-10-CM
L56.0	Drug phototoxic response	Diagnosis	ICD-10-CM
L56.1	Drug photoallergic response	Diagnosis	ICD-10-CM
L56.2	Photocontact dermatitis [berloque dermatitis]	Diagnosis	ICD-10-CM
L56.3	Solar urticaria	Diagnosis	ICD-10-CM
L56.4	Polymorphous light eruption	Diagnosis	ICD-10-CM
L56.8	Other specified acute skin changes due to ultraviolet radiation	Diagnosis	ICD-10-CM
L56.9	Acute skin change due to ultraviolet radiation, unspecified	Diagnosis	ICD-10-CM
L57.1	Actinic reticuloid	Diagnosis	ICD-10-CM
L57.5	Actinic granuloma	Diagnosis	ICD-10-CM
L57.8	Other skin changes due to chronic exposure to nonionizing radiation	Diagnosis	ICD-10-CM
L57.9	Skin changes due to chronic exposure to nonionizing radiation, unspecified	Diagnosis	ICD-10-CM
L58.0	Acute radiodermatitis	Diagnosis	ICD-10-CM
L58.1	Chronic radiodermatitis	Diagnosis	ICD-10-CM
L58.9	Radiodermatitis, unspecified	Diagnosis	ICD-10-CM
L59.0	Erythema ab igne [dermatitis ab igne]	Diagnosis	ICD-10-CM
L59.8	Other specified disorders of the skin and subcutaneous tissue related to radiation	Diagnosis	ICD-10-CM
L59.9	Disorder of the skin and subcutaneous tissue related to radiation, unspecified	Diagnosis	ICD-10-CM
T78.00XA	Anaphylactic reaction due to unspecified food, initial encounter	Diagnosis	ICD-10-CM
T78.01XA	Anaphylactic reaction due to peanuts, initial encounter	Diagnosis	ICD-10-CM
T78.02XA	Anaphylactic reaction due to shellfish (crustaceans), initial encounter	Diagnosis	ICD-10-CM
T78.03XA	Anaphylactic reaction due to other fish, initial encounter	Diagnosis	ICD-10-CM
T78.04XA	Anaphylactic reaction due to fruits and vegetables, initial encounter	Diagnosis	ICD-10-CM
T78.05XA	Anaphylactic reaction due to tree nuts and seeds, initial encounter	Diagnosis	ICD-10-CM
T78.06XA	Anaphylactic reaction due to food additives, initial encounter	Diagnosis	ICD-10-CM
T78.07XA	Anaphylactic reaction due to milk and dairy products, initial encounter	Diagnosis	ICD-10-CM
T78.08XA	Anaphylactic reaction due to eggs, initial encounter	Diagnosis	ICD-10-CM
T78.09XA	Anaphylactic reaction due to other food products, initial encounter	Diagnosis	ICD-10-CM
T78.1XXA	Other adverse food reactions, not elsewhere classified, initial encounter	Diagnosis	ICD-10-CM
T78.2XXA	Anaphylactic shock, unspecified, initial encounter	Diagnosis	ICD-10-CM
T78.40XA	Allergy, unspecified, initial encounter	Diagnosis	ICD-10-CM
T78.49XA	Other allergy, initial encounter	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
T88.6XXA	Anaphylactic reaction due to adverse effect of correct drug or medicament properly administered, initial encounter	Diagnosis	ICD-10-CM
Z01.82	Encounter for allergy testing	Diagnosis	ICD-10-CM
Z51.6	Encounter for desensitization to allergens	Diagnosis	ICD-10-CM
Z87.892	Personal history of anaphylaxis	Diagnosis	ICD-10-CM
Z88.0	Allergy status to penicillin	Diagnosis	ICD-10-CM
Z88.1	Allergy status to other antibiotic agents	Diagnosis	ICD-10-CM
Z88.2	Allergy status to sulfonamides	Diagnosis	ICD-10-CM
Z88.3	Allergy status to other anti-infective agents	Diagnosis	ICD-10-CM
Z88.4	Allergy status to anesthetic agent	Diagnosis	ICD-10-CM
Z88.5	Allergy status to narcotic agent	Diagnosis	ICD-10-CM
Z88.6	Allergy status to analgesic agent	Diagnosis	ICD-10-CM
Z88.7	Allergy status to serum and vaccine	Diagnosis	ICD-10-CM
Z88.8	Allergy status to other drugs, medicaments and biological substances	Diagnosis	ICD-10-CM
Z88.9	Allergy status to unspecified drugs, medicaments and biological substances	Diagnosis	ICD-10-CM
Z91.010	Allergy to peanuts	Diagnosis	ICD-10-CM
Z91.011	Allergy to milk products	Diagnosis	ICD-10-CM
Z91.012	Allergy to eggs	Diagnosis	ICD-10-CM
Z91.013	Allergy to seafood	Diagnosis	ICD-10-CM
Z91.018	Allergy to other foods	Diagnosis	ICD-10-CM
Z91.02	Food additives allergy status	Diagnosis	ICD-10-CM
Z91.030	Bee allergy status	Diagnosis	ICD-10-CM
Z91.038	Other insect allergy status	Diagnosis	ICD-10-CM
Z91.040	Latex allergy status	Diagnosis	ICD-10-CM
Z91.041	Radiographic dye allergy status	Diagnosis	ICD-10-CM
Z91.048	Other nonmedicinal substance allergy status	Diagnosis	ICD-10-CM
Z91.09	Other allergy status, other than to drugs and biological substances	Diagnosis	ICD-10-CM
Acquired Hypothyroidism			
E00.0	Congenital iodine-deficiency syndrome, neurological type	Diagnosis	ICD-10-CM
E00.1	Congenital iodine-deficiency syndrome, myxedematous type	Diagnosis	ICD-10-CM
E00.2	Congenital iodine-deficiency syndrome, mixed type	Diagnosis	ICD-10-CM
E00.9	Congenital iodine-deficiency syndrome, unspecified	Diagnosis	ICD-10-CM
E01.8	Other iodine-deficiency related thyroid disorders and allied conditions	Diagnosis	ICD-10-CM
E02	Subclinical iodine-deficiency hypothyroidism	Diagnosis	ICD-10-CM
E03.0	Congenital hypothyroidism with diffuse goiter	Diagnosis	ICD-10-CM
E03.1	Congenital hypothyroidism without goiter	Diagnosis	ICD-10-CM
E03.2	Hypothyroidism due to medicaments and other exogenous substances	Diagnosis	ICD-10-CM
E03.3	Postinfectious hypothyroidism	Diagnosis	ICD-10-CM
E03.4	Atrophy of thyroid (acquired)	Diagnosis	ICD-10-CM
E03.8	Other specified hypothyroidism	Diagnosis	ICD-10-CM
E03.9	Hypothyroidism, unspecified	Diagnosis	ICD-10-CM
E89.0	Postprocedural hypothyroidism	Diagnosis	ICD-10-CM
Acute Myocardial Infarction			
I21.01	ST elevation (STEMI) myocardial infarction involving left main coronary artery	Diagnosis	ICD-10-CM
I21.02	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
I21.09	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall	Diagnosis	ICD-10-CM
I21.11	ST elevation (STEMI) myocardial infarction involving right coronary artery	Diagnosis	ICD-10-CM
I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall	Diagnosis	ICD-10-CM
I21.21	ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery	Diagnosis	ICD-10-CM
I21.29	ST elevation (STEMI) myocardial infarction involving other sites	Diagnosis	ICD-10-CM
I21.3	ST elevation (STEMI) myocardial infarction of unspecified site	Diagnosis	ICD-10-CM
I21.4	Non-ST elevation (NSTEMI) myocardial infarction	Diagnosis	ICD-10-CM
I21.9	Acute myocardial infarction, unspecified	Diagnosis	ICD-10-CM
I21.A1	Myocardial infarction type 2	Diagnosis	ICD-10-CM
I21.A9	Other myocardial infarction type	Diagnosis	ICD-10-CM
I22.0	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall	Diagnosis	ICD-10-CM
I22.1	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall	Diagnosis	ICD-10-CM
I22.2	Subsequent non-ST elevation (NSTEMI) myocardial infarction	Diagnosis	ICD-10-CM
I22.8	Subsequent ST elevation (STEMI) myocardial infarction of other sites	Diagnosis	ICD-10-CM
I22.9	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site	Diagnosis	ICD-10-CM
I23.0	Hemopericardium as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.1	Atrial septal defect as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.2	Ventricular septal defect as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.3	Rupture of cardiac wall without hemopericardium as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.4	Rupture of chordae tendineae as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.5	Rupture of papillary muscle as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.6	Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.7	Postinfarction angina	Diagnosis	ICD-10-CM
I23.8	Other current complications following acute myocardial infarction	Diagnosis	ICD-10-CM
Alzheimers Disease & Related Disorders or Senile Dementia			
F01.50	Vascular dementia, unspecified severity, without behavioral disturbance, psychotic disturbance, mood disturbance, and anxiety	Diagnosis	ICD-10-CM
F01.51	Vascular dementia, unspecified severity, with behavioral disturbance	Diagnosis	ICD-10-CM
F02.80	Dementia in other diseases classified elsewhere, unspecified severity, without behavioral disturbance, psychotic disturbance, mood disturbance, and anxiety	Diagnosis	ICD-10-CM
F02.81	Dementia in other diseases classified elsewhere, unspecified severity, with behavioral disturbance	Diagnosis	ICD-10-CM
F03.90	Unspecified dementia, unspecified severity, without behavioral disturbance, psychotic disturbance, mood disturbance, and anxiety	Diagnosis	ICD-10-CM
F03.91	Unspecified dementia, unspecified severity, with behavioral disturbance	Diagnosis	ICD-10-CM
F04	Amnestic disorder due to known physiological condition	Diagnosis	ICD-10-CM
F05	Delirium due to known physiological condition	Diagnosis	ICD-10-CM
F06.1	Catatonic disorder due to known physiological condition	Diagnosis	ICD-10-CM
F06.8	Other specified mental disorders due to known physiological condition	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
	Systemic atrophy primarily affecting central nervous system in other diseases		
G13.8	classified elsewhere	Diagnosis	ICD-10-CM
G30.0	Alzheimer's disease with early onset	Diagnosis	ICD-10-CM
G30.1	Alzheimer's disease with late onset	Diagnosis	ICD-10-CM
G30.8	Other Alzheimer's disease	Diagnosis	ICD-10-CM
G30.9	Alzheimer's disease, unspecified	Diagnosis	ICD-10-CM
G31.01	Pick's disease	Diagnosis	ICD-10-CM
G31.09	Other frontotemporal neurocognitive disorder	Diagnosis	ICD-10-CM
G31.1	Senile degeneration of brain, not elsewhere classified	Diagnosis	ICD-10-CM
G31.2	Degeneration of nervous system due to alcohol	Diagnosis	ICD-10-CM
G31.83	Neurocognitive disorder with Lewy bodies	Diagnosis	ICD-10-CM
G94	Other disorders of brain in diseases classified elsewhere	Diagnosis	ICD-10-CM
R41.81	Age-related cognitive decline	Diagnosis	ICD-10-CM
R54	Age-related physical debility	Diagnosis	ICD-10-CM
Anemia			
C94.6	Myelodysplastic disease, not elsewhere classified	Diagnosis	ICD-10-CM
D46.0	Refractory anemia without ring sideroblasts, so stated	Diagnosis	ICD-10-CM
D46.1	Refractory anemia with ring sideroblasts	Diagnosis	ICD-10-CM
D46.20	Refractory anemia with excess of blasts, unspecified	Diagnosis	ICD-10-CM
D46.21	Refractory anemia with excess of blasts 1	Diagnosis	ICD-10-CM
D46.22	Refractory anemia with excess of blasts 2	Diagnosis	ICD-10-CM
D46.4	Refractory anemia, unspecified	Diagnosis	ICD-10-CM
D46.9	Myelodysplastic syndrome, unspecified	Diagnosis	ICD-10-CM
D46.A	Refractory cytopenia with multilineage dysplasia	Diagnosis	ICD-10-CM
D46.B	Refractory cytopenia with multilineage dysplasia and ring sideroblasts	Diagnosis	ICD-10-CM
D46.C	Myelodysplastic syndrome with isolated del(5q) chromosomal abnormality	Diagnosis	ICD-10-CM
D46.Z	Other myelodysplastic syndromes	Diagnosis	ICD-10-CM
D47.4	Osteomyelofibrosis	Diagnosis	ICD-10-CM
D50.0	Iron deficiency anemia secondary to blood loss (chronic)	Diagnosis	ICD-10-CM
D50.1	Sideropenic dysphagia	Diagnosis	ICD-10-CM
D50.8	Other iron deficiency anemias	Diagnosis	ICD-10-CM
D50.9	Iron deficiency anemia, unspecified	Diagnosis	ICD-10-CM
D51.0	Vitamin B12 deficiency anemia due to intrinsic factor deficiency	Diagnosis	ICD-10-CM
D51.1	Vitamin B12 deficiency anemia due to selective vitamin B12 malabsorption with proteinuria	Diagnosis	ICD-10-CM
D51.2	Transcobalamin II deficiency	Diagnosis	ICD-10-CM
D51.3	Other dietary vitamin B12 deficiency anemia	Diagnosis	ICD-10-CM
D51.8	Other vitamin B12 deficiency anemias	Diagnosis	ICD-10-CM
D51.9	Vitamin B12 deficiency anemia, unspecified	Diagnosis	ICD-10-CM
D52.0	Dietary folate deficiency anemia	Diagnosis	ICD-10-CM
D52.1	Drug-induced folate deficiency anemia	Diagnosis	ICD-10-CM
D52.8	Other folate deficiency anemias	Diagnosis	ICD-10-CM
D52.9	Folate deficiency anemia, unspecified	Diagnosis	ICD-10-CM
D53.0	Protein deficiency anemia	Diagnosis	ICD-10-CM
D53.1	Other megaloblastic anemias, not elsewhere classified	Diagnosis	ICD-10-CM
D53.2	Scorbutic anemia	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
D53.8	Other specified nutritional anemias	Diagnosis	ICD-10-CM
D53.9	Nutritional anemia, unspecified	Diagnosis	ICD-10-CM
D55.0	Anemia due to glucose-6-phosphate dehydrogenase [G6PD] deficiency	Diagnosis	ICD-10-CM
D55.1	Anemia due to other disorders of glutathione metabolism	Diagnosis	ICD-10-CM
D55.2	Anemia due to disorders of glycolytic enzymes	Diagnosis	ICD-10-CM
D55.21	Anemia due to pyruvate kinase deficiency	Diagnosis	ICD-10-CM
D55.29	Anemia due to other disorders of glycolytic enzymes	Diagnosis	ICD-10-CM
D55.3	Anemia due to disorders of nucleotide metabolism	Diagnosis	ICD-10-CM
D55.8	Other anemias due to enzyme disorders	Diagnosis	ICD-10-CM
D55.9	Anemia due to enzyme disorder, unspecified	Diagnosis	ICD-10-CM
D56.0	Alpha thalassemia	Diagnosis	ICD-10-CM
D56.1	Beta thalassemia	Diagnosis	ICD-10-CM
D56.2	Delta-beta thalassemia	Diagnosis	ICD-10-CM
D56.3	Thalassemia minor	Diagnosis	ICD-10-CM
D56.4	Hereditary persistence of fetal hemoglobin [HPFH]	Diagnosis	ICD-10-CM
D56.5	Hemoglobin E-beta thalassemia	Diagnosis	ICD-10-CM
D56.8	Other thalassemias	Diagnosis	ICD-10-CM
D56.9	Thalassemia, unspecified	Diagnosis	ICD-10-CM
D57.00	Hb-SS disease with crisis, unspecified	Diagnosis	ICD-10-CM
D57.01	Hb-SS disease with acute chest syndrome	Diagnosis	ICD-10-CM
D57.02	Hb-SS disease with splenic sequestration	Diagnosis	ICD-10-CM
D57.03	Hb-SS disease with cerebral vascular involvement	Diagnosis	ICD-10-CM
D57.09	Hb-SS disease with crisis with other specified complication	Diagnosis	ICD-10-CM
D57.1	Sickle-cell disease without crisis	Diagnosis	ICD-10-CM
D57.20	Sickle-cell/Hb-C disease without crisis	Diagnosis	ICD-10-CM
D57.211	Sickle-cell/Hb-C disease with acute chest syndrome	Diagnosis	ICD-10-CM
D57.212	Sickle-cell/Hb-C disease with splenic sequestration	Diagnosis	ICD-10-CM
D57.213	Sickle-cell/Hb-C disease with cerebral vascular involvement	Diagnosis	ICD-10-CM
D57.218	Sickle-cell/Hb-C disease with crisis with other specified complication	Diagnosis	ICD-10-CM
D57.219	Sickle-cell/Hb-C disease with crisis, unspecified	Diagnosis	ICD-10-CM
D57.3	Sickle-cell trait	Diagnosis	ICD-10-CM
D57.40	Sickle-cell thalassemia without crisis	Diagnosis	ICD-10-CM
D57.411	Sickle-cell thalassemia with acute chest syndrome	Diagnosis	ICD-10-CM
D57.412	Sickle-cell thalassemia with splenic sequestration	Diagnosis	ICD-10-CM
D57.413	Sickle-cell thalassemia, unspecified, with cerebral vascular involvement	Diagnosis	ICD-10-CM
D57.418	Sickle-cell thalassemia, unspecified, with crisis with other specified complication	Diagnosis	ICD-10-CM
D57.419	Sickle-cell thalassemia with crisis, unspecified	Diagnosis	ICD-10-CM
D57.42	Sickle-cell thalassemia beta zero without crisis	Diagnosis	ICD-10-CM
D57.431	Sickle-cell thalassemia beta zero with acute chest syndrome	Diagnosis	ICD-10-CM
D57.432	Sickle-cell thalassemia beta zero with splenic sequestration	Diagnosis	ICD-10-CM
D57.433	Sickle-cell thalassemia beta zero with cerebral vascular involvement	Diagnosis	ICD-10-CM
D57.438	Sickle-cell thalassemia beta zero with crisis with other specified complication	Diagnosis	ICD-10-CM
D57.439	Sickle-cell thalassemia beta zero with crisis, unspecified	Diagnosis	ICD-10-CM
D57.44	Sickle-cell thalassemia beta plus without crisis	Diagnosis	ICD-10-CM
D57.451	Sickle-cell thalassemia beta plus with acute chest syndrome	Diagnosis	ICD-10-CM
D57.452	Sickle-cell thalassemia beta plus with splenic sequestration	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
D57.453	Sickle-cell thalassemia beta plus with cerebral vascular involvement	Diagnosis	ICD-10-CM
D57.458	Sickle-cell thalassemia beta plus with crisis with other specified complication	Diagnosis	ICD-10-CM
D57.459	Sickle-cell thalassemia beta plus with crisis, unspecified	Diagnosis	ICD-10-CM
D57.80	Other sickle-cell disorders without crisis	Diagnosis	ICD-10-CM
D57.811	Other sickle-cell disorders with acute chest syndrome	Diagnosis	ICD-10-CM
D57.812	Other sickle-cell disorders with splenic sequestration	Diagnosis	ICD-10-CM
D57.813	Other sickle-cell disorders with cerebral vascular involvement	Diagnosis	ICD-10-CM
D57.818	Other sickle-cell disorders with crisis with other specified complication	Diagnosis	ICD-10-CM
D57.819	Other sickle-cell disorders with crisis, unspecified	Diagnosis	ICD-10-CM
D58.0	Hereditary spherocytosis	Diagnosis	ICD-10-CM
D58.1	Hereditary elliptocytosis	Diagnosis	ICD-10-CM
D58.2	Other hemoglobinopathies	Diagnosis	ICD-10-CM
D58.8	Other specified hereditary hemolytic anemias	Diagnosis	ICD-10-CM
D58.9	Hereditary hemolytic anemia, unspecified	Diagnosis	ICD-10-CM
D59.0	Drug-induced autoimmune hemolytic anemia	Diagnosis	ICD-10-CM
D59.1	Other autoimmune hemolytic anemias	Diagnosis	ICD-10-CM
D59.10	Autoimmune hemolytic anemia, unspecified	Diagnosis	ICD-10-CM
D59.11	Warm autoimmune hemolytic anemia	Diagnosis	ICD-10-CM
D59.12	Cold autoimmune hemolytic anemia	Diagnosis	ICD-10-CM
D59.13	Mixed type autoimmune hemolytic anemia	Diagnosis	ICD-10-CM
D59.19	Other autoimmune hemolytic anemia	Diagnosis	ICD-10-CM
D59.2	Drug-induced nonautoimmune hemolytic anemia	Diagnosis	ICD-10-CM
D59.3	Hemolytic-uremic syndrome	Diagnosis	ICD-10-CM
D59.4	Other nonautoimmune hemolytic anemias	Diagnosis	ICD-10-CM
D59.5	Paroxysmal nocturnal hemoglobinuria [Marchiafava-Micheli]	Diagnosis	ICD-10-CM
D59.6	Hemoglobinuria due to hemolysis from other external causes	Diagnosis	ICD-10-CM
D59.8	Other acquired hemolytic anemias	Diagnosis	ICD-10-CM
D59.9	Acquired hemolytic anemia, unspecified	Diagnosis	ICD-10-CM
D60.0	Chronic acquired pure red cell aplasia	Diagnosis	ICD-10-CM
D60.1	Transient acquired pure red cell aplasia	Diagnosis	ICD-10-CM
D60.8	Other acquired pure red cell aplasias	Diagnosis	ICD-10-CM
D60.9	Acquired pure red cell aplasia, unspecified	Diagnosis	ICD-10-CM
D61.01	Constitutional (pure) red blood cell aplasia	Diagnosis	ICD-10-CM
D61.09	Other constitutional aplastic anemia	Diagnosis	ICD-10-CM
D61.1	Drug-induced aplastic anemia	Diagnosis	ICD-10-CM
D61.2	Aplastic anemia due to other external agents	Diagnosis	ICD-10-CM
D61.3	Idiopathic aplastic anemia	Diagnosis	ICD-10-CM
D61.810	Antineoplastic chemotherapy induced pancytopenia	Diagnosis	ICD-10-CM
D61.811	Other drug-induced pancytopenia	Diagnosis	ICD-10-CM
D61.818	Other pancytopenia	Diagnosis	ICD-10-CM
D61.82	Myelophthisis	Diagnosis	ICD-10-CM
D61.89	Other specified aplastic anemias and other bone marrow failure syndromes	Diagnosis	ICD-10-CM
D61.9	Aplastic anemia, unspecified	Diagnosis	ICD-10-CM
D62	Acute posthemorrhagic anemia	Diagnosis	ICD-10-CM
D63.0	Anemia in neoplastic disease	Diagnosis	ICD-10-CM
D63.1	Anemia in chronic kidney disease	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
D63.8	Anemia in other chronic diseases classified elsewhere	Diagnosis	ICD-10-CM
D64.0	Hereditary sideroblastic anemia	Diagnosis	ICD-10-CM
D64.1	Secondary sideroblastic anemia due to disease	Diagnosis	ICD-10-CM
D64.2	Secondary sideroblastic anemia due to drugs and toxins	Diagnosis	ICD-10-CM
D64.3	Other sideroblastic anemias	Diagnosis	ICD-10-CM
D64.4	Congenital dyserythropoietic anemia	Diagnosis	ICD-10-CM
D64.81	Anemia due to antineoplastic chemotherapy	Diagnosis	ICD-10-CM
D64.89	Other specified anemias	Diagnosis	ICD-10-CM
D64.9	Anemia, unspecified	Diagnosis	ICD-10-CM
D75.81	Myelofibrosis	Diagnosis	ICD-10-CM
Asthma			
J45.20	Mild intermittent asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.21	Mild intermittent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.22	Mild intermittent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.30	Mild persistent asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.31	Mild persistent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.32	Mild persistent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.40	Moderate persistent asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.41	Moderate persistent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.42	Moderate persistent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.50	Severe persistent asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.51	Severe persistent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.52	Severe persistent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.901	Unspecified asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.902	Unspecified asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.909	Unspecified asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.990	Exercise induced bronchospasm	Diagnosis	ICD-10-CM
J45.991	Cough variant asthma	Diagnosis	ICD-10-CM
J45.998	Other asthma	Diagnosis	ICD-10-CM
Atrial Fibrillation			
I48.0	Paroxysmal atrial fibrillation	Diagnosis	ICD-10-CM
I48.1	Persistent atrial fibrillation	Diagnosis	ICD-10-CM
I48.11	Chronic atrial fibrillation, unspecified	Diagnosis	ICD-10-CM
I48.19	Longstanding persistent atrial fibrillation	Diagnosis	ICD-10-CM
I48.2	Chronic atrial fibrillation	Diagnosis	ICD-10-CM
I48.20	Chronic atrial fibrillation	Diagnosis	ICD-10-CM
I48.21	Other persistent atrial fibrillation	Diagnosis	ICD-10-CM
I48.3	Paroxysmal atrial fibrillation	Diagnosis	ICD-10-CM
I48.4	Atypical atrial flutter	Diagnosis	ICD-10-CM
I48.91	Unspecified atrial fibrillation	Diagnosis	ICD-10-CM
Benign Prostatic Hyperplasia			
N40.0	Benign prostatic hyperplasia without lower urinary tract symptoms	Diagnosis	ICD-10-CM
N40.1	Benign prostatic hyperplasia with lower urinary tract symptoms	Diagnosis	ICD-10-CM
N40.2	Nodular prostate without lower urinary tract symptoms	Diagnosis	ICD-10-CM
N40.3	Nodular prostate with lower urinary tract symptoms	Diagnosis	ICD-10-CM
N42.83	Cyst of prostate	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
Cataract			
E08.36	Diabetes mellitus due to underlying condition with diabetic cataract	Diagnosis	ICD-10-CM
E09.36	Drug or chemical induced diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E10.36	Type 1 diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E11.36	Type 2 diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E13.36	Other specified diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
H25.011	Cortical age-related cataract, right eye	Diagnosis	ICD-10-CM
H25.012	Cortical age-related cataract, left eye	Diagnosis	ICD-10-CM
H25.013	Cortical age-related cataract, bilateral	Diagnosis	ICD-10-CM
H25.019	Cortical age-related cataract, unspecified eye	Diagnosis	ICD-10-CM
H25.031	Anterior subcapsular polar age-related cataract, right eye	Diagnosis	ICD-10-CM
H25.032	Anterior subcapsular polar age-related cataract, left eye	Diagnosis	ICD-10-CM
H25.033	Anterior subcapsular polar age-related cataract, bilateral	Diagnosis	ICD-10-CM
H25.039	Anterior subcapsular polar age-related cataract, unspecified eye	Diagnosis	ICD-10-CM
H25.041	Posterior subcapsular polar age-related cataract, right eye	Diagnosis	ICD-10-CM
H25.042	Posterior subcapsular polar age-related cataract, left eye	Diagnosis	ICD-10-CM
H25.043	Posterior subcapsular polar age-related cataract, bilateral	Diagnosis	ICD-10-CM
H25.049	Posterior subcapsular polar age-related cataract, unspecified eye	Diagnosis	ICD-10-CM
H25.091	Other age-related incipient cataract, right eye	Diagnosis	ICD-10-CM
H25.092	Other age-related incipient cataract, left eye	Diagnosis	ICD-10-CM
H25.093	Other age-related incipient cataract, bilateral	Diagnosis	ICD-10-CM
H25.099	Other age-related incipient cataract, unspecified eye	Diagnosis	ICD-10-CM
H25.10	Age-related nuclear cataract, unspecified eye	Diagnosis	ICD-10-CM
H25.11	Age-related nuclear cataract, right eye	Diagnosis	ICD-10-CM
H25.12	Age-related nuclear cataract, left eye	Diagnosis	ICD-10-CM
H25.13	Age-related nuclear cataract, bilateral	Diagnosis	ICD-10-CM
H25.20	Age-related cataract, morgagnian type, unspecified eye	Diagnosis	ICD-10-CM
H25.21	Age-related cataract, morgagnian type, right eye	Diagnosis	ICD-10-CM
H25.22	Age-related cataract, morgagnian type, left eye	Diagnosis	ICD-10-CM
H25.23	Age-related cataract, morgagnian type, bilateral	Diagnosis	ICD-10-CM
H25.811	Combined forms of age-related cataract, right eye	Diagnosis	ICD-10-CM
H25.812	Combined forms of age-related cataract, left eye	Diagnosis	ICD-10-CM
H25.813	Combined forms of age-related cataract, bilateral	Diagnosis	ICD-10-CM
H25.819	Combined forms of age-related cataract, unspecified eye	Diagnosis	ICD-10-CM
H25.89	Other age-related cataract	Diagnosis	ICD-10-CM
H25.9	Unspecified age-related cataract	Diagnosis	ICD-10-CM
H26.001	Unspecified infantile and juvenile cataract, right eye	Diagnosis	ICD-10-CM
H26.002	Unspecified infantile and juvenile cataract, left eye	Diagnosis	ICD-10-CM
H26.003	Unspecified infantile and juvenile cataract, bilateral	Diagnosis	ICD-10-CM
H26.009	Unspecified infantile and juvenile cataract, unspecified eye	Diagnosis	ICD-10-CM
H26.011	Infantile and juvenile cortical, lamellar, or zonular cataract, right eye	Diagnosis	ICD-10-CM
H26.012	Infantile and juvenile cortical, lamellar, or zonular cataract, left eye	Diagnosis	ICD-10-CM
H26.013	Infantile and juvenile cortical, lamellar, or zonular cataract, bilateral	Diagnosis	ICD-10-CM
H26.019	Infantile and juvenile cortical, lamellar, or zonular cataract, unspecified eye	Diagnosis	ICD-10-CM
H26.031	Infantile and juvenile nuclear cataract, right eye	Diagnosis	ICD-10-CM
H26.032	Infantile and juvenile nuclear cataract, left eye	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
H26.033	Infantile and juvenile nuclear cataract, bilateral	Diagnosis	ICD-10-CM
H26.039	Infantile and juvenile nuclear cataract, unspecified eye	Diagnosis	ICD-10-CM
H26.041	Anterior subcapsular polar infantile and juvenile cataract, right eye	Diagnosis	ICD-10-CM
H26.042	Anterior subcapsular polar infantile and juvenile cataract, left eye	Diagnosis	ICD-10-CM
H26.043	Anterior subcapsular polar infantile and juvenile cataract, bilateral	Diagnosis	ICD-10-CM
H26.049	Anterior subcapsular polar infantile and juvenile cataract, unspecified eye	Diagnosis	ICD-10-CM
H26.051	Posterior subcapsular polar infantile and juvenile cataract, right eye	Diagnosis	ICD-10-CM
H26.052	Posterior subcapsular polar infantile and juvenile cataract, left eye	Diagnosis	ICD-10-CM
H26.053	Posterior subcapsular polar infantile and juvenile cataract, bilateral	Diagnosis	ICD-10-CM
H26.059	Posterior subcapsular polar infantile and juvenile cataract, unspecified eye	Diagnosis	ICD-10-CM
H26.061	Combined forms of infantile and juvenile cataract, right eye	Diagnosis	ICD-10-CM
H26.062	Combined forms of infantile and juvenile cataract, left eye	Diagnosis	ICD-10-CM
H26.063	Combined forms of infantile and juvenile cataract, bilateral	Diagnosis	ICD-10-CM
H26.069	Combined forms of infantile and juvenile cataract, unspecified eye	Diagnosis	ICD-10-CM
H26.09	Other infantile and juvenile cataract	Diagnosis	ICD-10-CM
H26.101	Unspecified traumatic cataract, right eye	Diagnosis	ICD-10-CM
H26.102	Unspecified traumatic cataract, left eye	Diagnosis	ICD-10-CM
H26.103	Unspecified traumatic cataract, bilateral	Diagnosis	ICD-10-CM
H26.109	Unspecified traumatic cataract, unspecified eye	Diagnosis	ICD-10-CM
H26.111	Localized traumatic opacities, right eye	Diagnosis	ICD-10-CM
H26.112	Localized traumatic opacities, left eye	Diagnosis	ICD-10-CM
H26.113	Localized traumatic opacities, bilateral	Diagnosis	ICD-10-CM
H26.119	Localized traumatic opacities, unspecified eye	Diagnosis	ICD-10-CM
H26.121	Partially resolved traumatic cataract, right eye	Diagnosis	ICD-10-CM
H26.122	Partially resolved traumatic cataract, left eye	Diagnosis	ICD-10-CM
H26.123	Partially resolved traumatic cataract, bilateral	Diagnosis	ICD-10-CM
H26.129	Partially resolved traumatic cataract, unspecified eye	Diagnosis	ICD-10-CM
H26.131	Total traumatic cataract, right eye	Diagnosis	ICD-10-CM
H26.132	Total traumatic cataract, left eye	Diagnosis	ICD-10-CM
H26.133	Total traumatic cataract, bilateral	Diagnosis	ICD-10-CM
H26.139	Total traumatic cataract, unspecified eye	Diagnosis	ICD-10-CM
H26.20	Unspecified complicated cataract	Diagnosis	ICD-10-CM
H26.211	Cataract with neovascularization, right eye	Diagnosis	ICD-10-CM
H26.212	Cataract with neovascularization, left eye	Diagnosis	ICD-10-CM
H26.213	Cataract with neovascularization, bilateral	Diagnosis	ICD-10-CM
H26.219	Cataract with neovascularization, unspecified eye	Diagnosis	ICD-10-CM
H26.221	Cataract secondary to ocular disorders (degenerative) (inflammatory), right eye	Diagnosis	ICD-10-CM
H26.222	Cataract secondary to ocular disorders (degenerative) (inflammatory), left eye	Diagnosis	ICD-10-CM
H26.223	Cataract secondary to ocular disorders (degenerative) (inflammatory), bilateral	Diagnosis	ICD-10-CM
H26.229	Cataract secondary to ocular disorders (degenerative) (inflammatory), unspecified eye	Diagnosis	ICD-10-CM
H26.30	Drug-induced cataract, unspecified eye	Diagnosis	ICD-10-CM
H26.31	Drug-induced cataract, right eye	Diagnosis	ICD-10-CM
H26.32	Drug-induced cataract, left eye	Diagnosis	ICD-10-CM
H26.33	Drug-induced cataract, bilateral	Diagnosis	ICD-10-CM
H26.40	Unspecified secondary cataract	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
H26.411	Soemmering's ring, right eye	Diagnosis	ICD-10-CM
H26.412	Soemmering's ring, left eye	Diagnosis	ICD-10-CM
H26.413	Soemmering's ring, bilateral	Diagnosis	ICD-10-CM
H26.419	Soemmering's ring, unspecified eye	Diagnosis	ICD-10-CM
H26.491	Other secondary cataract, right eye	Diagnosis	ICD-10-CM
H26.492	Other secondary cataract, left eye	Diagnosis	ICD-10-CM
H26.493	Other secondary cataract, bilateral	Diagnosis	ICD-10-CM
H26.499	Other secondary cataract, unspecified eye	Diagnosis	ICD-10-CM
H26.8	Other specified cataract	Diagnosis	ICD-10-CM
H26.9	Unspecified cataract	Diagnosis	ICD-10-CM
Q12.0	Congenital cataract	Diagnosis	ICD-10-CM
Z96.1	Presence of intraocular lens	Diagnosis	ICD-10-CM
Chronic Kidney Disease			
A18.11	Tuberculosis of kidney and ureter	Diagnosis	ICD-10-CM
A52.75	Syphilis of kidney and ureter	Diagnosis	ICD-10-CM
B52.0	Plasmodium malariae malaria with nephropathy	Diagnosis	ICD-10-CM
C64.1	Malignant neoplasm of right kidney, except renal pelvis	Diagnosis	ICD-10-CM
C64.2	Malignant neoplasm of left kidney, except renal pelvis	Diagnosis	ICD-10-CM
C64.9	Malignant neoplasm of unspecified kidney, except renal pelvis	Diagnosis	ICD-10-CM
C68.9	Malignant neoplasm of urinary organ, unspecified	Diagnosis	ICD-10-CM
D30.00	Benign neoplasm of unspecified kidney	Diagnosis	ICD-10-CM
D30.01	Benign neoplasm of right kidney	Diagnosis	ICD-10-CM
D30.02	Benign neoplasm of left kidney	Diagnosis	ICD-10-CM
D41.00	Neoplasm of uncertain behavior of unspecified kidney	Diagnosis	ICD-10-CM
D41.01	Neoplasm of uncertain behavior of right kidney	Diagnosis	ICD-10-CM
D41.02	Neoplasm of uncertain behavior of left kidney	Diagnosis	ICD-10-CM
D41.10	Neoplasm of uncertain behavior of unspecified renal pelvis	Diagnosis	ICD-10-CM
D41.11	Neoplasm of uncertain behavior of right renal pelvis	Diagnosis	ICD-10-CM
D41.12	Neoplasm of uncertain behavior of left renal pelvis	Diagnosis	ICD-10-CM
D41.20	Neoplasm of uncertain behavior of unspecified ureter	Diagnosis	ICD-10-CM
D41.21	Neoplasm of uncertain behavior of right ureter	Diagnosis	ICD-10-CM
D41.22	Neoplasm of uncertain behavior of left ureter	Diagnosis	ICD-10-CM
D59.3	Hemolytic-uremic syndrome	Diagnosis	ICD-10-CM
E08.21	Diabetes mellitus due to underlying condition with diabetic nephropathy	Diagnosis	ICD-10-CM
E08.22	Diabetes mellitus due to underlying condition with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E08.29	Diabetes mellitus due to underlying condition with other diabetic kidney complication	Diagnosis	ICD-10-CM
E08.65	Diabetes mellitus due to underlying condition with hyperglycemia	Diagnosis	ICD-10-CM
E09.21	Drug or chemical induced diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E09.22	Drug or chemical induced diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E09.29	Drug or chemical induced diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E10.21	Type 1 diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E10.22	Type 1 diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E10.29	Type 1 diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E10.65	Type 1 diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E11.21	Type 2 diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
E11.22	Type 2 diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E11.29	Type 2 diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E11.65	Type 2 diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E13.21	Other specified diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E13.22	Other specified diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E13.29	Other specified diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E74.8	Other specified disorders of carbohydrate metabolism	Diagnosis	ICD-10-CM
I12.0	Hypertensive chronic kidney disease with stage 5 chronic kidney disease or end stage renal disease	Diagnosis	ICD-10-CM
I12.9	Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.10	Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.11	Hypertensive heart and chronic kidney disease without heart failure, with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I70.1	Atherosclerosis of renal artery	Diagnosis	ICD-10-CM
I72.2	Aneurysm of renal artery	Diagnosis	ICD-10-CM
K76.7	Hepatorenal syndrome	Diagnosis	ICD-10-CM
M10.30	Gout due to renal impairment, unspecified site	Diagnosis	ICD-10-CM
M10.311	Gout due to renal impairment, right shoulder	Diagnosis	ICD-10-CM
M10.312	Gout due to renal impairment, left shoulder	Diagnosis	ICD-10-CM
M10.319	Gout due to renal impairment, unspecified shoulder	Diagnosis	ICD-10-CM
M10.321	Gout due to renal impairment, right elbow	Diagnosis	ICD-10-CM
M10.322	Gout due to renal impairment, left elbow	Diagnosis	ICD-10-CM
M10.329	Gout due to renal impairment, unspecified elbow	Diagnosis	ICD-10-CM
M10.331	Gout due to renal impairment, right wrist	Diagnosis	ICD-10-CM
M10.332	Gout due to renal impairment, left wrist	Diagnosis	ICD-10-CM
M10.339	Gout due to renal impairment, unspecified wrist	Diagnosis	ICD-10-CM
M10.341	Gout due to renal impairment, right hand	Diagnosis	ICD-10-CM
M10.342	Gout due to renal impairment, left hand	Diagnosis	ICD-10-CM
M10.349	Gout due to renal impairment, unspecified hand	Diagnosis	ICD-10-CM
M10.351	Gout due to renal impairment, right hip	Diagnosis	ICD-10-CM
M10.352	Gout due to renal impairment, left hip	Diagnosis	ICD-10-CM
M10.359	Gout due to renal impairment, unspecified hip	Diagnosis	ICD-10-CM
M10.361	Gout due to renal impairment, right knee	Diagnosis	ICD-10-CM
M10.362	Gout due to renal impairment, left knee	Diagnosis	ICD-10-CM
M10.369	Gout due to renal impairment, unspecified knee	Diagnosis	ICD-10-CM
M10.371	Gout due to renal impairment, right ankle and foot	Diagnosis	ICD-10-CM
M10.372	Gout due to renal impairment, left ankle and foot	Diagnosis	ICD-10-CM
M10.379	Gout due to renal impairment, unspecified ankle and foot	Diagnosis	ICD-10-CM
M10.38	Gout due to renal impairment, vertebrae	Diagnosis	ICD-10-CM
M10.39	Gout due to renal impairment, multiple sites	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M32.14	Glomerular disease in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M32.15	Tubulo-interstitial nephropathy in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M35.04	Sicca syndrome with tubulo-interstitial nephropathy	Diagnosis	ICD-10-CM
M35.0A	Sjogren syndrome with glomerular disease	Diagnosis	ICD-10-CM
N00.0	Acute nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N00.1	Acute nephritic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N00.2	Acute nephritic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N00.3	Acute nephritic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N00.4	Acute nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N00.5	Acute nephritic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N00.6	Acute nephritic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N00.7	Acute nephritic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N00.8	Acute nephritic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N00.9	Acute nephritic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N01.0	Rapidly progressive nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N01.1	Rapidly progressive nephritic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N01.2	Rapidly progressive nephritic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N01.3	Rapidly progressive nephritic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N01.4	Rapidly progressive nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N01.5	Rapidly progressive nephritic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N01.6	Rapidly progressive nephritic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N01.7	Rapidly progressive nephritic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N01.8	Rapidly progressive nephritic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N01.9	Rapidly progressive nephritic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N01.A	Rapidly progressive nephritic syndrome with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N02.0	Recurrent and persistent hematuria with minor glomerular abnormality	Diagnosis	ICD-10-CM
N02.1	Recurrent and persistent hematuria with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N02.2	Recurrent and persistent hematuria with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N02.3	Recurrent and persistent hematuria with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N02.4	Recurrent and persistent hematuria with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N02.5	Recurrent and persistent hematuria with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N02.6	Recurrent and persistent hematuria with dense deposit disease	Diagnosis	ICD-10-CM
N02.7	Recurrent and persistent hematuria with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N02.8	Recurrent and persistent hematuria with other morphologic changes	Diagnosis	ICD-10-CM
N02.9	Recurrent and persistent hematuria with unspecified morphologic changes	Diagnosis	ICD-10-CM
N02.A	Recurrent and persistent hematuria with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N03.0	Chronic nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
N03.1	Chronic nephritic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N03.2	Chronic nephritic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N03.3	Chronic nephritic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N03.4	Chronic nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N03.5	Chronic nephritic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N03.6	Chronic nephritic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N03.7	Chronic nephritic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N03.8	Chronic nephritic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N03.9	Chronic nephritic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N03.A	Chronic nephritic syndrome with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N04.0	Nephrotic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N04.1	Nephrotic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N04.2	Nephrotic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N04.3	Nephrotic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N04.4	Nephrotic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N04.5	Nephrotic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N04.6	Nephrotic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N04.7	Nephrotic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N04.8	Nephrotic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N04.9	Nephrotic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N04.A	Nephrotic syndrome with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N05.0	Unspecified nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N05.1	Unspecified nephritic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N05.2	Unspecified nephritic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N05.3	Unspecified nephritic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N05.4	Unspecified nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N05.5	Unspecified nephritic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N05.6	Unspecified nephritic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N05.7	Unspecified nephritic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N05.8	Unspecified nephritic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N05.9	Unspecified nephritic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N05.A	Unspecified nephritic syndrome with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N06.0	Isolated proteinuria with minor glomerular abnormality	Diagnosis	ICD-10-CM
N06.1	Isolated proteinuria with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N06.2	Isolated proteinuria with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N06.3	Isolated proteinuria with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N06.4	Isolated proteinuria with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N06.5	Isolated proteinuria with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N06.6	Isolated proteinuria with dense deposit disease	Diagnosis	ICD-10-CM
N06.7	Isolated proteinuria with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N06.8	Isolated proteinuria with other morphologic lesion	Diagnosis	ICD-10-CM
N06.9	Isolated proteinuria with unspecified morphologic lesion	Diagnosis	ICD-10-CM
N06.A	Isolated proteinuria with C3 glomerulonephritis	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
N07.0	Hereditary nephropathy, not elsewhere classified with minor glomerular abnormality	Diagnosis	ICD-10-CM
N07.1	Hereditary nephropathy, not elsewhere classified with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N07.2	Hereditary nephropathy, not elsewhere classified with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N07.3	Hereditary nephropathy, not elsewhere classified with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N07.4	Hereditary nephropathy, not elsewhere classified with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N07.5	Hereditary nephropathy, not elsewhere classified with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N07.6	Hereditary nephropathy, not elsewhere classified with dense deposit disease	Diagnosis	ICD-10-CM
N07.7	Hereditary nephropathy, not elsewhere classified with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N07.8	Hereditary nephropathy, not elsewhere classified with other morphologic lesions	Diagnosis	ICD-10-CM
N07.9	Hereditary nephropathy, not elsewhere classified with unspecified morphologic lesions	Diagnosis	ICD-10-CM
N07.A	Hereditary nephropathy, not elsewhere classified with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N08	Glomerular disorders in diseases classified elsewhere	Diagnosis	ICD-10-CM
N13.1	Hydronephrosis with ureteral stricture, not elsewhere classified	Diagnosis	ICD-10-CM
N13.2	Hydronephrosis with renal and ureteral calculous obstruction	Diagnosis	ICD-10-CM
N13.30	Unspecified hydronephrosis	Diagnosis	ICD-10-CM
N13.39	Other hydronephrosis	Diagnosis	ICD-10-CM
N14.0	Analgesic nephropathy	Diagnosis	ICD-10-CM
N14.1	Nephropathy induced by other drugs, medicaments and biological substances	Diagnosis	ICD-10-CM
N14.2	Nephropathy induced by unspecified drug, medicament or biological substance	Diagnosis	ICD-10-CM
N14.3	Nephropathy induced by heavy metals	Diagnosis	ICD-10-CM
N14.4	Toxic nephropathy, not elsewhere classified	Diagnosis	ICD-10-CM
N15.0	Balkan nephropathy	Diagnosis	ICD-10-CM
N15.8	Other specified renal tubulo-interstitial diseases	Diagnosis	ICD-10-CM
N15.9	Renal tubulo-interstitial disease, unspecified	Diagnosis	ICD-10-CM
N16	Renal tubulo-interstitial disorders in diseases classified elsewhere	Diagnosis	ICD-10-CM
N17.0	Acute kidney failure with tubular necrosis	Diagnosis	ICD-10-CM
N17.1	Acute kidney failure with acute cortical necrosis	Diagnosis	ICD-10-CM
N17.2	Acute kidney failure with medullary necrosis	Diagnosis	ICD-10-CM
N17.8	Other acute kidney failure	Diagnosis	ICD-10-CM
N17.9	Acute kidney failure, unspecified	Diagnosis	ICD-10-CM
N18.1	Chronic kidney disease, stage 1	Diagnosis	ICD-10-CM
N18.2	Chronic kidney disease, stage 2 (mild)	Diagnosis	ICD-10-CM
N18.3	Chronic kidney disease, stage 3 (moderate)	Diagnosis	ICD-10-CM
N18.30	Chronic kidney disease, stage 3 unspecified	Diagnosis	ICD-10-CM
N18.31	Chronic kidney disease, stage 3a	Diagnosis	ICD-10-CM
N18.32	Chronic kidney disease, stage 3b	Diagnosis	ICD-10-CM
N18.4	Chronic kidney disease, stage 4 (severe)	Diagnosis	ICD-10-CM
N18.5	Chronic kidney disease, stage 5	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
N18.6	End stage renal disease	Diagnosis	ICD-10-CM
N18.9	Chronic kidney disease, unspecified	Diagnosis	ICD-10-CM
N19	Unspecified kidney failure	Diagnosis	ICD-10-CM
N25.0	Renal osteodystrophy	Diagnosis	ICD-10-CM
N25.1	Nephrogenic diabetes insipidus	Diagnosis	ICD-10-CM
N25.81	Secondary hyperparathyroidism of renal origin	Diagnosis	ICD-10-CM
N25.89	Other disorders resulting from impaired renal tubular function	Diagnosis	ICD-10-CM
N25.9	Disorder resulting from impaired renal tubular function, unspecified	Diagnosis	ICD-10-CM
N26.1	Atrophy of kidney (terminal)	Diagnosis	ICD-10-CM
N26.9	Renal sclerosis, unspecified	Diagnosis	ICD-10-CM
N99.0	Postprocedural (acute) (chronic) kidney failure	Diagnosis	ICD-10-CM
Q61.02	Congenital multiple renal cysts	Diagnosis	ICD-10-CM
Q61.11	Cystic dilatation of collecting ducts	Diagnosis	ICD-10-CM
Q61.19	Other polycystic kidney, infantile type	Diagnosis	ICD-10-CM
Q61.2	Polycystic kidney, adult type	Diagnosis	ICD-10-CM
Q61.3	Polycystic kidney, unspecified	Diagnosis	ICD-10-CM
Q61.4	Renal dysplasia	Diagnosis	ICD-10-CM
Q61.5	Medullary cystic kidney	Diagnosis	ICD-10-CM
Q61.8	Other cystic kidney diseases	Diagnosis	ICD-10-CM
Q62.0	Congenital hydronephrosis	Diagnosis	ICD-10-CM
Q62.10	Congenital occlusion of ureter, unspecified	Diagnosis	ICD-10-CM
Q62.11	Congenital occlusion of ureteropelvic junction	Diagnosis	ICD-10-CM
Q62.12	Congenital occlusion of ureterovesical orifice	Diagnosis	ICD-10-CM
Q62.2	Congenital megaureter	Diagnosis	ICD-10-CM
Q62.31	Congenital ureterocele, orthotopic	Diagnosis	ICD-10-CM
Q62.32	Cecoureterocele	Diagnosis	ICD-10-CM
Q62.39	Other obstructive defects of renal pelvis and ureter	Diagnosis	ICD-10-CM
R94.4	Abnormal results of kidney function studies	Diagnosis	ICD-10-CM
Chronic obstructive pulmonary disease & bronchiectasis			
J40	Bronchitis, not specified as acute or chronic	Diagnosis	ICD-10-CM
J41.0	Simple chronic bronchitis	Diagnosis	ICD-10-CM
J41.1	Mucopurulent chronic bronchitis	Diagnosis	ICD-10-CM
J41.8	Mixed simple and mucopurulent chronic bronchitis	Diagnosis	ICD-10-CM
J42	Unspecified chronic bronchitis	Diagnosis	ICD-10-CM
J43.0	Unilateral pulmonary emphysema [MacLeod's syndrome]	Diagnosis	ICD-10-CM
J43.1	Panlobular emphysema	Diagnosis	ICD-10-CM
J43.2	Centrilobular emphysema	Diagnosis	ICD-10-CM
J43.8	Other emphysema	Diagnosis	ICD-10-CM
J43.9	Emphysema, unspecified	Diagnosis	ICD-10-CM
J44.0	Chronic obstructive pulmonary disease with acute lower respiratory infection	Diagnosis	ICD-10-CM
J44.1	Chronic obstructive pulmonary disease with (acute) exacerbation	Diagnosis	ICD-10-CM
J44.9	Chronic obstructive pulmonary disease, unspecified	Diagnosis	ICD-10-CM
J47.0	Bronchiectasis with acute lower respiratory infection	Diagnosis	ICD-10-CM
J47.1	Bronchiectasis with (acute) exacerbation	Diagnosis	ICD-10-CM
J47.9	Bronchiectasis, uncomplicated	Diagnosis	ICD-10-CM
J98.2	Interstitial emphysema	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
J98.3	Compensatory emphysema	Diagnosis	ICD-10-CM
Depression			
F06.31	Mood disorder due to known physiological condition with depressive features	Diagnosis	ICD-10-CM
F06.32	Mood disorder due to known physiological condition with major depressive-like episode	Diagnosis	ICD-10-CM
F31.0	Bipolar disorder, current episode hypomanic	Diagnosis	ICD-10-CM
F31.10	Bipolar disorder, current episode manic without psychotic features, unspecified	Diagnosis	ICD-10-CM
F31.11	Bipolar disorder, current episode manic without psychotic features, mild	Diagnosis	ICD-10-CM
F31.12	Bipolar disorder, current episode manic without psychotic features, moderate	Diagnosis	ICD-10-CM
F31.13	Bipolar disorder, current episode manic without psychotic features, severe	Diagnosis	ICD-10-CM
F31.2	Bipolar disorder, current episode manic severe with psychotic features	Diagnosis	ICD-10-CM
F31.30	Bipolar disorder, current episode depressed, mild or moderate severity, unspecified	Diagnosis	ICD-10-CM
F31.31	Bipolar disorder, current episode depressed, mild	Diagnosis	ICD-10-CM
F31.32	Bipolar disorder, current episode depressed, moderate	Diagnosis	ICD-10-CM
F31.4	Bipolar disorder, current episode depressed, severe, without psychotic features	Diagnosis	ICD-10-CM
F31.5	Bipolar disorder, current episode depressed, severe, with psychotic features	Diagnosis	ICD-10-CM
F31.60	Bipolar disorder, current episode mixed, unspecified	Diagnosis	ICD-10-CM
F31.61	Bipolar disorder, current episode mixed, mild	Diagnosis	ICD-10-CM
F31.62	Bipolar disorder, current episode mixed, moderate	Diagnosis	ICD-10-CM
F31.63	Bipolar disorder, current episode mixed, severe, without psychotic features	Diagnosis	ICD-10-CM
F31.64	Bipolar disorder, current episode mixed, severe, with psychotic features	Diagnosis	ICD-10-CM
F31.71	Bipolar disorder, in partial remission, most recent episode hypomanic	Diagnosis	ICD-10-CM
F31.73	Bipolar disorder, in partial remission, most recent episode manic	Diagnosis	ICD-10-CM
F31.75	Bipolar disorder, in partial remission, most recent episode depressed	Diagnosis	ICD-10-CM
F31.76	Bipolar disorder, in full remission, most recent episode depressed	Diagnosis	ICD-10-CM
F31.77	Bipolar disorder, in partial remission, most recent episode mixed	Diagnosis	ICD-10-CM
F31.78	Bipolar disorder, in full remission, most recent episode mixed	Diagnosis	ICD-10-CM
F31.81	Bipolar II disorder	Diagnosis	ICD-10-CM
F31.89	Other bipolar disorder	Diagnosis	ICD-10-CM
F31.9	Bipolar disorder, unspecified	Diagnosis	ICD-10-CM
F32.0	Major depressive disorder, single episode, mild	Diagnosis	ICD-10-CM
F32.1	Major depressive disorder, single episode, moderate	Diagnosis	ICD-10-CM
F32.2	Major depressive disorder, single episode, severe without psychotic features	Diagnosis	ICD-10-CM
F32.3	Major depressive disorder, single episode, severe with psychotic features	Diagnosis	ICD-10-CM
F32.4	Major depressive disorder, single episode, in partial remission	Diagnosis	ICD-10-CM
F32.5	Major depressive disorder, single episode, in full remission	Diagnosis	ICD-10-CM
F32.8	Other depressive episodes	Diagnosis	ICD-10-CM
F32.89	Other specified depressive episodes	Diagnosis	ICD-10-CM
F32.9	Major depressive disorder, single episode, unspecified	Diagnosis	ICD-10-CM
F32.A	Depression, unspecified	Diagnosis	ICD-10-CM
F33.0	Major depressive disorder, recurrent, mild	Diagnosis	ICD-10-CM
F33.1	Major depressive disorder, recurrent, moderate	Diagnosis	ICD-10-CM
F33.2	Major depressive disorder, recurrent severe without psychotic features	Diagnosis	ICD-10-CM
F33.3	Major depressive disorder, recurrent, severe with psychotic symptoms	Diagnosis	ICD-10-CM
F33.40	Major depressive disorder, recurrent, in remission, unspecified	Diagnosis	ICD-10-CM
F33.41	Major depressive disorder, recurrent, in partial remission	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
F33.42	Major depressive disorder, recurrent, in full remission	Diagnosis	ICD-10-CM
F33.8	Other recurrent depressive disorders	Diagnosis	ICD-10-CM
F33.9	Major depressive disorder, recurrent, unspecified	Diagnosis	ICD-10-CM
F34.0	Cyclothymic disorder	Diagnosis	ICD-10-CM
F34.1	Dysthymic disorder	Diagnosis	ICD-10-CM
F43.21	Adjustment disorder with depressed mood	Diagnosis	ICD-10-CM
F43.23	Adjustment disorder with mixed anxiety and depressed mood	Diagnosis	ICD-10-CM
Diabetes			
E10.10	Type 1 diabetes mellitus with ketoacidosis without coma	Diagnosis	ICD-10-CM
E10.11	Type 1 diabetes mellitus with ketoacidosis with coma	Diagnosis	ICD-10-CM
E10.21	Type 1 diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E10.22	Type 1 diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E10.29	Type 1 diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E10.311	Type 1 diabetes mellitus with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E10.319	Type 1 diabetes mellitus with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E10.3211	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E10.3212	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E10.3213	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3219	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.3291	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E10.3292	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E10.3293	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3299	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.3311	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E10.3312	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E10.3313	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3319	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.3391	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E10.3392	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E10.3393	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
E10.3399	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.3411	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E10.3412	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E10.3413	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3419	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.3491	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E10.3492	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E10.3493	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3499	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.3511	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E10.3512	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E10.3513	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3519	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.3521	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM
E10.3522	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E10.3523	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM
E10.3529	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E10.3531	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM
E10.3532	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E10.3533	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E10.3539	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E10.3541	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E10.3542	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
E10.3543	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM
E10.3549	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified eye	Diagnosis	ICD-10-CM
E10.3551	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM
E10.3552	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM
E10.3553	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
E10.3559	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E10.3591	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E10.3592	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E10.3593	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3599	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.36	Type 1 diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E10.37X1	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, right eye	Diagnosis	ICD-10-CM
E10.37X2	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, left eye	Diagnosis	ICD-10-CM
E10.37X3	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, bilateral	Diagnosis	ICD-10-CM
E10.37X9	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, unspecified eye	Diagnosis	ICD-10-CM
E10.39	Type 1 diabetes mellitus with other diabetic ophthalmic complication	Diagnosis	ICD-10-CM
E10.40	Type 1 diabetes mellitus with diabetic neuropathy, unspecified	Diagnosis	ICD-10-CM
E10.41	Type 1 diabetes mellitus with diabetic mononeuropathy	Diagnosis	ICD-10-CM
E10.42	Type 1 diabetes mellitus with diabetic polyneuropathy	Diagnosis	ICD-10-CM
E10.43	Type 1 diabetes mellitus with diabetic autonomic (poly)neuropathy	Diagnosis	ICD-10-CM
E10.44	Type 1 diabetes mellitus with diabetic amyotrophy	Diagnosis	ICD-10-CM
E10.49	Type 1 diabetes mellitus with other diabetic neurological complication	Diagnosis	ICD-10-CM
E10.51	Type 1 diabetes mellitus with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E10.52	Type 1 diabetes mellitus with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E10.59	Type 1 diabetes mellitus with other circulatory complications	Diagnosis	ICD-10-CM
E10.610	Type 1 diabetes mellitus with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM
E10.618	Type 1 diabetes mellitus with other diabetic arthropathy	Diagnosis	ICD-10-CM
E10.620	Type 1 diabetes mellitus with diabetic dermatitis	Diagnosis	ICD-10-CM
E10.621	Type 1 diabetes mellitus with foot ulcer	Diagnosis	ICD-10-CM
E10.622	Type 1 diabetes mellitus with other skin ulcer	Diagnosis	ICD-10-CM
E10.628	Type 1 diabetes mellitus with other skin complications	Diagnosis	ICD-10-CM
E10.630	Type 1 diabetes mellitus with periodontal disease	Diagnosis	ICD-10-CM
E10.638	Type 1 diabetes mellitus with other oral complications	Diagnosis	ICD-10-CM
E10.641	Type 1 diabetes mellitus with hypoglycemia with coma	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
E10.649	Type 1 diabetes mellitus with hypoglycemia without coma	Diagnosis	ICD-10-CM
E10.65	Type 1 diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E10.69	Type 1 diabetes mellitus with other specified complication	Diagnosis	ICD-10-CM
E10.8	Type 1 diabetes mellitus with unspecified complications	Diagnosis	ICD-10-CM
E10.9	Type 1 diabetes mellitus without complications	Diagnosis	ICD-10-CM
E11.00	Type 2 diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)	Diagnosis	ICD-10-CM
E11.01	Type 2 diabetes mellitus with hyperosmolarity with coma	Diagnosis	ICD-10-CM
E11.21	Type 2 diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E11.22	Type 2 diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E11.29	Type 2 diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E11.311	Type 2 diabetes mellitus with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E11.319	Type 2 diabetes mellitus with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E11.3211	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E11.3212	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E11.3213	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3219	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.3291	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E11.3292	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E11.3293	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3299	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.3311	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E11.3312	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E11.3313	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3319	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.3391	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E11.3392	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E11.3393	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3399	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
E11.3411	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E11.3412	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E11.3413	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3419	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.3491	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E11.3492	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E11.3493	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3499	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.3511	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E11.3512	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E11.3513	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3519	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.3521	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM
E11.3522	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E11.3523	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM
E11.3529	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E11.3531	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM
E11.3532	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E11.3533	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E11.3539	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E11.3541	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E11.3542	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E11.3543	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified eye		
E11.3549	eye	Diagnosis	ICD-10-CM
E11.3551	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM
E11.3552	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM
E11.3553	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, unspecified eye		
E11.3559	eye	Diagnosis	ICD-10-CM
	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, right eye		
E11.3591	eye	Diagnosis	ICD-10-CM
	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, left eye		
E11.3592	eye	Diagnosis	ICD-10-CM
	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, bilateral		
E11.3593	eye	Diagnosis	ICD-10-CM
	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, unspecified eye		
E11.3599	eye	Diagnosis	ICD-10-CM
E11.36	Type 2 diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, right eye		
E11.37X1	eye	Diagnosis	ICD-10-CM
	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, left eye		
E11.37X2	eye	Diagnosis	ICD-10-CM
	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, bilateral		
E11.37X3	eye	Diagnosis	ICD-10-CM
	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, unspecified eye		
E11.37X9	eye	Diagnosis	ICD-10-CM
E11.39	Type 2 diabetes mellitus with other diabetic ophthalmic complication	Diagnosis	ICD-10-CM
E11.40	Type 2 diabetes mellitus with diabetic neuropathy, unspecified	Diagnosis	ICD-10-CM
E11.41	Type 2 diabetes mellitus with diabetic mononeuropathy	Diagnosis	ICD-10-CM
E11.42	Type 2 diabetes mellitus with diabetic polyneuropathy	Diagnosis	ICD-10-CM
E11.43	Type 2 diabetes mellitus with diabetic autonomic (poly)neuropathy	Diagnosis	ICD-10-CM
E11.44	Type 2 diabetes mellitus with diabetic amyotrophy	Diagnosis	ICD-10-CM
E11.49	Type 2 diabetes mellitus with other diabetic neurological complication	Diagnosis	ICD-10-CM
E11.51	Type 2 diabetes mellitus with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E11.52	Type 2 diabetes mellitus with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E11.59	Type 2 diabetes mellitus with other circulatory complications	Diagnosis	ICD-10-CM
E11.610	Type 2 diabetes mellitus with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM
E11.618	Type 2 diabetes mellitus with other diabetic arthropathy	Diagnosis	ICD-10-CM
E11.620	Type 2 diabetes mellitus with diabetic dermatitis	Diagnosis	ICD-10-CM
E11.621	Type 2 diabetes mellitus with foot ulcer	Diagnosis	ICD-10-CM
E11.622	Type 2 diabetes mellitus with other skin ulcer	Diagnosis	ICD-10-CM
E11.628	Type 2 diabetes mellitus with other skin complications	Diagnosis	ICD-10-CM
E11.630	Type 2 diabetes mellitus with periodontal disease	Diagnosis	ICD-10-CM
E11.638	Type 2 diabetes mellitus with other oral complications	Diagnosis	ICD-10-CM
E11.641	Type 2 diabetes mellitus with hypoglycemia with coma	Diagnosis	ICD-10-CM
E11.649	Type 2 diabetes mellitus with hypoglycemia without coma	Diagnosis	ICD-10-CM
E11.65	Type 2 diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
E11.69	Type 2 diabetes mellitus with other specified complication	Diagnosis	ICD-10-CM
E11.8	Type 2 diabetes mellitus with unspecified complications	Diagnosis	ICD-10-CM
E11.9	Type 2 diabetes mellitus without complications	Diagnosis	ICD-10-CM
Glaucoma			
H40.001	Preglaucoma, unspecified, right eye	Diagnosis	ICD-10-CM
H40.002	Preglaucoma, unspecified, left eye	Diagnosis	ICD-10-CM
H40.003	Preglaucoma, unspecified, bilateral	Diagnosis	ICD-10-CM
H40.009	Preglaucoma, unspecified, unspecified eye	Diagnosis	ICD-10-CM
H40.011	Open angle with borderline findings, low risk, right eye	Diagnosis	ICD-10-CM
H40.012	Open angle with borderline findings, low risk, left eye	Diagnosis	ICD-10-CM
H40.013	Open angle with borderline findings, low risk, bilateral	Diagnosis	ICD-10-CM
H40.019	Open angle with borderline findings, low risk, unspecified eye	Diagnosis	ICD-10-CM
H40.021	Open angle with borderline findings, high risk, right eye	Diagnosis	ICD-10-CM
H40.022	Open angle with borderline findings, high risk, left eye	Diagnosis	ICD-10-CM
H40.023	Open angle with borderline findings, high risk, bilateral	Diagnosis	ICD-10-CM
H40.029	Open angle with borderline findings, high risk, unspecified eye	Diagnosis	ICD-10-CM
H40.031	Anatomical narrow angle, right eye	Diagnosis	ICD-10-CM
H40.032	Anatomical narrow angle, left eye	Diagnosis	ICD-10-CM
H40.033	Anatomical narrow angle, bilateral	Diagnosis	ICD-10-CM
H40.039	Anatomical narrow angle, unspecified eye	Diagnosis	ICD-10-CM
H40.041	Steroid responder, right eye	Diagnosis	ICD-10-CM
H40.042	Steroid responder, left eye	Diagnosis	ICD-10-CM
H40.043	Steroid responder, bilateral	Diagnosis	ICD-10-CM
H40.049	Steroid responder, unspecified eye	Diagnosis	ICD-10-CM
H40.051	Ocular hypertension, right eye	Diagnosis	ICD-10-CM
H40.052	Ocular hypertension, left eye	Diagnosis	ICD-10-CM
H40.053	Ocular hypertension, bilateral	Diagnosis	ICD-10-CM
H40.059	Ocular hypertension, unspecified eye	Diagnosis	ICD-10-CM
H40.10X0	Unspecified open-angle glaucoma, stage unspecified	Diagnosis	ICD-10-CM
H40.10X1	Unspecified open-angle glaucoma, mild stage	Diagnosis	ICD-10-CM
H40.10X2	Unspecified open-angle glaucoma, moderate stage	Diagnosis	ICD-10-CM
H40.10X3	Unspecified open-angle glaucoma, severe stage	Diagnosis	ICD-10-CM
H40.10X4	Unspecified open-angle glaucoma, indeterminate stage	Diagnosis	ICD-10-CM
H40.1110	Primary open-angle glaucoma, right eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1111	Primary open-angle glaucoma, right eye, mild stage	Diagnosis	ICD-10-CM
H40.1112	Primary open-angle glaucoma, right eye, moderate stage	Diagnosis	ICD-10-CM
H40.1113	Primary open-angle glaucoma, right eye, severe stage	Diagnosis	ICD-10-CM
H40.1114	Primary open-angle glaucoma, right eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.1120	Primary open-angle glaucoma, left eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1121	Primary open-angle glaucoma, left eye, mild stage	Diagnosis	ICD-10-CM
H40.1122	Primary open-angle glaucoma, left eye, moderate stage	Diagnosis	ICD-10-CM
H40.1123	Primary open-angle glaucoma, left eye, severe stage	Diagnosis	ICD-10-CM
H40.1124	Primary open-angle glaucoma, left eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.1130	Primary open-angle glaucoma, bilateral, stage unspecified	Diagnosis	ICD-10-CM
H40.1131	Primary open-angle glaucoma, bilateral, mild stage	Diagnosis	ICD-10-CM
H40.1132	Primary open-angle glaucoma, bilateral, moderate stage	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
H40.1133	Primary open-angle glaucoma, bilateral, severe stage	Diagnosis	ICD-10-CM
H40.1134	Primary open-angle glaucoma, bilateral, indeterminate stage	Diagnosis	ICD-10-CM
H40.1190	Primary open-angle glaucoma, unspecified eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1191	Primary open-angle glaucoma, unspecified eye, mild stage	Diagnosis	ICD-10-CM
H40.1192	Primary open-angle glaucoma, unspecified eye, moderate stage	Diagnosis	ICD-10-CM
H40.1193	Primary open-angle glaucoma, unspecified eye, severe stage	Diagnosis	ICD-10-CM
H40.1194	Primary open-angle glaucoma, unspecified eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.11X0	Primary open-angle glaucoma, stage unspecified	Diagnosis	ICD-10-CM
H40.11X1	Primary open-angle glaucoma, mild stage	Diagnosis	ICD-10-CM
H40.11X2	Primary open-angle glaucoma, moderate stage	Diagnosis	ICD-10-CM
H40.11X3	Primary open-angle glaucoma, severe stage	Diagnosis	ICD-10-CM
H40.11X4	Primary open-angle glaucoma, indeterminate stage	Diagnosis	ICD-10-CM
H40.1210	Low-tension glaucoma, right eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1211	Low-tension glaucoma, right eye, mild stage	Diagnosis	ICD-10-CM
H40.1212	Low-tension glaucoma, right eye, moderate stage	Diagnosis	ICD-10-CM
H40.1213	Low-tension glaucoma, right eye, severe stage	Diagnosis	ICD-10-CM
H40.1214	Low-tension glaucoma, right eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.1220	Low-tension glaucoma, left eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1221	Low-tension glaucoma, left eye, mild stage	Diagnosis	ICD-10-CM
H40.1222	Low-tension glaucoma, left eye, moderate stage	Diagnosis	ICD-10-CM
H40.1223	Low-tension glaucoma, left eye, severe stage	Diagnosis	ICD-10-CM
H40.1224	Low-tension glaucoma, left eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.1230	Low-tension glaucoma, bilateral, stage unspecified	Diagnosis	ICD-10-CM
H40.1231	Low-tension glaucoma, bilateral, mild stage	Diagnosis	ICD-10-CM
H40.1232	Low-tension glaucoma, bilateral, moderate stage	Diagnosis	ICD-10-CM
H40.1233	Low-tension glaucoma, bilateral, severe stage	Diagnosis	ICD-10-CM
H40.1234	Low-tension glaucoma, bilateral, indeterminate stage	Diagnosis	ICD-10-CM
H40.1290	Low-tension glaucoma, unspecified eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1291	Low-tension glaucoma, unspecified eye, mild stage	Diagnosis	ICD-10-CM
H40.1292	Low-tension glaucoma, unspecified eye, moderate stage	Diagnosis	ICD-10-CM
H40.1293	Low-tension glaucoma, unspecified eye, severe stage	Diagnosis	ICD-10-CM
H40.1294	Low-tension glaucoma, unspecified eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.1310	Pigmentary glaucoma, right eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1311	Pigmentary glaucoma, right eye, mild stage	Diagnosis	ICD-10-CM
H40.1312	Pigmentary glaucoma, right eye, moderate stage	Diagnosis	ICD-10-CM
H40.1313	Pigmentary glaucoma, right eye, severe stage	Diagnosis	ICD-10-CM
H40.1314	Pigmentary glaucoma, right eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.1320	Pigmentary glaucoma, left eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1321	Pigmentary glaucoma, left eye, mild stage	Diagnosis	ICD-10-CM
H40.1322	Pigmentary glaucoma, left eye, moderate stage	Diagnosis	ICD-10-CM
H40.1323	Pigmentary glaucoma, left eye, severe stage	Diagnosis	ICD-10-CM
H40.1324	Pigmentary glaucoma, left eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.1330	Pigmentary glaucoma, bilateral, stage unspecified	Diagnosis	ICD-10-CM
H40.1331	Pigmentary glaucoma, bilateral, mild stage	Diagnosis	ICD-10-CM
H40.1332	Pigmentary glaucoma, bilateral, moderate stage	Diagnosis	ICD-10-CM
H40.1333	Pigmentary glaucoma, bilateral, severe stage	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
H40.1334	Pigmentary glaucoma, bilateral, indeterminate stage	Diagnosis	ICD-10-CM
H40.1390	Pigmentary glaucoma, unspecified eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1391	Pigmentary glaucoma, unspecified eye, mild stage	Diagnosis	ICD-10-CM
H40.1392	Pigmentary glaucoma, unspecified eye, moderate stage	Diagnosis	ICD-10-CM
H40.1393	Pigmentary glaucoma, unspecified eye, severe stage	Diagnosis	ICD-10-CM
H40.1394	Pigmentary glaucoma, unspecified eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.1410	Capsular glaucoma with pseudoexfoliation of lens, right eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1411	Capsular glaucoma with pseudoexfoliation of lens, right eye, mild stage	Diagnosis	ICD-10-CM
H40.1412	Capsular glaucoma with pseudoexfoliation of lens, right eye, moderate stage	Diagnosis	ICD-10-CM
H40.1413	Capsular glaucoma with pseudoexfoliation of lens, right eye, severe stage	Diagnosis	ICD-10-CM
H40.1414	Capsular glaucoma with pseudoexfoliation of lens, right eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.1420	Capsular glaucoma with pseudoexfoliation of lens, left eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1421	Capsular glaucoma with pseudoexfoliation of lens, left eye, mild stage	Diagnosis	ICD-10-CM
H40.1422	Capsular glaucoma with pseudoexfoliation of lens, left eye, moderate stage	Diagnosis	ICD-10-CM
H40.1423	Capsular glaucoma with pseudoexfoliation of lens, left eye, severe stage	Diagnosis	ICD-10-CM
H40.1424	Capsular glaucoma with pseudoexfoliation of lens, left eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.1430	Capsular glaucoma with pseudoexfoliation of lens, bilateral, stage unspecified	Diagnosis	ICD-10-CM
H40.1431	Capsular glaucoma with pseudoexfoliation of lens, bilateral, mild stage	Diagnosis	ICD-10-CM
H40.1432	Capsular glaucoma with pseudoexfoliation of lens, bilateral, moderate stage	Diagnosis	ICD-10-CM
H40.1433	Capsular glaucoma with pseudoexfoliation of lens, bilateral, severe stage	Diagnosis	ICD-10-CM
H40.1434	Capsular glaucoma with pseudoexfoliation of lens, bilateral, indeterminate stage	Diagnosis	ICD-10-CM
H40.1490	Capsular glaucoma with pseudoexfoliation of lens, unspecified eye, stage unspecified	Diagnosis	ICD-10-CM
H40.1491	Capsular glaucoma with pseudoexfoliation of lens, unspecified eye, mild stage	Diagnosis	ICD-10-CM
H40.1492	Capsular glaucoma with pseudoexfoliation of lens, unspecified eye, moderate stage	Diagnosis	ICD-10-CM
H40.1493	Capsular glaucoma with pseudoexfoliation of lens, unspecified eye, severe stage	Diagnosis	ICD-10-CM
H40.1494	Capsular glaucoma with pseudoexfoliation of lens, unspecified eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.151	Residual stage of open-angle glaucoma, right eye	Diagnosis	ICD-10-CM
H40.152	Residual stage of open-angle glaucoma, left eye	Diagnosis	ICD-10-CM
H40.153	Residual stage of open-angle glaucoma, bilateral	Diagnosis	ICD-10-CM
H40.159	Residual stage of open-angle glaucoma, unspecified eye	Diagnosis	ICD-10-CM
H40.20X0	Unspecified primary angle-closure glaucoma, stage unspecified	Diagnosis	ICD-10-CM
H40.20X1	Unspecified primary angle-closure glaucoma, mild stage	Diagnosis	ICD-10-CM
H40.20X2	Unspecified primary angle-closure glaucoma, moderate stage	Diagnosis	ICD-10-CM
H40.20X3	Unspecified primary angle-closure glaucoma, severe stage	Diagnosis	ICD-10-CM
H40.20X4	Unspecified primary angle-closure glaucoma, indeterminate stage	Diagnosis	ICD-10-CM
H40.211	Acute angle-closure glaucoma, right eye	Diagnosis	ICD-10-CM
H40.212	Acute angle-closure glaucoma, left eye	Diagnosis	ICD-10-CM
H40.213	Acute angle-closure glaucoma, bilateral	Diagnosis	ICD-10-CM
H40.219	Acute angle-closure glaucoma, unspecified eye	Diagnosis	ICD-10-CM
H40.2210	Chronic angle-closure glaucoma, right eye, stage unspecified	Diagnosis	ICD-10-CM
H40.2211	Chronic angle-closure glaucoma, right eye, mild stage	Diagnosis	ICD-10-CM
H40.2212	Chronic angle-closure glaucoma, right eye, moderate stage	Diagnosis	ICD-10-CM
H40.2213	Chronic angle-closure glaucoma, right eye, severe stage	Diagnosis	ICD-10-CM
H40.2214	Chronic angle-closure glaucoma, right eye, indeterminate stage	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
H40.2220	Chronic angle-closure glaucoma, left eye, stage unspecified	Diagnosis	ICD-10-CM
H40.2221	Chronic angle-closure glaucoma, left eye, mild stage	Diagnosis	ICD-10-CM
H40.2222	Chronic angle-closure glaucoma, left eye, moderate stage	Diagnosis	ICD-10-CM
H40.2223	Chronic angle-closure glaucoma, left eye, severe stage	Diagnosis	ICD-10-CM
H40.2224	Chronic angle-closure glaucoma, left eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.2230	Chronic angle-closure glaucoma, bilateral, stage unspecified	Diagnosis	ICD-10-CM
H40.2231	Chronic angle-closure glaucoma, bilateral, mild stage	Diagnosis	ICD-10-CM
H40.2232	Chronic angle-closure glaucoma, bilateral, moderate stage	Diagnosis	ICD-10-CM
H40.2233	Chronic angle-closure glaucoma, bilateral, severe stage	Diagnosis	ICD-10-CM
H40.2234	Chronic angle-closure glaucoma, bilateral, indeterminate stage	Diagnosis	ICD-10-CM
H40.2290	Chronic angle-closure glaucoma, unspecified eye, stage unspecified	Diagnosis	ICD-10-CM
H40.2291	Chronic angle-closure glaucoma, unspecified eye, mild stage	Diagnosis	ICD-10-CM
H40.2292	Chronic angle-closure glaucoma, unspecified eye, moderate stage	Diagnosis	ICD-10-CM
H40.2293	Chronic angle-closure glaucoma, unspecified eye, severe stage	Diagnosis	ICD-10-CM
H40.2294	Chronic angle-closure glaucoma, unspecified eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.231	Intermittent angle-closure glaucoma, right eye	Diagnosis	ICD-10-CM
H40.232	Intermittent angle-closure glaucoma, left eye	Diagnosis	ICD-10-CM
H40.233	Intermittent angle-closure glaucoma, bilateral	Diagnosis	ICD-10-CM
H40.239	Intermittent angle-closure glaucoma, unspecified eye	Diagnosis	ICD-10-CM
H40.241	Residual stage of angle-closure glaucoma, right eye	Diagnosis	ICD-10-CM
H40.242	Residual stage of angle-closure glaucoma, left eye	Diagnosis	ICD-10-CM
H40.243	Residual stage of angle-closure glaucoma, bilateral	Diagnosis	ICD-10-CM
H40.249	Residual stage of angle-closure glaucoma, unspecified eye	Diagnosis	ICD-10-CM
H40.30X0	Glaucoma secondary to eye trauma, unspecified eye, stage unspecified	Diagnosis	ICD-10-CM
H40.30X1	Glaucoma secondary to eye trauma, unspecified eye, mild stage	Diagnosis	ICD-10-CM
H40.30X2	Glaucoma secondary to eye trauma, unspecified eye, moderate stage	Diagnosis	ICD-10-CM
H40.30X3	Glaucoma secondary to eye trauma, unspecified eye, severe stage	Diagnosis	ICD-10-CM
H40.30X4	Glaucoma secondary to eye trauma, unspecified eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.31X0	Glaucoma secondary to eye trauma, right eye, stage unspecified	Diagnosis	ICD-10-CM
H40.31X1	Glaucoma secondary to eye trauma, right eye, mild stage	Diagnosis	ICD-10-CM
H40.31X2	Glaucoma secondary to eye trauma, right eye, moderate stage	Diagnosis	ICD-10-CM
H40.31X3	Glaucoma secondary to eye trauma, right eye, severe stage	Diagnosis	ICD-10-CM
H40.31X4	Glaucoma secondary to eye trauma, right eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.32X0	Glaucoma secondary to eye trauma, left eye, stage unspecified	Diagnosis	ICD-10-CM
H40.32X1	Glaucoma secondary to eye trauma, left eye, mild stage	Diagnosis	ICD-10-CM
H40.32X2	Glaucoma secondary to eye trauma, left eye, moderate stage	Diagnosis	ICD-10-CM
H40.32X3	Glaucoma secondary to eye trauma, left eye, severe stage	Diagnosis	ICD-10-CM
H40.32X4	Glaucoma secondary to eye trauma, left eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.33X0	Glaucoma secondary to eye trauma, bilateral, stage unspecified	Diagnosis	ICD-10-CM
H40.33X1	Glaucoma secondary to eye trauma, bilateral, mild stage	Diagnosis	ICD-10-CM
H40.33X2	Glaucoma secondary to eye trauma, bilateral, moderate stage	Diagnosis	ICD-10-CM
H40.33X3	Glaucoma secondary to eye trauma, bilateral, severe stage	Diagnosis	ICD-10-CM
H40.33X4	Glaucoma secondary to eye trauma, bilateral, indeterminate stage	Diagnosis	ICD-10-CM
H40.40X0	Glaucoma secondary to eye inflammation, unspecified eye, stage unspecified	Diagnosis	ICD-10-CM
H40.40X1	Glaucoma secondary to eye inflammation, unspecified eye, mild stage	Diagnosis	ICD-10-CM
H40.40X2	Glaucoma secondary to eye inflammation, unspecified eye, moderate stage	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
H40.40X3	Glaucoma secondary to eye inflammation, unspecified eye, severe stage	Diagnosis	ICD-10-CM
H40.40X4	Glaucoma secondary to eye inflammation, unspecified eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.41X0	Glaucoma secondary to eye inflammation, right eye, stage unspecified	Diagnosis	ICD-10-CM
H40.41X1	Glaucoma secondary to eye inflammation, right eye, mild stage	Diagnosis	ICD-10-CM
H40.41X2	Glaucoma secondary to eye inflammation, right eye, moderate stage	Diagnosis	ICD-10-CM
H40.41X3	Glaucoma secondary to eye inflammation, right eye, severe stage	Diagnosis	ICD-10-CM
H40.41X4	Glaucoma secondary to eye inflammation, right eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.42X0	Glaucoma secondary to eye inflammation, left eye, stage unspecified	Diagnosis	ICD-10-CM
H40.42X1	Glaucoma secondary to eye inflammation, left eye, mild stage	Diagnosis	ICD-10-CM
H40.42X2	Glaucoma secondary to eye inflammation, left eye, moderate stage	Diagnosis	ICD-10-CM
H40.42X3	Glaucoma secondary to eye inflammation, left eye, severe stage	Diagnosis	ICD-10-CM
H40.42X4	Glaucoma secondary to eye inflammation, left eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.43X0	Glaucoma secondary to eye inflammation, bilateral, stage unspecified	Diagnosis	ICD-10-CM
H40.43X1	Glaucoma secondary to eye inflammation, bilateral, mild stage	Diagnosis	ICD-10-CM
H40.43X2	Glaucoma secondary to eye inflammation, bilateral, moderate stage	Diagnosis	ICD-10-CM
H40.43X3	Glaucoma secondary to eye inflammation, bilateral, severe stage	Diagnosis	ICD-10-CM
H40.43X4	Glaucoma secondary to eye inflammation, bilateral, indeterminate stage	Diagnosis	ICD-10-CM
H40.50X0	Glaucoma secondary to other eye disorders, unspecified eye, stage unspecified	Diagnosis	ICD-10-CM
H40.50X1	Glaucoma secondary to other eye disorders, unspecified eye, mild stage	Diagnosis	ICD-10-CM
H40.50X2	Glaucoma secondary to other eye disorders, unspecified eye, moderate stage	Diagnosis	ICD-10-CM
H40.50X3	Glaucoma secondary to other eye disorders, unspecified eye, severe stage	Diagnosis	ICD-10-CM
H40.50X4	Glaucoma secondary to other eye disorders, unspecified eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.51X0	Glaucoma secondary to other eye disorders, right eye, stage unspecified	Diagnosis	ICD-10-CM
H40.51X1	Glaucoma secondary to other eye disorders, right eye, mild stage	Diagnosis	ICD-10-CM
H40.51X2	Glaucoma secondary to other eye disorders, right eye, moderate stage	Diagnosis	ICD-10-CM
H40.51X3	Glaucoma secondary to other eye disorders, right eye, severe stage	Diagnosis	ICD-10-CM
H40.51X4	Glaucoma secondary to other eye disorders, right eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.52X0	Glaucoma secondary to other eye disorders, left eye, stage unspecified	Diagnosis	ICD-10-CM
H40.52X1	Glaucoma secondary to other eye disorders, left eye, mild stage	Diagnosis	ICD-10-CM
H40.52X2	Glaucoma secondary to other eye disorders, left eye, moderate stage	Diagnosis	ICD-10-CM
H40.52X3	Glaucoma secondary to other eye disorders, left eye, severe stage	Diagnosis	ICD-10-CM
H40.52X4	Glaucoma secondary to other eye disorders, left eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.53X0	Glaucoma secondary to other eye disorders, bilateral, stage unspecified	Diagnosis	ICD-10-CM
H40.53X1	Glaucoma secondary to other eye disorders, bilateral, mild stage	Diagnosis	ICD-10-CM
H40.53X2	Glaucoma secondary to other eye disorders, bilateral, moderate stage	Diagnosis	ICD-10-CM
H40.53X3	Glaucoma secondary to other eye disorders, bilateral, severe stage	Diagnosis	ICD-10-CM
H40.53X4	Glaucoma secondary to other eye disorders, bilateral, indeterminate stage	Diagnosis	ICD-10-CM
H40.60X0	Glaucoma secondary to drugs, unspecified eye, stage unspecified	Diagnosis	ICD-10-CM
H40.60X1	Glaucoma secondary to drugs, unspecified eye, mild stage	Diagnosis	ICD-10-CM
H40.60X2	Glaucoma secondary to drugs, unspecified eye, moderate stage	Diagnosis	ICD-10-CM
H40.60X3	Glaucoma secondary to drugs, unspecified eye, severe stage	Diagnosis	ICD-10-CM
H40.60X4	Glaucoma secondary to drugs, unspecified eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.61X0	Glaucoma secondary to drugs, right eye, stage unspecified	Diagnosis	ICD-10-CM
H40.61X1	Glaucoma secondary to drugs, right eye, mild stage	Diagnosis	ICD-10-CM
H40.61X2	Glaucoma secondary to drugs, right eye, moderate stage	Diagnosis	ICD-10-CM
H40.61X3	Glaucoma secondary to drugs, right eye, severe stage	Diagnosis	ICD-10-CM

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Code	Description	Code	Code Type
H40.61X4	Glaucoma secondary to drugs, right eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.62X0	Glaucoma secondary to drugs, left eye, stage unspecified	Diagnosis	ICD-10-CM
H40.62X1	Glaucoma secondary to drugs, left eye, mild stage	Diagnosis	ICD-10-CM
H40.62X2	Glaucoma secondary to drugs, left eye, moderate stage	Diagnosis	ICD-10-CM
H40.62X3	Glaucoma secondary to drugs, left eye, severe stage	Diagnosis	ICD-10-CM
H40.62X4	Glaucoma secondary to drugs, left eye, indeterminate stage	Diagnosis	ICD-10-CM
H40.63X0	Glaucoma secondary to drugs, bilateral, stage unspecified	Diagnosis	ICD-10-CM
H40.63X1	Glaucoma secondary to drugs, bilateral, mild stage	Diagnosis	ICD-10-CM
H40.63X2	Glaucoma secondary to drugs, bilateral, moderate stage	Diagnosis	ICD-10-CM
H40.63X3	Glaucoma secondary to drugs, bilateral, severe stage	Diagnosis	ICD-10-CM
H40.63X4	Glaucoma secondary to drugs, bilateral, indeterminate stage	Diagnosis	ICD-10-CM
H40.811	Glaucoma with increased episcleral venous pressure, right eye	Diagnosis	ICD-10-CM
H40.812	Glaucoma with increased episcleral venous pressure, left eye	Diagnosis	ICD-10-CM
H40.813	Glaucoma with increased episcleral venous pressure, bilateral	Diagnosis	ICD-10-CM
H40.819	Glaucoma with increased episcleral venous pressure, unspecified eye	Diagnosis	ICD-10-CM
H40.821	Hypersecretion glaucoma, right eye	Diagnosis	ICD-10-CM
H40.822	Hypersecretion glaucoma, left eye	Diagnosis	ICD-10-CM
H40.823	Hypersecretion glaucoma, bilateral	Diagnosis	ICD-10-CM
H40.829	Hypersecretion glaucoma, unspecified eye	Diagnosis	ICD-10-CM
H40.831	Aqueous misdirection, right eye	Diagnosis	ICD-10-CM
H40.832	Aqueous misdirection, left eye	Diagnosis	ICD-10-CM
H40.833	Aqueous misdirection, bilateral	Diagnosis	ICD-10-CM
H40.839	Aqueous misdirection, unspecified eye	Diagnosis	ICD-10-CM
H40.89	Other specified glaucoma	Diagnosis	ICD-10-CM
H40.9	Unspecified glaucoma	Diagnosis	ICD-10-CM
H42	Glaucoma in diseases classified elsewhere	Diagnosis	ICD-10-CM
H44.511	Absolute glaucoma, right eye	Diagnosis	ICD-10-CM
H44.512	Absolute glaucoma, left eye	Diagnosis	ICD-10-CM
H44.513	Absolute glaucoma, bilateral	Diagnosis	ICD-10-CM
H44.519	Absolute glaucoma, unspecified eye	Diagnosis	ICD-10-CM
H47.231	Glaucomatous optic atrophy, right eye	Diagnosis	ICD-10-CM
H47.232	Glaucomatous optic atrophy, left eye	Diagnosis	ICD-10-CM
H47.233	Glaucomatous optic atrophy, bilateral	Diagnosis	ICD-10-CM
H47.239	Glaucomatous optic atrophy, unspecified eye	Diagnosis	ICD-10-CM
Q15.0	Congenital glaucoma	Diagnosis	ICD-10-CM
Heart Failure			
I09.81	Rheumatic heart failure	Diagnosis	ICD-10-CM
I11.0	Hypertensive heart disease with heart failure	Diagnosis	ICD-10-CM
I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I42.0	Dilated cardiomyopathy	Diagnosis	ICD-10-CM
I42.5	Other restrictive cardiomyopathy	Diagnosis	ICD-10-CM
I42.6	Alcoholic cardiomyopathy	Diagnosis	ICD-10-CM
I42.7	Cardiomyopathy due to drug and external agent	Diagnosis	ICD-10-CM

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Code	Description	Code	Code Type
I42.8	Other cardiomyopathies	Diagnosis	ICD-10-CM
I43	Cardiomyopathy in diseases classified elsewhere	Diagnosis	ICD-10-CM
I50.1	Left ventricular failure, unspecified	Diagnosis	ICD-10-CM
I50.20	Unspecified systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.21	Acute systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.22	Chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.23	Acute on chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.30	Unspecified diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.31	Acute diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.32	Chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.33	Acute on chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.40	Unspecified combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.41	Acute combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.42	Chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.43	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.810	Right heart failure, unspecified	Diagnosis	ICD-10-CM
I50.811	Acute right heart failure	Diagnosis	ICD-10-CM
I50.812	Chronic right heart failure	Diagnosis	ICD-10-CM
I50.813	Acute on chronic right heart failure	Diagnosis	ICD-10-CM
I50.814	Right heart failure due to left heart failure	Diagnosis	ICD-10-CM
I50.82	Biventricular heart failure	Diagnosis	ICD-10-CM
I50.83	High output heart failure	Diagnosis	ICD-10-CM
I50.84	End stage heart failure	Diagnosis	ICD-10-CM
I50.89	Other heart failure	Diagnosis	ICD-10-CM
I50.9	Heart failure, unspecified	Diagnosis	ICD-10-CM
P29.0	Neonatal cardiac failure	Diagnosis	ICD-10-CM
Hip/Pelvic Fracture			
M80.051A	Age-related osteoporosis with current pathological fracture, right femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.052A	Age-related osteoporosis with current pathological fracture, left femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.059A	Age-related osteoporosis with current pathological fracture, unspecified femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.851A	Other osteoporosis with current pathological fracture, right femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.852A	Other osteoporosis with current pathological fracture, left femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.859A	Other osteoporosis with current pathological fracture, unspecified femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.350A	Stress fracture, pelvis, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.351A	Stress fracture, right femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.352A	Stress fracture, left femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.353A	Stress fracture, unspecified femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.359A	Stress fracture, hip, unspecified, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.451A	Pathological fracture, right femur, initial encounter for fracture	Diagnosis	ICD-10-CM

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Code	Description	Code	Code Type
M84.452A	Pathological fracture, left femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.453A	Pathological fracture, unspecified femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.459A	Pathological fracture, hip, unspecified, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.550A	Pathological fracture in neoplastic disease, pelvis, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.551A	Pathological fracture in neoplastic disease, right femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.552A	Pathological fracture in neoplastic disease, left femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.553A	Pathological fracture in neoplastic disease, unspecified femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.559A	Pathological fracture in neoplastic disease, hip, unspecified, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.650A	Pathological fracture in other disease, pelvis, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.651A	Pathological fracture in other disease, right femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.652A	Pathological fracture in other disease, left femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.653A	Pathological fracture in other disease, unspecified femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M84.659A	Pathological fracture in other disease, hip, unspecified, initial encounter for fracture	Diagnosis	ICD-10-CM
M97.01XA	Periprosthetic fracture around internal prosthetic right hip joint, initial encounter	Diagnosis	ICD-10-CM
M97.02XA	Periprosthetic fracture around internal prosthetic left hip joint, initial encounter	Diagnosis	ICD-10-CM
S32.301A	Unspecified fracture of right ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.301B	Unspecified fracture of right ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.302A	Unspecified fracture of left ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.302B	Unspecified fracture of left ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.309A	Unspecified fracture of unspecified ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.309B	Unspecified fracture of unspecified ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.311A	Displaced avulsion fracture of right ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.311B	Displaced avulsion fracture of right ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.312A	Displaced avulsion fracture of left ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.312B	Displaced avulsion fracture of left ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.313A	Displaced avulsion fracture of unspecified ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.313B	Displaced avulsion fracture of unspecified ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.314A	Nondisplaced avulsion fracture of right ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.314B	Nondisplaced avulsion fracture of right ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.315A	Nondisplaced avulsion fracture of left ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.315B	Nondisplaced avulsion fracture of left ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.316A	Nondisplaced avulsion fracture of unspecified ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.316B	Nondisplaced avulsion fracture of unspecified ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.391A	Other fracture of right ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.391B	Other fracture of right ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.392A	Other fracture of left ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.392B	Other fracture of left ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.399A	Other fracture of unspecified ilium, initial encounter for closed fracture	Diagnosis	ICD-10-CM

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Code	Description	Code	Code Type
S32.399B	Other fracture of unspecified ilium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.401A	Unspecified fracture of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.401B	Unspecified fracture of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.402A	Unspecified fracture of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.402B	Unspecified fracture of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.409A	Unspecified fracture of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.409B	Unspecified fracture of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.411A	Displaced fracture of anterior wall of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.411B	Displaced fracture of anterior wall of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.412A	Displaced fracture of anterior wall of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.412B	Displaced fracture of anterior wall of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.413A	Displaced fracture of anterior wall of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.413B	Displaced fracture of anterior wall of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.414A	Nondisplaced fracture of anterior wall of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.414B	Nondisplaced fracture of anterior wall of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.415A	Nondisplaced fracture of anterior wall of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.415B	Nondisplaced fracture of anterior wall of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.416A	Nondisplaced fracture of anterior wall of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.416B	Nondisplaced fracture of anterior wall of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.421A	Displaced fracture of posterior wall of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.421B	Displaced fracture of posterior wall of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.422A	Displaced fracture of posterior wall of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.422B	Displaced fracture of posterior wall of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.423A	Displaced fracture of posterior wall of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.423B	Displaced fracture of posterior wall of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.424A	Nondisplaced fracture of posterior wall of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM

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Code	Description	Code	Code Type
S32.424B	Nondisplaced fracture of posterior wall of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.425A	Nondisplaced fracture of posterior wall of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.425B	Nondisplaced fracture of posterior wall of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.426A	Nondisplaced fracture of posterior wall of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.426B	Nondisplaced fracture of posterior wall of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.431A	Displaced fracture of anterior column [iliopubic] of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.431B	Displaced fracture of anterior column [iliopubic] of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.432A	Displaced fracture of anterior column [iliopubic] of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.432B	Displaced fracture of anterior column [iliopubic] of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.433A	Displaced fracture of anterior column [iliopubic] of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.433B	Displaced fracture of anterior column [iliopubic] of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.434A	Nondisplaced fracture of anterior column [iliopubic] of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.434B	Nondisplaced fracture of anterior column [iliopubic] of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.435A	Nondisplaced fracture of anterior column [iliopubic] of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.435B	Nondisplaced fracture of anterior column [iliopubic] of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.436A	Nondisplaced fracture of anterior column [iliopubic] of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.436B	Nondisplaced fracture of anterior column [iliopubic] of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.441A	Displaced fracture of posterior column [ilioischial] of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.441B	Displaced fracture of posterior column [ilioischial] of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.442A	Displaced fracture of posterior column [ilioischial] of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.442B	Displaced fracture of posterior column [ilioischial] of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.443A	Displaced fracture of posterior column [ilioischial] of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.443B	Displaced fracture of posterior column [ilioischial] of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM

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Code	Description	Code	Code Type
S32.444A	Nondisplaced fracture of posterior column [ilioischial] of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.444B	Nondisplaced fracture of posterior column [ilioischial] of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.445A	Nondisplaced fracture of posterior column [ilioischial] of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.445B	Nondisplaced fracture of posterior column [ilioischial] of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.446A	Nondisplaced fracture of posterior column [ilioischial] of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.446B	Nondisplaced fracture of posterior column [ilioischial] of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.451A	Displaced transverse fracture of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.451B	Displaced transverse fracture of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.452A	Displaced transverse fracture of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.452B	Displaced transverse fracture of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.453A	Displaced transverse fracture of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.453B	Displaced transverse fracture of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.454A	Nondisplaced transverse fracture of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.454B	Nondisplaced transverse fracture of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.455A	Nondisplaced transverse fracture of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.455B	Nondisplaced transverse fracture of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.456A	Nondisplaced transverse fracture of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.456B	Nondisplaced transverse fracture of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.461A	Displaced associated transverse-posterior fracture of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.461B	Displaced associated transverse-posterior fracture of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.462A	Displaced associated transverse-posterior fracture of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.462B	Displaced associated transverse-posterior fracture of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.463A	Displaced associated transverse-posterior fracture of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM

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Code	Description	Code	Code Type
S32.463B	Displaced associated transverse-posterior fracture of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.464A	Nondisplaced associated transverse-posterior fracture of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.464B	Nondisplaced associated transverse-posterior fracture of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.465A	Nondisplaced associated transverse-posterior fracture of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.465B	Nondisplaced associated transverse-posterior fracture of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.466A	Nondisplaced associated transverse-posterior fracture of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.466B	Nondisplaced associated transverse-posterior fracture of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.471A	Displaced fracture of medial wall of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.471B	Displaced fracture of medial wall of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.472A	Displaced fracture of medial wall of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.472B	Displaced fracture of medial wall of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.473A	Displaced fracture of medial wall of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.473B	Displaced fracture of medial wall of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.474A	Nondisplaced fracture of medial wall of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.474B	Nondisplaced fracture of medial wall of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.475A	Nondisplaced fracture of medial wall of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.475B	Nondisplaced fracture of medial wall of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.476A	Nondisplaced fracture of medial wall of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.476B	Nondisplaced fracture of medial wall of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.481A	Displaced dome fracture of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.481B	Displaced dome fracture of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.482A	Displaced dome fracture of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.482B	Displaced dome fracture of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.483A	Displaced dome fracture of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.483B	Displaced dome fracture of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
S32.484A	Nondisplaced dome fracture of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.484B	Nondisplaced dome fracture of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.485A	Nondisplaced dome fracture of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.485B	Nondisplaced dome fracture of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.486A	Nondisplaced dome fracture of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.486B	Nondisplaced dome fracture of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.491A	Other specified fracture of right acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.491B	Other specified fracture of right acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.492A	Other specified fracture of left acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.492B	Other specified fracture of left acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.499A	Other specified fracture of unspecified acetabulum, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.499B	Other specified fracture of unspecified acetabulum, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.501A	Unspecified fracture of right pubis, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.501B	Unspecified fracture of right pubis, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.502A	Unspecified fracture of left pubis, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.502B	Unspecified fracture of left pubis, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.509A	Unspecified fracture of unspecified pubis, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.509B	Unspecified fracture of unspecified pubis, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.511A	Fracture of superior rim of right pubis, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.511B	Fracture of superior rim of right pubis, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.512A	Fracture of superior rim of left pubis, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.512B	Fracture of superior rim of left pubis, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.519A	Fracture of superior rim of unspecified pubis, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.519B	Fracture of superior rim of unspecified pubis, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.591A	Other specified fracture of right pubis, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.591B	Other specified fracture of right pubis, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.592A	Other specified fracture of left pubis, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.592B	Other specified fracture of left pubis, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.599A	Other specified fracture of unspecified pubis, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.599B	Other specified fracture of unspecified pubis, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.601A	Unspecified fracture of right ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.601B	Unspecified fracture of right ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.602A	Unspecified fracture of left ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.602B	Unspecified fracture of left ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.609A	Unspecified fracture of unspecified ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.609B	Unspecified fracture of unspecified ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.611A	Displaced avulsion fracture of right ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.611B	Displaced avulsion fracture of right ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.612A	Displaced avulsion fracture of left ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.612B	Displaced avulsion fracture of left ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
S32.613A	Displaced avulsion fracture of unspecified ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.613B	Displaced avulsion fracture of unspecified ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.614A	Nondisplaced avulsion fracture of right ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.614B	Nondisplaced avulsion fracture of right ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.615A	Nondisplaced avulsion fracture of left ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.615B	Nondisplaced avulsion fracture of left ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.616A	Nondisplaced avulsion fracture of unspecified ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.616B	Nondisplaced avulsion fracture of unspecified ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.691A	Other specified fracture of right ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.691B	Other specified fracture of right ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.692A	Other specified fracture of left ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.692B	Other specified fracture of left ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.699A	Other specified fracture of unspecified ischium, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.699B	Other specified fracture of unspecified ischium, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.810A	Multiple fractures of pelvis with stable disruption of pelvic ring, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.810B	Multiple fractures of pelvis with stable disruption of pelvic ring, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.811A	Multiple fractures of pelvis with unstable disruption of pelvic ring, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.811B	Multiple fractures of pelvis with unstable disruption of pelvic ring, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.82XA	Multiple fractures of pelvis without disruption of pelvic ring, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.82XB	Multiple fractures of pelvis without disruption of pelvic ring, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.89XA	Fracture of other parts of pelvis, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.89XB	Fracture of other parts of pelvis, initial encounter for open fracture	Diagnosis	ICD-10-CM
S32.9XXA	Fracture of unspecified parts of lumbosacral spine and pelvis, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S32.9XXB	Fracture of unspecified parts of lumbosacral spine and pelvis, initial encounter for open fracture	Diagnosis	ICD-10-CM
S72.001A	Fracture of unspecified part of neck of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.001B	Fracture of unspecified part of neck of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.001C	Fracture of unspecified part of neck of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.002A	Fracture of unspecified part of neck of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
S72.002B	Fracture of unspecified part of neck of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.002C	Fracture of unspecified part of neck of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.009A	Fracture of unspecified part of neck of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.009B	Fracture of unspecified part of neck of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.009C	Fracture of unspecified part of neck of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.011A	Unspecified intracapsular fracture of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.011B	Unspecified intracapsular fracture of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.011C	Unspecified intracapsular fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.012A	Unspecified intracapsular fracture of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.012B	Unspecified intracapsular fracture of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.012C	Unspecified intracapsular fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.019A	Unspecified intracapsular fracture of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.019B	Unspecified intracapsular fracture of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.019C	Unspecified intracapsular fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.021A	Displaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.021B	Displaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.021C	Displaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.022A	Displaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.022B	Displaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.022C	Displaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.023A	Displaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.023B	Displaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.023C	Displaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
S72.024A	Nondisplaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.024B	Nondisplaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.024C	Nondisplaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.025A	Nondisplaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.025B	Nondisplaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.025C	Nondisplaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.026A	Nondisplaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.026B	Nondisplaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.026C	Nondisplaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.031A	Displaced midcervical fracture of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.031B	Displaced midcervical fracture of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.031C	Displaced midcervical fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.032A	Displaced midcervical fracture of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.032B	Displaced midcervical fracture of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.032C	Displaced midcervical fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.033A	Displaced midcervical fracture of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.033B	Displaced midcervical fracture of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.033C	Displaced midcervical fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.034A	Nondisplaced midcervical fracture of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.034B	Nondisplaced midcervical fracture of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.034C	Nondisplaced midcervical fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.035A	Nondisplaced midcervical fracture of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.035B	Nondisplaced midcervical fracture of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.035C	Nondisplaced midcervical fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
S72.036A	Nondisplaced midcervical fracture of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.036B	Nondisplaced midcervical fracture of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.036C	Nondisplaced midcervical fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.041A	Displaced fracture of base of neck of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.041B	Displaced fracture of base of neck of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.041C	Displaced fracture of base of neck of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.042A	Displaced fracture of base of neck of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.042B	Displaced fracture of base of neck of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.042C	Displaced fracture of base of neck of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.043A	Displaced fracture of base of neck of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.043B	Displaced fracture of base of neck of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.043C	Displaced fracture of base of neck of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.044A	Nondisplaced fracture of base of neck of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.044B	Nondisplaced fracture of base of neck of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.044C	Nondisplaced fracture of base of neck of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.045A	Nondisplaced fracture of base of neck of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.045B	Nondisplaced fracture of base of neck of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.045C	Nondisplaced fracture of base of neck of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.046A	Nondisplaced fracture of base of neck of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.046B	Nondisplaced fracture of base of neck of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.046C	Nondisplaced fracture of base of neck of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.051A	Unspecified fracture of head of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.051B	Unspecified fracture of head of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.051C	Unspecified fracture of head of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
S72.052A	Unspecified fracture of head of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.052B	Unspecified fracture of head of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.052C	Unspecified fracture of head of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.059A	Unspecified fracture of head of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.059B	Unspecified fracture of head of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.059C	Unspecified fracture of head of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.061A	Displaced articular fracture of head of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.061B	Displaced articular fracture of head of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.061C	Displaced articular fracture of head of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.062A	Displaced articular fracture of head of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.062B	Displaced articular fracture of head of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.062C	Displaced articular fracture of head of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.063A	Displaced articular fracture of head of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.063B	Displaced articular fracture of head of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.063C	Displaced articular fracture of head of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.064A	Nondisplaced articular fracture of head of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.064B	Nondisplaced articular fracture of head of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.064C	Nondisplaced articular fracture of head of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.065A	Nondisplaced articular fracture of head of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.065B	Nondisplaced articular fracture of head of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.065C	Nondisplaced articular fracture of head of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.066A	Nondisplaced articular fracture of head of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.066B	Nondisplaced articular fracture of head of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
S72.066C	Nondisplaced articular fracture of head of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.091A	Other fracture of head and neck of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.091B	Other fracture of head and neck of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.091C	Other fracture of head and neck of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.092A	Other fracture of head and neck of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.092B	Other fracture of head and neck of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.092C	Other fracture of head and neck of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.099A	Other fracture of head and neck of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.099B	Other fracture of head and neck of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.099C	Other fracture of head and neck of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.101A	Unspecified trochanteric fracture of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.101B	Unspecified trochanteric fracture of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.101C	Unspecified trochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.102A	Unspecified trochanteric fracture of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.102B	Unspecified trochanteric fracture of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.102C	Unspecified trochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.109A	Unspecified trochanteric fracture of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.109B	Unspecified trochanteric fracture of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.109C	Unspecified trochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.111A	Displaced fracture of greater trochanter of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.111B	Displaced fracture of greater trochanter of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.111C	Displaced fracture of greater trochanter of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.112A	Displaced fracture of greater trochanter of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.112B	Displaced fracture of greater trochanter of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.112C	Displaced fracture of greater trochanter of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
S72.113A	Displaced fracture of greater trochanter of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.113B	Displaced fracture of greater trochanter of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.113C	Displaced fracture of greater trochanter of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.114A	Nondisplaced fracture of greater trochanter of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.114B	Nondisplaced fracture of greater trochanter of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.114C	Nondisplaced fracture of greater trochanter of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.115A	Nondisplaced fracture of greater trochanter of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.115B	Nondisplaced fracture of greater trochanter of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.115C	Nondisplaced fracture of greater trochanter of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.116A	Nondisplaced fracture of greater trochanter of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.116B	Nondisplaced fracture of greater trochanter of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.116C	Nondisplaced fracture of greater trochanter of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.121A	Displaced fracture of lesser trochanter of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.121B	Displaced fracture of lesser trochanter of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.121C	Displaced fracture of lesser trochanter of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.122A	Displaced fracture of lesser trochanter of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.122B	Displaced fracture of lesser trochanter of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.122C	Displaced fracture of lesser trochanter of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.123A	Displaced fracture of lesser trochanter of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.123B	Displaced fracture of lesser trochanter of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.123C	Displaced fracture of lesser trochanter of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.124A	Nondisplaced fracture of lesser trochanter of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.124B	Nondisplaced fracture of lesser trochanter of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
S72.124C	Nondisplaced fracture of lesser trochanter of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.125A	Nondisplaced fracture of lesser trochanter of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.125B	Nondisplaced fracture of lesser trochanter of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.125C	Nondisplaced fracture of lesser trochanter of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.126A	Nondisplaced fracture of lesser trochanter of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.126B	Nondisplaced fracture of lesser trochanter of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.126C	Nondisplaced fracture of lesser trochanter of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.131A	Displaced apophyseal fracture of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.131B	Displaced apophyseal fracture of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.131C	Displaced apophyseal fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.132A	Displaced apophyseal fracture of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.132B	Displaced apophyseal fracture of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.132C	Displaced apophyseal fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.133A	Displaced apophyseal fracture of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.133B	Displaced apophyseal fracture of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.133C	Displaced apophyseal fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.134A	Nondisplaced apophyseal fracture of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.134B	Nondisplaced apophyseal fracture of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.134C	Nondisplaced apophyseal fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.135A	Nondisplaced apophyseal fracture of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.135B	Nondisplaced apophyseal fracture of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.135C	Nondisplaced apophyseal fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.136A	Nondisplaced apophyseal fracture of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.136B	Nondisplaced apophyseal fracture of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
S72.136C	Nondisplaced apophyseal fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.141A	Displaced intertrochanteric fracture of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.141B	Displaced intertrochanteric fracture of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.141C	Displaced intertrochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.142A	Displaced intertrochanteric fracture of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.142B	Displaced intertrochanteric fracture of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.142C	Displaced intertrochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.143A	Displaced intertrochanteric fracture of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.143B	Displaced intertrochanteric fracture of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.143C	Displaced intertrochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.144A	Nondisplaced intertrochanteric fracture of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.144B	Nondisplaced intertrochanteric fracture of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.144C	Nondisplaced intertrochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.145A	Nondisplaced intertrochanteric fracture of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.145B	Nondisplaced intertrochanteric fracture of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.145C	Nondisplaced intertrochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.146A	Nondisplaced intertrochanteric fracture of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.146B	Nondisplaced intertrochanteric fracture of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.146C	Nondisplaced intertrochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.21XA	Displaced subtrochanteric fracture of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.21XB	Displaced subtrochanteric fracture of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.21XC	Displaced subtrochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.22XA	Displaced subtrochanteric fracture of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
S72.22XB	Displaced subtrochanteric fracture of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.22XC	Displaced subtrochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.23XA	Displaced subtrochanteric fracture of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.23XB	Displaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.23XC	Displaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.24XA	Nondisplaced subtrochanteric fracture of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.24XB	Nondisplaced subtrochanteric fracture of right femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.24XC	Nondisplaced subtrochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.25XA	Nondisplaced subtrochanteric fracture of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.25XB	Nondisplaced subtrochanteric fracture of left femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.25XC	Nondisplaced subtrochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S72.26XA	Nondisplaced subtrochanteric fracture of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S72.26XB	Nondisplaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type I or II	Diagnosis	ICD-10-CM
S72.26XC	Nondisplaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC	Diagnosis	ICD-10-CM
S79.001A	Unspecified physeal fracture of upper end of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S79.002A	Unspecified physeal fracture of upper end of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S79.009A	Unspecified physeal fracture of upper end of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S79.011A	Salter-Harris Type I physeal fracture of upper end of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S79.012A	Salter-Harris Type I physeal fracture of upper end of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S79.019A	Salter-Harris Type I physeal fracture of upper end of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S79.091A	Other physeal fracture of upper end of right femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S79.092A	Other physeal fracture of upper end of left femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM
S79.099A	Other physeal fracture of upper end of unspecified femur, initial encounter for closed fracture	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
Hyperlipidemia			
E78.0	Pure hypercholesterolemia	Diagnosis	ICD-10-CM
E78.00	Pure hypercholesterolemia, unspecified	Diagnosis	ICD-10-CM
E78.01	Familial hypercholesterolemia	Diagnosis	ICD-10-CM
E78.1	Pure hyperglyceridemia	Diagnosis	ICD-10-CM
E78.2	Mixed hyperlipidemia	Diagnosis	ICD-10-CM
E78.3	Hyperchylomicronemia	Diagnosis	ICD-10-CM
E78.4	Other hyperlipidemia	Diagnosis	ICD-10-CM
E78.41	Elevated Lipoprotein(a)	Diagnosis	ICD-10-CM
E78.49	Other hyperlipidemia	Diagnosis	ICD-10-CM
E78.5	Hyperlipidemia, unspecified	Diagnosis	ICD-10-CM
Hypertension			
H35.031	Hypertensive retinopathy, right eye	Diagnosis	ICD-10-CM
H35.032	Hypertensive retinopathy, left eye	Diagnosis	ICD-10-CM
H35.033	Hypertensive retinopathy, bilateral	Diagnosis	ICD-10-CM
H35.039	Hypertensive retinopathy, unspecified eye	Diagnosis	ICD-10-CM
I10	Essential (primary) hypertension	Diagnosis	ICD-10-CM
I11.0	Hypertensive heart disease with heart failure	Diagnosis	ICD-10-CM
I11.9	Hypertensive heart disease without heart failure	Diagnosis	ICD-10-CM
I12.0	Hypertensive chronic kidney disease with stage 5 chronic kidney disease or end stage renal disease	Diagnosis	ICD-10-CM
I12.9	Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.10	Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.11	Hypertensive heart and chronic kidney disease without heart failure, with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I15.0	Renovascular hypertension	Diagnosis	ICD-10-CM
I15.1	Hypertension secondary to other renal disorders	Diagnosis	ICD-10-CM
I15.2	Hypertension secondary to endocrine disorders	Diagnosis	ICD-10-CM
I15.8	Other secondary hypertension	Diagnosis	ICD-10-CM
I15.9	Secondary hypertension, unspecified	Diagnosis	ICD-10-CM
I67.4	Hypertensive encephalopathy	Diagnosis	ICD-10-CM
N26.2	Page kidney	Diagnosis	ICD-10-CM
Ischemic Heart Disease			
I20.0	Unstable angina	Diagnosis	ICD-10-CM
I20.1	Angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I20.8	Other forms of angina pectoris	Diagnosis	ICD-10-CM
I20.9	Angina pectoris, unspecified	Diagnosis	ICD-10-CM
I21.01	ST elevation (STEMI) myocardial infarction involving left main coronary artery	Diagnosis	ICD-10-CM
I21.02	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
I21.09	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall	Diagnosis	ICD-10-CM
I21.11	ST elevation (STEMI) myocardial infarction involving right coronary artery	Diagnosis	ICD-10-CM
I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall	Diagnosis	ICD-10-CM
I21.21	ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery	Diagnosis	ICD-10-CM
I21.29	ST elevation (STEMI) myocardial infarction involving other sites	Diagnosis	ICD-10-CM
I21.3	ST elevation (STEMI) myocardial infarction of unspecified site	Diagnosis	ICD-10-CM
I21.4	Non-ST elevation (NSTEMI) myocardial infarction	Diagnosis	ICD-10-CM
I22.0	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall	Diagnosis	ICD-10-CM
I22.1	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall	Diagnosis	ICD-10-CM
I22.2	Subsequent non-ST elevation (NSTEMI) myocardial infarction	Diagnosis	ICD-10-CM
I22.8	Subsequent ST elevation (STEMI) myocardial infarction of other sites	Diagnosis	ICD-10-CM
I22.9	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site	Diagnosis	ICD-10-CM
I24.0	Acute coronary thrombosis not resulting in myocardial infarction	Diagnosis	ICD-10-CM
I24.1	Dressler's syndrome	Diagnosis	ICD-10-CM
I24.8	Other forms of acute ischemic heart disease	Diagnosis	ICD-10-CM
I24.9	Acute ischemic heart disease, unspecified	Diagnosis	ICD-10-CM
I25.10	Atherosclerotic heart disease of native coronary artery without angina pectoris	Diagnosis	ICD-10-CM
I25.110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.2	Old myocardial infarction	Diagnosis	ICD-10-CM
I25.3	Aneurysm of heart	Diagnosis	ICD-10-CM
I25.41	Coronary artery aneurysm	Diagnosis	ICD-10-CM
I25.42	Coronary artery dissection	Diagnosis	ICD-10-CM
I25.5	Ischemic cardiomyopathy	Diagnosis	ICD-10-CM
I25.6	Silent myocardial ischemia	Diagnosis	ICD-10-CM
I25.700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
I25.718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina	Diagnosis	ICD-10-CM
I25.751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina	Diagnosis	ICD-10-CM
I25.761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris	Diagnosis	ICD-10-CM
I25.811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
I25.812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris	Diagnosis	ICD-10-CM
I25.82	Chronic total occlusion of coronary artery	Diagnosis	ICD-10-CM
I25.83	Coronary atherosclerosis due to lipid rich plaque	Diagnosis	ICD-10-CM
I25.84	Coronary atherosclerosis due to calcified coronary lesion	Diagnosis	ICD-10-CM
I25.89	Other forms of chronic ischemic heart disease	Diagnosis	ICD-10-CM
I25.9	Chronic ischemic heart disease, unspecified	Diagnosis	ICD-10-CM
Osteoporosis			
M80.00XA	Age-related osteoporosis with current pathological fracture, unspecified site, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.011A	Age-related osteoporosis with current pathological fracture, right shoulder, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.012A	Age-related osteoporosis with current pathological fracture, left shoulder, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.019A	Age-related osteoporosis with current pathological fracture, unspecified shoulder, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.021A	Age-related osteoporosis with current pathological fracture, right humerus, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.022A	Age-related osteoporosis with current pathological fracture, left humerus, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.029A	Age-related osteoporosis with current pathological fracture, unspecified humerus, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.031A	Age-related osteoporosis with current pathological fracture, right forearm, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.032A	Age-related osteoporosis with current pathological fracture, left forearm, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.039A	Age-related osteoporosis with current pathological fracture, unspecified forearm, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.041A	Age-related osteoporosis with current pathological fracture, right hand, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.042A	Age-related osteoporosis with current pathological fracture, left hand, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.049A	Age-related osteoporosis with current pathological fracture, unspecified hand, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.051A	Age-related osteoporosis with current pathological fracture, right femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.052A	Age-related osteoporosis with current pathological fracture, left femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.059A	Age-related osteoporosis with current pathological fracture, unspecified femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.061A	Age-related osteoporosis with current pathological fracture, right lower leg, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.062A	Age-related osteoporosis with current pathological fracture, left lower leg, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.069A	Age-related osteoporosis with current pathological fracture, unspecified lower leg, initial encounter for fracture	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M80.071A	Age-related osteoporosis with current pathological fracture, right ankle and foot, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.072A	Age-related osteoporosis with current pathological fracture, left ankle and foot, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.079A	Age-related osteoporosis with current pathological fracture, unspecified ankle and foot, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.08XA	Age-related osteoporosis with current pathological fracture, vertebra(e), initial encounter for fracture	Diagnosis	ICD-10-CM
M80.0AXA	Age-related osteoporosis with current pathological fracture, other site, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.80XA	Other osteoporosis with current pathological fracture, unspecified site, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.811A	Other osteoporosis with current pathological fracture, right shoulder, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.812A	Other osteoporosis with current pathological fracture, left shoulder, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.819A	Other osteoporosis with current pathological fracture, unspecified shoulder, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.821A	Other osteoporosis with current pathological fracture, right humerus, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.822A	Other osteoporosis with current pathological fracture, left humerus, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.829A	Other osteoporosis with current pathological fracture, unspecified humerus, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.831A	Other osteoporosis with current pathological fracture, right forearm, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.832A	Other osteoporosis with current pathological fracture, left forearm, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.839A	Other osteoporosis with current pathological fracture, unspecified forearm, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.841A	Other osteoporosis with current pathological fracture, right hand, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.842A	Other osteoporosis with current pathological fracture, left hand, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.849A	Other osteoporosis with current pathological fracture, unspecified hand, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.851A	Other osteoporosis with current pathological fracture, right femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.852A	Other osteoporosis with current pathological fracture, left femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.859A	Other osteoporosis with current pathological fracture, unspecified femur, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.861A	Other osteoporosis with current pathological fracture, right lower leg, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.862A	Other osteoporosis with current pathological fracture, left lower leg, initial encounter for fracture	Diagnosis	ICD-10-CM

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Code	Description	Code	Code Type
M80.869A	Other osteoporosis with current pathological fracture, unspecified lower leg, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.871A	Other osteoporosis with current pathological fracture, right ankle and foot, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.872A	Other osteoporosis with current pathological fracture, left ankle and foot, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.879A	Other osteoporosis with current pathological fracture, unspecified ankle and foot, initial encounter for fracture	Diagnosis	ICD-10-CM
M80.88XA	Other osteoporosis with current pathological fracture, vertebra(e), initial encounter for fracture	Diagnosis	ICD-10-CM
M80.8AXA	Other osteoporosis with current pathological fracture, other site, initial encounter for fracture	Diagnosis	ICD-10-CM
M81.0	Age-related osteoporosis without current pathological fracture	Diagnosis	ICD-10-CM
M81.6	Localized osteoporosis [Lequesne]	Diagnosis	ICD-10-CM
M81.8	Other osteoporosis without current pathological fracture	Diagnosis	ICD-10-CM
Rheumatoid Arthritis/Osteoarthritis			
L40.50	Arthropathic psoriasis, unspecified	Diagnosis	ICD-10-CM
L40.51	Distal interphalangeal psoriatic arthropathy	Diagnosis	ICD-10-CM
L40.54	Psoriatic juvenile arthropathy	Diagnosis	ICD-10-CM
L40.59	Other psoriatic arthropathy	Diagnosis	ICD-10-CM
M05.00	Felty's syndrome, unspecified site	Diagnosis	ICD-10-CM
M05.011	Felty's syndrome, right shoulder	Diagnosis	ICD-10-CM
M05.012	Felty's syndrome, left shoulder	Diagnosis	ICD-10-CM
M05.019	Felty's syndrome, unspecified shoulder	Diagnosis	ICD-10-CM
M05.021	Felty's syndrome, right elbow	Diagnosis	ICD-10-CM
M05.022	Felty's syndrome, left elbow	Diagnosis	ICD-10-CM
M05.029	Felty's syndrome, unspecified elbow	Diagnosis	ICD-10-CM
M05.031	Felty's syndrome, right wrist	Diagnosis	ICD-10-CM
M05.032	Felty's syndrome, left wrist	Diagnosis	ICD-10-CM
M05.039	Felty's syndrome, unspecified wrist	Diagnosis	ICD-10-CM
M05.041	Felty's syndrome, right hand	Diagnosis	ICD-10-CM
M05.042	Felty's syndrome, left hand	Diagnosis	ICD-10-CM
M05.049	Felty's syndrome, unspecified hand	Diagnosis	ICD-10-CM
M05.051	Felty's syndrome, right hip	Diagnosis	ICD-10-CM
M05.052	Felty's syndrome, left hip	Diagnosis	ICD-10-CM
M05.059	Felty's syndrome, unspecified hip	Diagnosis	ICD-10-CM
M05.061	Felty's syndrome, right knee	Diagnosis	ICD-10-CM
M05.062	Felty's syndrome, left knee	Diagnosis	ICD-10-CM
M05.069	Felty's syndrome, unspecified knee	Diagnosis	ICD-10-CM
M05.071	Felty's syndrome, right ankle and foot	Diagnosis	ICD-10-CM
M05.072	Felty's syndrome, left ankle and foot	Diagnosis	ICD-10-CM
M05.079	Felty's syndrome, unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.09	Felty's syndrome, multiple sites	Diagnosis	ICD-10-CM
M05.10	Rheumatoid lung disease with rheumatoid arthritis of unspecified site	Diagnosis	ICD-10-CM
M05.111	Rheumatoid lung disease with rheumatoid arthritis of right shoulder	Diagnosis	ICD-10-CM
M05.112	Rheumatoid lung disease with rheumatoid arthritis of left shoulder	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M05.119	Rheumatoid lung disease with rheumatoid arthritis of unspecified shoulder	Diagnosis	ICD-10-CM
M05.121	Rheumatoid lung disease with rheumatoid arthritis of right elbow	Diagnosis	ICD-10-CM
M05.122	Rheumatoid lung disease with rheumatoid arthritis of left elbow	Diagnosis	ICD-10-CM
M05.129	Rheumatoid lung disease with rheumatoid arthritis of unspecified elbow	Diagnosis	ICD-10-CM
M05.131	Rheumatoid lung disease with rheumatoid arthritis of right wrist	Diagnosis	ICD-10-CM
M05.132	Rheumatoid lung disease with rheumatoid arthritis of left wrist	Diagnosis	ICD-10-CM
M05.139	Rheumatoid lung disease with rheumatoid arthritis of unspecified wrist	Diagnosis	ICD-10-CM
M05.141	Rheumatoid lung disease with rheumatoid arthritis of right hand	Diagnosis	ICD-10-CM
M05.142	Rheumatoid lung disease with rheumatoid arthritis of left hand	Diagnosis	ICD-10-CM
M05.149	Rheumatoid lung disease with rheumatoid arthritis of unspecified hand	Diagnosis	ICD-10-CM
M05.151	Rheumatoid lung disease with rheumatoid arthritis of right hip	Diagnosis	ICD-10-CM
M05.152	Rheumatoid lung disease with rheumatoid arthritis of left hip	Diagnosis	ICD-10-CM
M05.159	Rheumatoid lung disease with rheumatoid arthritis of unspecified hip	Diagnosis	ICD-10-CM
M05.161	Rheumatoid lung disease with rheumatoid arthritis of right knee	Diagnosis	ICD-10-CM
M05.162	Rheumatoid lung disease with rheumatoid arthritis of left knee	Diagnosis	ICD-10-CM
M05.169	Rheumatoid lung disease with rheumatoid arthritis of unspecified knee	Diagnosis	ICD-10-CM
M05.171	Rheumatoid lung disease with rheumatoid arthritis of right ankle and foot	Diagnosis	ICD-10-CM
M05.172	Rheumatoid lung disease with rheumatoid arthritis of left ankle and foot	Diagnosis	ICD-10-CM
M05.179	Rheumatoid lung disease with rheumatoid arthritis of unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.19	Rheumatoid lung disease with rheumatoid arthritis of multiple sites	Diagnosis	ICD-10-CM
M05.20	Rheumatoid vasculitis with rheumatoid arthritis of unspecified site	Diagnosis	ICD-10-CM
M05.211	Rheumatoid vasculitis with rheumatoid arthritis of right shoulder	Diagnosis	ICD-10-CM
M05.212	Rheumatoid vasculitis with rheumatoid arthritis of left shoulder	Diagnosis	ICD-10-CM
M05.219	Rheumatoid vasculitis with rheumatoid arthritis of unspecified shoulder	Diagnosis	ICD-10-CM
M05.221	Rheumatoid vasculitis with rheumatoid arthritis of right elbow	Diagnosis	ICD-10-CM
M05.222	Rheumatoid vasculitis with rheumatoid arthritis of left elbow	Diagnosis	ICD-10-CM
M05.229	Rheumatoid vasculitis with rheumatoid arthritis of unspecified elbow	Diagnosis	ICD-10-CM
M05.231	Rheumatoid vasculitis with rheumatoid arthritis of right wrist	Diagnosis	ICD-10-CM
M05.232	Rheumatoid vasculitis with rheumatoid arthritis of left wrist	Diagnosis	ICD-10-CM
M05.239	Rheumatoid vasculitis with rheumatoid arthritis of unspecified wrist	Diagnosis	ICD-10-CM
M05.241	Rheumatoid vasculitis with rheumatoid arthritis of right hand	Diagnosis	ICD-10-CM
M05.242	Rheumatoid vasculitis with rheumatoid arthritis of left hand	Diagnosis	ICD-10-CM
M05.249	Rheumatoid vasculitis with rheumatoid arthritis of unspecified hand	Diagnosis	ICD-10-CM
M05.251	Rheumatoid vasculitis with rheumatoid arthritis of right hip	Diagnosis	ICD-10-CM
M05.252	Rheumatoid vasculitis with rheumatoid arthritis of left hip	Diagnosis	ICD-10-CM
M05.259	Rheumatoid vasculitis with rheumatoid arthritis of unspecified hip	Diagnosis	ICD-10-CM
M05.261	Rheumatoid vasculitis with rheumatoid arthritis of right knee	Diagnosis	ICD-10-CM
M05.262	Rheumatoid vasculitis with rheumatoid arthritis of left knee	Diagnosis	ICD-10-CM
M05.269	Rheumatoid vasculitis with rheumatoid arthritis of unspecified knee	Diagnosis	ICD-10-CM
M05.271	Rheumatoid vasculitis with rheumatoid arthritis of right ankle and foot	Diagnosis	ICD-10-CM
M05.272	Rheumatoid vasculitis with rheumatoid arthritis of left ankle and foot	Diagnosis	ICD-10-CM
M05.279	Rheumatoid vasculitis with rheumatoid arthritis of unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.29	Rheumatoid vasculitis with rheumatoid arthritis of multiple sites	Diagnosis	ICD-10-CM
M05.30	Rheumatoid heart disease with rheumatoid arthritis of unspecified site	Diagnosis	ICD-10-CM
M05.311	Rheumatoid heart disease with rheumatoid arthritis of right shoulder	Diagnosis	ICD-10-CM
M05.312	Rheumatoid heart disease with rheumatoid arthritis of left shoulder	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M05.319	Rheumatoid heart disease with rheumatoid arthritis of unspecified shoulder	Diagnosis	ICD-10-CM
M05.321	Rheumatoid heart disease with rheumatoid arthritis of right elbow	Diagnosis	ICD-10-CM
M05.322	Rheumatoid heart disease with rheumatoid arthritis of left elbow	Diagnosis	ICD-10-CM
M05.329	Rheumatoid heart disease with rheumatoid arthritis of unspecified elbow	Diagnosis	ICD-10-CM
M05.331	Rheumatoid heart disease with rheumatoid arthritis of right wrist	Diagnosis	ICD-10-CM
M05.332	Rheumatoid heart disease with rheumatoid arthritis of left wrist	Diagnosis	ICD-10-CM
M05.339	Rheumatoid heart disease with rheumatoid arthritis of unspecified wrist	Diagnosis	ICD-10-CM
M05.341	Rheumatoid heart disease with rheumatoid arthritis of right hand	Diagnosis	ICD-10-CM
M05.342	Rheumatoid heart disease with rheumatoid arthritis of left hand	Diagnosis	ICD-10-CM
M05.349	Rheumatoid heart disease with rheumatoid arthritis of unspecified hand	Diagnosis	ICD-10-CM
M05.351	Rheumatoid heart disease with rheumatoid arthritis of right hip	Diagnosis	ICD-10-CM
M05.352	Rheumatoid heart disease with rheumatoid arthritis of left hip	Diagnosis	ICD-10-CM
M05.359	Rheumatoid heart disease with rheumatoid arthritis of unspecified hip	Diagnosis	ICD-10-CM
M05.361	Rheumatoid heart disease with rheumatoid arthritis of right knee	Diagnosis	ICD-10-CM
M05.362	Rheumatoid heart disease with rheumatoid arthritis of left knee	Diagnosis	ICD-10-CM
M05.369	Rheumatoid heart disease with rheumatoid arthritis of unspecified knee	Diagnosis	ICD-10-CM
M05.371	Rheumatoid heart disease with rheumatoid arthritis of right ankle and foot	Diagnosis	ICD-10-CM
M05.372	Rheumatoid heart disease with rheumatoid arthritis of left ankle and foot	Diagnosis	ICD-10-CM
M05.379	Rheumatoid heart disease with rheumatoid arthritis of unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.39	Rheumatoid heart disease with rheumatoid arthritis of multiple sites	Diagnosis	ICD-10-CM
M05.40	Rheumatoid myopathy with rheumatoid arthritis of unspecified site	Diagnosis	ICD-10-CM
M05.411	Rheumatoid myopathy with rheumatoid arthritis of right shoulder	Diagnosis	ICD-10-CM
M05.412	Rheumatoid myopathy with rheumatoid arthritis of left shoulder	Diagnosis	ICD-10-CM
M05.419	Rheumatoid myopathy with rheumatoid arthritis of unspecified shoulder	Diagnosis	ICD-10-CM
M05.421	Rheumatoid myopathy with rheumatoid arthritis of right elbow	Diagnosis	ICD-10-CM
M05.422	Rheumatoid myopathy with rheumatoid arthritis of left elbow	Diagnosis	ICD-10-CM
M05.429	Rheumatoid myopathy with rheumatoid arthritis of unspecified elbow	Diagnosis	ICD-10-CM
M05.431	Rheumatoid myopathy with rheumatoid arthritis of right wrist	Diagnosis	ICD-10-CM
M05.432	Rheumatoid myopathy with rheumatoid arthritis of left wrist	Diagnosis	ICD-10-CM
M05.439	Rheumatoid myopathy with rheumatoid arthritis of unspecified wrist	Diagnosis	ICD-10-CM
M05.441	Rheumatoid myopathy with rheumatoid arthritis of right hand	Diagnosis	ICD-10-CM
M05.442	Rheumatoid myopathy with rheumatoid arthritis of left hand	Diagnosis	ICD-10-CM
M05.449	Rheumatoid myopathy with rheumatoid arthritis of unspecified hand	Diagnosis	ICD-10-CM
M05.451	Rheumatoid myopathy with rheumatoid arthritis of right hip	Diagnosis	ICD-10-CM
M05.452	Rheumatoid myopathy with rheumatoid arthritis of left hip	Diagnosis	ICD-10-CM
M05.459	Rheumatoid myopathy with rheumatoid arthritis of unspecified hip	Diagnosis	ICD-10-CM
M05.461	Rheumatoid myopathy with rheumatoid arthritis of right knee	Diagnosis	ICD-10-CM
M05.462	Rheumatoid myopathy with rheumatoid arthritis of left knee	Diagnosis	ICD-10-CM
M05.469	Rheumatoid myopathy with rheumatoid arthritis of unspecified knee	Diagnosis	ICD-10-CM
M05.471	Rheumatoid myopathy with rheumatoid arthritis of right ankle and foot	Diagnosis	ICD-10-CM
M05.472	Rheumatoid myopathy with rheumatoid arthritis of left ankle and foot	Diagnosis	ICD-10-CM
M05.479	Rheumatoid myopathy with rheumatoid arthritis of unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.49	Rheumatoid myopathy with rheumatoid arthritis of multiple sites	Diagnosis	ICD-10-CM
M05.50	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified site	Diagnosis	ICD-10-CM
M05.511	Rheumatoid polyneuropathy with rheumatoid arthritis of right shoulder	Diagnosis	ICD-10-CM
M05.512	Rheumatoid polyneuropathy with rheumatoid arthritis of left shoulder	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M05.519	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified shoulder	Diagnosis	ICD-10-CM
M05.521	Rheumatoid polyneuropathy with rheumatoid arthritis of right elbow	Diagnosis	ICD-10-CM
M05.522	Rheumatoid polyneuropathy with rheumatoid arthritis of left elbow	Diagnosis	ICD-10-CM
M05.529	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified elbow	Diagnosis	ICD-10-CM
M05.531	Rheumatoid polyneuropathy with rheumatoid arthritis of right wrist	Diagnosis	ICD-10-CM
M05.532	Rheumatoid polyneuropathy with rheumatoid arthritis of left wrist	Diagnosis	ICD-10-CM
M05.539	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified wrist	Diagnosis	ICD-10-CM
M05.541	Rheumatoid polyneuropathy with rheumatoid arthritis of right hand	Diagnosis	ICD-10-CM
M05.542	Rheumatoid polyneuropathy with rheumatoid arthritis of left hand	Diagnosis	ICD-10-CM
M05.549	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified hand	Diagnosis	ICD-10-CM
M05.551	Rheumatoid polyneuropathy with rheumatoid arthritis of right hip	Diagnosis	ICD-10-CM
M05.552	Rheumatoid polyneuropathy with rheumatoid arthritis of left hip	Diagnosis	ICD-10-CM
M05.559	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified hip	Diagnosis	ICD-10-CM
M05.561	Rheumatoid polyneuropathy with rheumatoid arthritis of right knee	Diagnosis	ICD-10-CM
M05.562	Rheumatoid polyneuropathy with rheumatoid arthritis of left knee	Diagnosis	ICD-10-CM
M05.569	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified knee	Diagnosis	ICD-10-CM
M05.571	Rheumatoid polyneuropathy with rheumatoid arthritis of right ankle and foot	Diagnosis	ICD-10-CM
M05.572	Rheumatoid polyneuropathy with rheumatoid arthritis of left ankle and foot	Diagnosis	ICD-10-CM
M05.579	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.59	Rheumatoid polyneuropathy with rheumatoid arthritis of multiple sites	Diagnosis	ICD-10-CM
M05.60	Rheumatoid arthritis of unspecified site with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.611	Rheumatoid arthritis of right shoulder with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.612	Rheumatoid arthritis of left shoulder with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.619	Rheumatoid arthritis of unspecified shoulder with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.621	Rheumatoid arthritis of right elbow with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.622	Rheumatoid arthritis of left elbow with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.629	Rheumatoid arthritis of unspecified elbow with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.631	Rheumatoid arthritis of right wrist with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.632	Rheumatoid arthritis of left wrist with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.639	Rheumatoid arthritis of unspecified wrist with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.641	Rheumatoid arthritis of right hand with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.642	Rheumatoid arthritis of left hand with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.649	Rheumatoid arthritis of unspecified hand with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.651	Rheumatoid arthritis of right hip with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.652	Rheumatoid arthritis of left hip with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.659	Rheumatoid arthritis of unspecified hip with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.661	Rheumatoid arthritis of right knee with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.662	Rheumatoid arthritis of left knee with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.669	Rheumatoid arthritis of unspecified knee with involvement of other organs and systems	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M05.671	Rheumatoid arthritis of right ankle and foot with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.672	Rheumatoid arthritis of left ankle and foot with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.679	Rheumatoid arthritis of unspecified ankle and foot with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.69	Rheumatoid arthritis of multiple sites with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.70	Rheumatoid arthritis with rheumatoid factor of unspecified site without organ or systems involvement	Diagnosis	ICD-10-CM
M05.711	Rheumatoid arthritis with rheumatoid factor of right shoulder without organ or systems involvement	Diagnosis	ICD-10-CM
M05.712	Rheumatoid arthritis with rheumatoid factor of left shoulder without organ or systems involvement	Diagnosis	ICD-10-CM
M05.719	Rheumatoid arthritis with rheumatoid factor of unspecified shoulder without organ or systems involvement	Diagnosis	ICD-10-CM
M05.721	Rheumatoid arthritis with rheumatoid factor of right elbow without organ or systems involvement	Diagnosis	ICD-10-CM
M05.722	Rheumatoid arthritis with rheumatoid factor of left elbow without organ or systems involvement	Diagnosis	ICD-10-CM
M05.729	Rheumatoid arthritis with rheumatoid factor of unspecified elbow without organ or systems involvement	Diagnosis	ICD-10-CM
M05.731	Rheumatoid arthritis with rheumatoid factor of right wrist without organ or systems involvement	Diagnosis	ICD-10-CM
M05.732	Rheumatoid arthritis with rheumatoid factor of left wrist without organ or systems involvement	Diagnosis	ICD-10-CM
M05.739	Rheumatoid arthritis with rheumatoid factor of unspecified wrist without organ or systems involvement	Diagnosis	ICD-10-CM
M05.741	Rheumatoid arthritis with rheumatoid factor of right hand without organ or systems involvement	Diagnosis	ICD-10-CM
M05.742	Rheumatoid arthritis with rheumatoid factor of left hand without organ or systems involvement	Diagnosis	ICD-10-CM
M05.749	Rheumatoid arthritis with rheumatoid factor of unspecified hand without organ or systems involvement	Diagnosis	ICD-10-CM
M05.751	Rheumatoid arthritis with rheumatoid factor of right hip without organ or systems involvement	Diagnosis	ICD-10-CM
M05.752	Rheumatoid arthritis with rheumatoid factor of left hip without organ or systems involvement	Diagnosis	ICD-10-CM
M05.759	Rheumatoid arthritis with rheumatoid factor of unspecified hip without organ or systems involvement	Diagnosis	ICD-10-CM
M05.761	Rheumatoid arthritis with rheumatoid factor of right knee without organ or systems involvement	Diagnosis	ICD-10-CM
M05.762	Rheumatoid arthritis with rheumatoid factor of left knee without organ or systems involvement	Diagnosis	ICD-10-CM
M05.769	Rheumatoid arthritis with rheumatoid factor of unspecified knee without organ or systems involvement	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M05.771	Rheumatoid arthritis with rheumatoid factor of right ankle and foot without organ or systems involvement	Diagnosis	ICD-10-CM
M05.772	Rheumatoid arthritis with rheumatoid factor of left ankle and foot without organ or systems involvement	Diagnosis	ICD-10-CM
M05.779	Rheumatoid arthritis with rheumatoid factor of unspecified ankle and foot without organ or systems involvement	Diagnosis	ICD-10-CM
M05.79	Rheumatoid arthritis with rheumatoid factor of multiple sites without organ or systems involvement	Diagnosis	ICD-10-CM
M05.7A	Rheumatoid arthritis with rheumatoid factor of other specified site without organ or systems involvement	Diagnosis	ICD-10-CM
M05.80	Other rheumatoid arthritis with rheumatoid factor of unspecified site	Diagnosis	ICD-10-CM
M05.811	Other rheumatoid arthritis with rheumatoid factor of right shoulder	Diagnosis	ICD-10-CM
M05.812	Other rheumatoid arthritis with rheumatoid factor of left shoulder	Diagnosis	ICD-10-CM
M05.819	Other rheumatoid arthritis with rheumatoid factor of unspecified shoulder	Diagnosis	ICD-10-CM
M05.821	Other rheumatoid arthritis with rheumatoid factor of right elbow	Diagnosis	ICD-10-CM
M05.822	Other rheumatoid arthritis with rheumatoid factor of left elbow	Diagnosis	ICD-10-CM
M05.829	Other rheumatoid arthritis with rheumatoid factor of unspecified elbow	Diagnosis	ICD-10-CM
M05.831	Other rheumatoid arthritis with rheumatoid factor of right wrist	Diagnosis	ICD-10-CM
M05.832	Other rheumatoid arthritis with rheumatoid factor of left wrist	Diagnosis	ICD-10-CM
M05.839	Other rheumatoid arthritis with rheumatoid factor of unspecified wrist	Diagnosis	ICD-10-CM
M05.841	Other rheumatoid arthritis with rheumatoid factor of right hand	Diagnosis	ICD-10-CM
M05.842	Other rheumatoid arthritis with rheumatoid factor of left hand	Diagnosis	ICD-10-CM
M05.849	Other rheumatoid arthritis with rheumatoid factor of unspecified hand	Diagnosis	ICD-10-CM
M05.851	Other rheumatoid arthritis with rheumatoid factor of right hip	Diagnosis	ICD-10-CM
M05.852	Other rheumatoid arthritis with rheumatoid factor of left hip	Diagnosis	ICD-10-CM
M05.859	Other rheumatoid arthritis with rheumatoid factor of unspecified hip	Diagnosis	ICD-10-CM
M05.861	Other rheumatoid arthritis with rheumatoid factor of right knee	Diagnosis	ICD-10-CM
M05.862	Other rheumatoid arthritis with rheumatoid factor of left knee	Diagnosis	ICD-10-CM
M05.869	Other rheumatoid arthritis with rheumatoid factor of unspecified knee	Diagnosis	ICD-10-CM
M05.871	Other rheumatoid arthritis with rheumatoid factor of right ankle and foot	Diagnosis	ICD-10-CM
M05.872	Other rheumatoid arthritis with rheumatoid factor of left ankle and foot	Diagnosis	ICD-10-CM
M05.879	Other rheumatoid arthritis with rheumatoid factor of unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.89	Other rheumatoid arthritis with rheumatoid factor of multiple sites	Diagnosis	ICD-10-CM
M05.8A	Other rheumatoid arthritis with rheumatoid factor of other specified site	Diagnosis	ICD-10-CM
M05.9	Rheumatoid arthritis with rheumatoid factor, unspecified	Diagnosis	ICD-10-CM
M06.00	Rheumatoid arthritis without rheumatoid factor, unspecified site	Diagnosis	ICD-10-CM
M06.011	Rheumatoid arthritis without rheumatoid factor, right shoulder	Diagnosis	ICD-10-CM
M06.012	Rheumatoid arthritis without rheumatoid factor, left shoulder	Diagnosis	ICD-10-CM
M06.019	Rheumatoid arthritis without rheumatoid factor, unspecified shoulder	Diagnosis	ICD-10-CM
M06.021	Rheumatoid arthritis without rheumatoid factor, right elbow	Diagnosis	ICD-10-CM
M06.022	Rheumatoid arthritis without rheumatoid factor, left elbow	Diagnosis	ICD-10-CM
M06.029	Rheumatoid arthritis without rheumatoid factor, unspecified elbow	Diagnosis	ICD-10-CM
M06.031	Rheumatoid arthritis without rheumatoid factor, right wrist	Diagnosis	ICD-10-CM
M06.032	Rheumatoid arthritis without rheumatoid factor, left wrist	Diagnosis	ICD-10-CM
M06.039	Rheumatoid arthritis without rheumatoid factor, unspecified wrist	Diagnosis	ICD-10-CM
M06.041	Rheumatoid arthritis without rheumatoid factor, right hand	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M06.042	Rheumatoid arthritis without rheumatoid factor, left hand	Diagnosis	ICD-10-CM
M06.049	Rheumatoid arthritis without rheumatoid factor, unspecified hand	Diagnosis	ICD-10-CM
M06.051	Rheumatoid arthritis without rheumatoid factor, right hip	Diagnosis	ICD-10-CM
M06.052	Rheumatoid arthritis without rheumatoid factor, left hip	Diagnosis	ICD-10-CM
M06.059	Rheumatoid arthritis without rheumatoid factor, unspecified hip	Diagnosis	ICD-10-CM
M06.061	Rheumatoid arthritis without rheumatoid factor, right knee	Diagnosis	ICD-10-CM
M06.062	Rheumatoid arthritis without rheumatoid factor, left knee	Diagnosis	ICD-10-CM
M06.069	Rheumatoid arthritis without rheumatoid factor, unspecified knee	Diagnosis	ICD-10-CM
M06.071	Rheumatoid arthritis without rheumatoid factor, right ankle and foot	Diagnosis	ICD-10-CM
M06.072	Rheumatoid arthritis without rheumatoid factor, left ankle and foot	Diagnosis	ICD-10-CM
M06.079	Rheumatoid arthritis without rheumatoid factor, unspecified ankle and foot	Diagnosis	ICD-10-CM
M06.08	Rheumatoid arthritis without rheumatoid factor, vertebrae	Diagnosis	ICD-10-CM
M06.09	Rheumatoid arthritis without rheumatoid factor, multiple sites	Diagnosis	ICD-10-CM
M06.0A	Rheumatoid arthritis without rheumatoid factor, other specified site	Diagnosis	ICD-10-CM
M06.1	Adult-onset Still's disease	Diagnosis	ICD-10-CM
M06.20	Rheumatoid bursitis, unspecified site	Diagnosis	ICD-10-CM
M06.211	Rheumatoid bursitis, right shoulder	Diagnosis	ICD-10-CM
M06.212	Rheumatoid bursitis, left shoulder	Diagnosis	ICD-10-CM
M06.219	Rheumatoid bursitis, unspecified shoulder	Diagnosis	ICD-10-CM
M06.221	Rheumatoid bursitis, right elbow	Diagnosis	ICD-10-CM
M06.222	Rheumatoid bursitis, left elbow	Diagnosis	ICD-10-CM
M06.229	Rheumatoid bursitis, unspecified elbow	Diagnosis	ICD-10-CM
M06.231	Rheumatoid bursitis, right wrist	Diagnosis	ICD-10-CM
M06.232	Rheumatoid bursitis, left wrist	Diagnosis	ICD-10-CM
M06.239	Rheumatoid bursitis, unspecified wrist	Diagnosis	ICD-10-CM
M06.241	Rheumatoid bursitis, right hand	Diagnosis	ICD-10-CM
M06.242	Rheumatoid bursitis, left hand	Diagnosis	ICD-10-CM
M06.249	Rheumatoid bursitis, unspecified hand	Diagnosis	ICD-10-CM
M06.251	Rheumatoid bursitis, right hip	Diagnosis	ICD-10-CM
M06.252	Rheumatoid bursitis, left hip	Diagnosis	ICD-10-CM
M06.259	Rheumatoid bursitis, unspecified hip	Diagnosis	ICD-10-CM
M06.261	Rheumatoid bursitis, right knee	Diagnosis	ICD-10-CM
M06.262	Rheumatoid bursitis, left knee	Diagnosis	ICD-10-CM
M06.269	Rheumatoid bursitis, unspecified knee	Diagnosis	ICD-10-CM
M06.271	Rheumatoid bursitis, right ankle and foot	Diagnosis	ICD-10-CM
M06.272	Rheumatoid bursitis, left ankle and foot	Diagnosis	ICD-10-CM
M06.279	Rheumatoid bursitis, unspecified ankle and foot	Diagnosis	ICD-10-CM
M06.28	Rheumatoid bursitis, vertebrae	Diagnosis	ICD-10-CM
M06.29	Rheumatoid bursitis, multiple sites	Diagnosis	ICD-10-CM
M06.30	Rheumatoid nodule, unspecified site	Diagnosis	ICD-10-CM
M06.311	Rheumatoid nodule, right shoulder	Diagnosis	ICD-10-CM
M06.312	Rheumatoid nodule, left shoulder	Diagnosis	ICD-10-CM
M06.319	Rheumatoid nodule, unspecified shoulder	Diagnosis	ICD-10-CM
M06.321	Rheumatoid nodule, right elbow	Diagnosis	ICD-10-CM
M06.322	Rheumatoid nodule, left elbow	Diagnosis	ICD-10-CM
M06.329	Rheumatoid nodule, unspecified elbow	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M06.331	Rheumatoid nodule, right wrist	Diagnosis	ICD-10-CM
M06.332	Rheumatoid nodule, left wrist	Diagnosis	ICD-10-CM
M06.339	Rheumatoid nodule, unspecified wrist	Diagnosis	ICD-10-CM
M06.341	Rheumatoid nodule, right hand	Diagnosis	ICD-10-CM
M06.342	Rheumatoid nodule, left hand	Diagnosis	ICD-10-CM
M06.349	Rheumatoid nodule, unspecified hand	Diagnosis	ICD-10-CM
M06.351	Rheumatoid nodule, right hip	Diagnosis	ICD-10-CM
M06.352	Rheumatoid nodule, left hip	Diagnosis	ICD-10-CM
M06.359	Rheumatoid nodule, unspecified hip	Diagnosis	ICD-10-CM
M06.361	Rheumatoid nodule, right knee	Diagnosis	ICD-10-CM
M06.362	Rheumatoid nodule, left knee	Diagnosis	ICD-10-CM
M06.369	Rheumatoid nodule, unspecified knee	Diagnosis	ICD-10-CM
M06.371	Rheumatoid nodule, right ankle and foot	Diagnosis	ICD-10-CM
M06.372	Rheumatoid nodule, left ankle and foot	Diagnosis	ICD-10-CM
M06.379	Rheumatoid nodule, unspecified ankle and foot	Diagnosis	ICD-10-CM
M06.38	Rheumatoid nodule, vertebrae	Diagnosis	ICD-10-CM
M06.39	Rheumatoid nodule, multiple sites	Diagnosis	ICD-10-CM
M06.80	Other specified rheumatoid arthritis, unspecified site	Diagnosis	ICD-10-CM
M06.811	Other specified rheumatoid arthritis, right shoulder	Diagnosis	ICD-10-CM
M06.812	Other specified rheumatoid arthritis, left shoulder	Diagnosis	ICD-10-CM
M06.819	Other specified rheumatoid arthritis, unspecified shoulder	Diagnosis	ICD-10-CM
M06.821	Other specified rheumatoid arthritis, right elbow	Diagnosis	ICD-10-CM
M06.822	Other specified rheumatoid arthritis, left elbow	Diagnosis	ICD-10-CM
M06.829	Other specified rheumatoid arthritis, unspecified elbow	Diagnosis	ICD-10-CM
M06.831	Other specified rheumatoid arthritis, right wrist	Diagnosis	ICD-10-CM
M06.832	Other specified rheumatoid arthritis, left wrist	Diagnosis	ICD-10-CM
M06.839	Other specified rheumatoid arthritis, unspecified wrist	Diagnosis	ICD-10-CM
M06.841	Other specified rheumatoid arthritis, right hand	Diagnosis	ICD-10-CM
M06.842	Other specified rheumatoid arthritis, left hand	Diagnosis	ICD-10-CM
M06.849	Other specified rheumatoid arthritis, unspecified hand	Diagnosis	ICD-10-CM
M06.851	Other specified rheumatoid arthritis, right hip	Diagnosis	ICD-10-CM
M06.852	Other specified rheumatoid arthritis, left hip	Diagnosis	ICD-10-CM
M06.859	Other specified rheumatoid arthritis, unspecified hip	Diagnosis	ICD-10-CM
M06.861	Other specified rheumatoid arthritis, right knee	Diagnosis	ICD-10-CM
M06.862	Other specified rheumatoid arthritis, left knee	Diagnosis	ICD-10-CM
M06.869	Other specified rheumatoid arthritis, unspecified knee	Diagnosis	ICD-10-CM
M06.871	Other specified rheumatoid arthritis, right ankle and foot	Diagnosis	ICD-10-CM
M06.872	Other specified rheumatoid arthritis, left ankle and foot	Diagnosis	ICD-10-CM
M06.879	Other specified rheumatoid arthritis, unspecified ankle and foot	Diagnosis	ICD-10-CM
M06.88	Other specified rheumatoid arthritis, vertebrae	Diagnosis	ICD-10-CM
M06.89	Other specified rheumatoid arthritis, multiple sites	Diagnosis	ICD-10-CM
M06.8A	Other specified rheumatoid arthritis, other specified site	Diagnosis	ICD-10-CM
M06.9	Rheumatoid arthritis, unspecified	Diagnosis	ICD-10-CM
M08.00	Unspecified juvenile rheumatoid arthritis of unspecified site	Diagnosis	ICD-10-CM
M08.011	Unspecified juvenile rheumatoid arthritis, right shoulder	Diagnosis	ICD-10-CM
M08.012	Unspecified juvenile rheumatoid arthritis, left shoulder	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M08.019	Unspecified juvenile rheumatoid arthritis, unspecified shoulder	Diagnosis	ICD-10-CM
M08.021	Unspecified juvenile rheumatoid arthritis, right elbow	Diagnosis	ICD-10-CM
M08.022	Unspecified juvenile rheumatoid arthritis, left elbow	Diagnosis	ICD-10-CM
M08.029	Unspecified juvenile rheumatoid arthritis, unspecified elbow	Diagnosis	ICD-10-CM
M08.031	Unspecified juvenile rheumatoid arthritis, right wrist	Diagnosis	ICD-10-CM
M08.032	Unspecified juvenile rheumatoid arthritis, left wrist	Diagnosis	ICD-10-CM
M08.039	Unspecified juvenile rheumatoid arthritis, unspecified wrist	Diagnosis	ICD-10-CM
M08.041	Unspecified juvenile rheumatoid arthritis, right hand	Diagnosis	ICD-10-CM
M08.042	Unspecified juvenile rheumatoid arthritis, left hand	Diagnosis	ICD-10-CM
M08.049	Unspecified juvenile rheumatoid arthritis, unspecified hand	Diagnosis	ICD-10-CM
M08.051	Unspecified juvenile rheumatoid arthritis, right hip	Diagnosis	ICD-10-CM
M08.052	Unspecified juvenile rheumatoid arthritis, left hip	Diagnosis	ICD-10-CM
M08.059	Unspecified juvenile rheumatoid arthritis, unspecified hip	Diagnosis	ICD-10-CM
M08.061	Unspecified juvenile rheumatoid arthritis, right knee	Diagnosis	ICD-10-CM
M08.062	Unspecified juvenile rheumatoid arthritis, left knee	Diagnosis	ICD-10-CM
M08.069	Unspecified juvenile rheumatoid arthritis, unspecified knee	Diagnosis	ICD-10-CM
M08.071	Unspecified juvenile rheumatoid arthritis, right ankle and foot	Diagnosis	ICD-10-CM
M08.072	Unspecified juvenile rheumatoid arthritis, left ankle and foot	Diagnosis	ICD-10-CM
M08.079	Unspecified juvenile rheumatoid arthritis, unspecified ankle and foot	Diagnosis	ICD-10-CM
M08.08	Unspecified juvenile rheumatoid arthritis, vertebrae	Diagnosis	ICD-10-CM
M08.09	Unspecified juvenile rheumatoid arthritis, multiple sites	Diagnosis	ICD-10-CM
M08.0A	Unspecified juvenile rheumatoid arthritis, other specified site	Diagnosis	ICD-10-CM
M08.1	Juvenile ankylosing spondylitis	Diagnosis	ICD-10-CM
M08.20	Juvenile rheumatoid arthritis with systemic onset, unspecified site	Diagnosis	ICD-10-CM
M08.211	Juvenile rheumatoid arthritis with systemic onset, right shoulder	Diagnosis	ICD-10-CM
M08.212	Juvenile rheumatoid arthritis with systemic onset, left shoulder	Diagnosis	ICD-10-CM
M08.219	Juvenile rheumatoid arthritis with systemic onset, unspecified shoulder	Diagnosis	ICD-10-CM
M08.221	Juvenile rheumatoid arthritis with systemic onset, right elbow	Diagnosis	ICD-10-CM
M08.222	Juvenile rheumatoid arthritis with systemic onset, left elbow	Diagnosis	ICD-10-CM
M08.229	Juvenile rheumatoid arthritis with systemic onset, unspecified elbow	Diagnosis	ICD-10-CM
M08.231	Juvenile rheumatoid arthritis with systemic onset, right wrist	Diagnosis	ICD-10-CM
M08.232	Juvenile rheumatoid arthritis with systemic onset, left wrist	Diagnosis	ICD-10-CM
M08.239	Juvenile rheumatoid arthritis with systemic onset, unspecified wrist	Diagnosis	ICD-10-CM
M08.241	Juvenile rheumatoid arthritis with systemic onset, right hand	Diagnosis	ICD-10-CM
M08.242	Juvenile rheumatoid arthritis with systemic onset, left hand	Diagnosis	ICD-10-CM
M08.249	Juvenile rheumatoid arthritis with systemic onset, unspecified hand	Diagnosis	ICD-10-CM
M08.251	Juvenile rheumatoid arthritis with systemic onset, right hip	Diagnosis	ICD-10-CM
M08.252	Juvenile rheumatoid arthritis with systemic onset, left hip	Diagnosis	ICD-10-CM
M08.259	Juvenile rheumatoid arthritis with systemic onset, unspecified hip	Diagnosis	ICD-10-CM
M08.261	Juvenile rheumatoid arthritis with systemic onset, right knee	Diagnosis	ICD-10-CM
M08.262	Juvenile rheumatoid arthritis with systemic onset, left knee	Diagnosis	ICD-10-CM
M08.269	Juvenile rheumatoid arthritis with systemic onset, unspecified knee	Diagnosis	ICD-10-CM
M08.271	Juvenile rheumatoid arthritis with systemic onset, right ankle and foot	Diagnosis	ICD-10-CM
M08.272	Juvenile rheumatoid arthritis with systemic onset, left ankle and foot	Diagnosis	ICD-10-CM
M08.279	Juvenile rheumatoid arthritis with systemic onset, unspecified ankle and foot	Diagnosis	ICD-10-CM
M08.28	Juvenile rheumatoid arthritis with systemic onset, vertebrae	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M08.29	Juvenile rheumatoid arthritis with systemic onset, multiple sites	Diagnosis	ICD-10-CM
M08.2A	Juvenile rheumatoid arthritis with systemic onset, other specified site	Diagnosis	ICD-10-CM
M08.3	Juvenile rheumatoid polyarthritis (seronegative)	Diagnosis	ICD-10-CM
M08.40	Pauciarticular juvenile rheumatoid arthritis, unspecified site	Diagnosis	ICD-10-CM
M08.411	Pauciarticular juvenile rheumatoid arthritis, right shoulder	Diagnosis	ICD-10-CM
M08.412	Pauciarticular juvenile rheumatoid arthritis, left shoulder	Diagnosis	ICD-10-CM
M08.419	Pauciarticular juvenile rheumatoid arthritis, unspecified shoulder	Diagnosis	ICD-10-CM
M08.421	Pauciarticular juvenile rheumatoid arthritis, right elbow	Diagnosis	ICD-10-CM
M08.422	Pauciarticular juvenile rheumatoid arthritis, left elbow	Diagnosis	ICD-10-CM
M08.429	Pauciarticular juvenile rheumatoid arthritis, unspecified elbow	Diagnosis	ICD-10-CM
M08.431	Pauciarticular juvenile rheumatoid arthritis, right wrist	Diagnosis	ICD-10-CM
M08.432	Pauciarticular juvenile rheumatoid arthritis, left wrist	Diagnosis	ICD-10-CM
M08.439	Pauciarticular juvenile rheumatoid arthritis, unspecified wrist	Diagnosis	ICD-10-CM
M08.441	Pauciarticular juvenile rheumatoid arthritis, right hand	Diagnosis	ICD-10-CM
M08.442	Pauciarticular juvenile rheumatoid arthritis, left hand	Diagnosis	ICD-10-CM
M08.449	Pauciarticular juvenile rheumatoid arthritis, unspecified hand	Diagnosis	ICD-10-CM
M08.451	Pauciarticular juvenile rheumatoid arthritis, right hip	Diagnosis	ICD-10-CM
M08.452	Pauciarticular juvenile rheumatoid arthritis, left hip	Diagnosis	ICD-10-CM
M08.459	Pauciarticular juvenile rheumatoid arthritis, unspecified hip	Diagnosis	ICD-10-CM
M08.461	Pauciarticular juvenile rheumatoid arthritis, right knee	Diagnosis	ICD-10-CM
M08.462	Pauciarticular juvenile rheumatoid arthritis, left knee	Diagnosis	ICD-10-CM
M08.469	Pauciarticular juvenile rheumatoid arthritis, unspecified knee	Diagnosis	ICD-10-CM
M08.471	Pauciarticular juvenile rheumatoid arthritis, right ankle and foot	Diagnosis	ICD-10-CM
M08.472	Pauciarticular juvenile rheumatoid arthritis, left ankle and foot	Diagnosis	ICD-10-CM
M08.479	Pauciarticular juvenile rheumatoid arthritis, unspecified ankle and foot	Diagnosis	ICD-10-CM
M08.48	Pauciarticular juvenile rheumatoid arthritis, vertebrae	Diagnosis	ICD-10-CM
M08.4A	Pauciarticular juvenile rheumatoid arthritis, other specified site	Diagnosis	ICD-10-CM
M08.80	Other juvenile arthritis, unspecified site	Diagnosis	ICD-10-CM
M08.811	Other juvenile arthritis, right shoulder	Diagnosis	ICD-10-CM
M08.812	Other juvenile arthritis, left shoulder	Diagnosis	ICD-10-CM
M08.819	Other juvenile arthritis, unspecified shoulder	Diagnosis	ICD-10-CM
M08.821	Other juvenile arthritis, right elbow	Diagnosis	ICD-10-CM
M08.822	Other juvenile arthritis, left elbow	Diagnosis	ICD-10-CM
M08.829	Other juvenile arthritis, unspecified elbow	Diagnosis	ICD-10-CM
M08.831	Other juvenile arthritis, right wrist	Diagnosis	ICD-10-CM
M08.832	Other juvenile arthritis, left wrist	Diagnosis	ICD-10-CM
M08.839	Other juvenile arthritis, unspecified wrist	Diagnosis	ICD-10-CM
M08.841	Other juvenile arthritis, right hand	Diagnosis	ICD-10-CM
M08.842	Other juvenile arthritis, left hand	Diagnosis	ICD-10-CM
M08.849	Other juvenile arthritis, unspecified hand	Diagnosis	ICD-10-CM
M08.851	Other juvenile arthritis, right hip	Diagnosis	ICD-10-CM
M08.852	Other juvenile arthritis, left hip	Diagnosis	ICD-10-CM
M08.859	Other juvenile arthritis, unspecified hip	Diagnosis	ICD-10-CM
M08.861	Other juvenile arthritis, right knee	Diagnosis	ICD-10-CM
M08.862	Other juvenile arthritis, left knee	Diagnosis	ICD-10-CM
M08.869	Other juvenile arthritis, unspecified knee	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M08.871	Other juvenile arthritis, right ankle and foot	Diagnosis	ICD-10-CM
M08.872	Other juvenile arthritis, left ankle and foot	Diagnosis	ICD-10-CM
M08.879	Other juvenile arthritis, unspecified ankle and foot	Diagnosis	ICD-10-CM
M08.88	Other juvenile arthritis, other specified site	Diagnosis	ICD-10-CM
M08.89	Other juvenile arthritis, multiple sites	Diagnosis	ICD-10-CM
M08.90	Juvenile arthritis, unspecified, unspecified site	Diagnosis	ICD-10-CM
M08.911	Juvenile arthritis, unspecified, right shoulder	Diagnosis	ICD-10-CM
M08.912	Juvenile arthritis, unspecified, left shoulder	Diagnosis	ICD-10-CM
M08.919	Juvenile arthritis, unspecified, unspecified shoulder	Diagnosis	ICD-10-CM
M08.921	Juvenile arthritis, unspecified, right elbow	Diagnosis	ICD-10-CM
M08.922	Juvenile arthritis, unspecified, left elbow	Diagnosis	ICD-10-CM
M08.929	Juvenile arthritis, unspecified, unspecified elbow	Diagnosis	ICD-10-CM
M08.931	Juvenile arthritis, unspecified, right wrist	Diagnosis	ICD-10-CM
M08.932	Juvenile arthritis, unspecified, left wrist	Diagnosis	ICD-10-CM
M08.939	Juvenile arthritis, unspecified, unspecified wrist	Diagnosis	ICD-10-CM
M08.941	Juvenile arthritis, unspecified, right hand	Diagnosis	ICD-10-CM
M08.942	Juvenile arthritis, unspecified, left hand	Diagnosis	ICD-10-CM
M08.949	Juvenile arthritis, unspecified, unspecified hand	Diagnosis	ICD-10-CM
M08.951	Juvenile arthritis, unspecified, right hip	Diagnosis	ICD-10-CM
M08.952	Juvenile arthritis, unspecified, left hip	Diagnosis	ICD-10-CM
M08.959	Juvenile arthritis, unspecified, unspecified hip	Diagnosis	ICD-10-CM
M08.961	Juvenile arthritis, unspecified, right knee	Diagnosis	ICD-10-CM
M08.962	Juvenile arthritis, unspecified, left knee	Diagnosis	ICD-10-CM
M08.969	Juvenile arthritis, unspecified, unspecified knee	Diagnosis	ICD-10-CM
M08.971	Juvenile arthritis, unspecified, right ankle and foot	Diagnosis	ICD-10-CM
M08.972	Juvenile arthritis, unspecified, left ankle and foot	Diagnosis	ICD-10-CM
M08.979	Juvenile arthritis, unspecified, unspecified ankle and foot	Diagnosis	ICD-10-CM
M08.98	Juvenile arthritis, unspecified, vertebrae	Diagnosis	ICD-10-CM
M08.99	Juvenile arthritis, unspecified, multiple sites	Diagnosis	ICD-10-CM
M08.9A	Juvenile arthritis, unspecified, other specified site	Diagnosis	ICD-10-CM
M15.0	Primary generalized (osteo)arthritis	Diagnosis	ICD-10-CM
M15.1	Heberden's nodes (with arthropathy)	Diagnosis	ICD-10-CM
M15.2	Bouchard's nodes (with arthropathy)	Diagnosis	ICD-10-CM
M15.3	Secondary multiple arthritis	Diagnosis	ICD-10-CM
M15.4	Erosive (osteo)arthritis	Diagnosis	ICD-10-CM
M15.8	Other polyosteoarthritis	Diagnosis	ICD-10-CM
M15.9	Polyosteoarthritis, unspecified	Diagnosis	ICD-10-CM
M16.0	Bilateral primary osteoarthritis of hip	Diagnosis	ICD-10-CM
M16.10	Unilateral primary osteoarthritis, unspecified hip	Diagnosis	ICD-10-CM
M16.11	Unilateral primary osteoarthritis, right hip	Diagnosis	ICD-10-CM
M16.12	Unilateral primary osteoarthritis, left hip	Diagnosis	ICD-10-CM
M16.2	Bilateral osteoarthritis resulting from hip dysplasia	Diagnosis	ICD-10-CM
M16.30	Unilateral osteoarthritis resulting from hip dysplasia, unspecified hip	Diagnosis	ICD-10-CM
M16.31	Unilateral osteoarthritis resulting from hip dysplasia, right hip	Diagnosis	ICD-10-CM
M16.32	Unilateral osteoarthritis resulting from hip dysplasia, left hip	Diagnosis	ICD-10-CM
M16.4	Bilateral post-traumatic osteoarthritis of hip	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M16.50	Unilateral post-traumatic osteoarthritis, unspecified hip	Diagnosis	ICD-10-CM
M16.51	Unilateral post-traumatic osteoarthritis, right hip	Diagnosis	ICD-10-CM
M16.52	Unilateral post-traumatic osteoarthritis, left hip	Diagnosis	ICD-10-CM
M16.6	Other bilateral secondary osteoarthritis of hip	Diagnosis	ICD-10-CM
M16.7	Other unilateral secondary osteoarthritis of hip	Diagnosis	ICD-10-CM
M16.9	Osteoarthritis of hip, unspecified	Diagnosis	ICD-10-CM
M17.0	Bilateral primary osteoarthritis of knee	Diagnosis	ICD-10-CM
M17.10	Unilateral primary osteoarthritis, unspecified knee	Diagnosis	ICD-10-CM
M17.11	Unilateral primary osteoarthritis, right knee	Diagnosis	ICD-10-CM
M17.12	Unilateral primary osteoarthritis, left knee	Diagnosis	ICD-10-CM
M17.2	Bilateral post-traumatic osteoarthritis of knee	Diagnosis	ICD-10-CM
M17.30	Unilateral post-traumatic osteoarthritis, unspecified knee	Diagnosis	ICD-10-CM
M17.31	Unilateral post-traumatic osteoarthritis, right knee	Diagnosis	ICD-10-CM
M17.32	Unilateral post-traumatic osteoarthritis, left knee	Diagnosis	ICD-10-CM
M17.4	Other bilateral secondary osteoarthritis of knee	Diagnosis	ICD-10-CM
M17.5	Other unilateral secondary osteoarthritis of knee	Diagnosis	ICD-10-CM
M17.9	Osteoarthritis of knee, unspecified	Diagnosis	ICD-10-CM
M18.0	Bilateral primary osteoarthritis of first carpometacarpal joints	Diagnosis	ICD-10-CM
M18.10	Unilateral primary osteoarthritis of first carpometacarpal joint, unspecified hand	Diagnosis	ICD-10-CM
M18.11	Unilateral primary osteoarthritis of first carpometacarpal joint, right hand	Diagnosis	ICD-10-CM
M18.12	Unilateral primary osteoarthritis of first carpometacarpal joint, left hand	Diagnosis	ICD-10-CM
M18.2	Bilateral post-traumatic osteoarthritis of first carpometacarpal joints	Diagnosis	ICD-10-CM
M18.30	Unilateral post-traumatic osteoarthritis of first carpometacarpal joint, unspecified hand	Diagnosis	ICD-10-CM
M18.31	Unilateral post-traumatic osteoarthritis of first carpometacarpal joint, right hand	Diagnosis	ICD-10-CM
M18.32	Unilateral post-traumatic osteoarthritis of first carpometacarpal joint, left hand	Diagnosis	ICD-10-CM
M18.4	Other bilateral secondary osteoarthritis of first carpometacarpal joints	Diagnosis	ICD-10-CM
M18.50	Other unilateral secondary osteoarthritis of first carpometacarpal joint, unspecified hand	Diagnosis	ICD-10-CM
M18.51	Other unilateral secondary osteoarthritis of first carpometacarpal joint, right hand	Diagnosis	ICD-10-CM
M18.52	Other unilateral secondary osteoarthritis of first carpometacarpal joint, left hand	Diagnosis	ICD-10-CM
M18.9	Osteoarthritis of first carpometacarpal joint, unspecified	Diagnosis	ICD-10-CM
M19.011	Primary osteoarthritis, right shoulder	Diagnosis	ICD-10-CM
M19.012	Primary osteoarthritis, left shoulder	Diagnosis	ICD-10-CM
M19.019	Primary osteoarthritis, unspecified shoulder	Diagnosis	ICD-10-CM
M19.021	Primary osteoarthritis, right elbow	Diagnosis	ICD-10-CM
M19.022	Primary osteoarthritis, left elbow	Diagnosis	ICD-10-CM
M19.029	Primary osteoarthritis, unspecified elbow	Diagnosis	ICD-10-CM
M19.031	Primary osteoarthritis, right wrist	Diagnosis	ICD-10-CM
M19.032	Primary osteoarthritis, left wrist	Diagnosis	ICD-10-CM
M19.039	Primary osteoarthritis, unspecified wrist	Diagnosis	ICD-10-CM
M19.041	Primary osteoarthritis, right hand	Diagnosis	ICD-10-CM
M19.042	Primary osteoarthritis, left hand	Diagnosis	ICD-10-CM
M19.049	Primary osteoarthritis, unspecified hand	Diagnosis	ICD-10-CM
M19.071	Primary osteoarthritis, right ankle and foot	Diagnosis	ICD-10-CM
M19.072	Primary osteoarthritis, left ankle and foot	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M19.079	Primary osteoarthritis, unspecified ankle and foot	Diagnosis	ICD-10-CM
M19.09	Primary osteoarthritis, other specified site	Diagnosis	ICD-10-CM
M19.111	Post-traumatic osteoarthritis, right shoulder	Diagnosis	ICD-10-CM
M19.112	Post-traumatic osteoarthritis, left shoulder	Diagnosis	ICD-10-CM
M19.119	Post-traumatic osteoarthritis, unspecified shoulder	Diagnosis	ICD-10-CM
M19.121	Post-traumatic osteoarthritis, right elbow	Diagnosis	ICD-10-CM
M19.122	Post-traumatic osteoarthritis, left elbow	Diagnosis	ICD-10-CM
M19.129	Post-traumatic osteoarthritis, unspecified elbow	Diagnosis	ICD-10-CM
M19.131	Post-traumatic osteoarthritis, right wrist	Diagnosis	ICD-10-CM
M19.132	Post-traumatic osteoarthritis, left wrist	Diagnosis	ICD-10-CM
M19.139	Post-traumatic osteoarthritis, unspecified wrist	Diagnosis	ICD-10-CM
M19.141	Post-traumatic osteoarthritis, right hand	Diagnosis	ICD-10-CM
M19.142	Post-traumatic osteoarthritis, left hand	Diagnosis	ICD-10-CM
M19.149	Post-traumatic osteoarthritis, unspecified hand	Diagnosis	ICD-10-CM
M19.171	Post-traumatic osteoarthritis, right ankle and foot	Diagnosis	ICD-10-CM
M19.172	Post-traumatic osteoarthritis, left ankle and foot	Diagnosis	ICD-10-CM
M19.179	Post-traumatic osteoarthritis, unspecified ankle and foot	Diagnosis	ICD-10-CM
M19.19	Post-traumatic osteoarthritis, other specified site	Diagnosis	ICD-10-CM
M19.211	Secondary osteoarthritis, right shoulder	Diagnosis	ICD-10-CM
M19.212	Secondary osteoarthritis, left shoulder	Diagnosis	ICD-10-CM
M19.219	Secondary osteoarthritis, unspecified shoulder	Diagnosis	ICD-10-CM
M19.221	Secondary osteoarthritis, right elbow	Diagnosis	ICD-10-CM
M19.222	Secondary osteoarthritis, left elbow	Diagnosis	ICD-10-CM
M19.229	Secondary osteoarthritis, unspecified elbow	Diagnosis	ICD-10-CM
M19.231	Secondary osteoarthritis, right wrist	Diagnosis	ICD-10-CM
M19.232	Secondary osteoarthritis, left wrist	Diagnosis	ICD-10-CM
M19.239	Secondary osteoarthritis, unspecified wrist	Diagnosis	ICD-10-CM
M19.241	Secondary osteoarthritis, right hand	Diagnosis	ICD-10-CM
M19.242	Secondary osteoarthritis, left hand	Diagnosis	ICD-10-CM
M19.249	Secondary osteoarthritis, unspecified hand	Diagnosis	ICD-10-CM
M19.271	Secondary osteoarthritis, right ankle and foot	Diagnosis	ICD-10-CM
M19.272	Secondary osteoarthritis, left ankle and foot	Diagnosis	ICD-10-CM
M19.279	Secondary osteoarthritis, unspecified ankle and foot	Diagnosis	ICD-10-CM
M19.29	Secondary osteoarthritis, other specified site	Diagnosis	ICD-10-CM
M19.90	Unspecified osteoarthritis, unspecified site	Diagnosis	ICD-10-CM
M19.91	Primary osteoarthritis, unspecified site	Diagnosis	ICD-10-CM
M19.92	Post-traumatic osteoarthritis, unspecified site	Diagnosis	ICD-10-CM
M19.93	Secondary osteoarthritis, unspecified site	Diagnosis	ICD-10-CM
M45.0	Ankylosing spondylitis of multiple sites in spine	Diagnosis	ICD-10-CM
M45.1	Ankylosing spondylitis of occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M45.2	Ankylosing spondylitis of cervical region	Diagnosis	ICD-10-CM
M45.3	Ankylosing spondylitis of cervicothoracic region	Diagnosis	ICD-10-CM
M45.4	Ankylosing spondylitis of thoracic region	Diagnosis	ICD-10-CM
M45.5	Ankylosing spondylitis of thoracolumbar region	Diagnosis	ICD-10-CM
M45.6	Ankylosing spondylitis lumbar region	Diagnosis	ICD-10-CM
M45.7	Ankylosing spondylitis of lumbosacral region	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M45.8	Ankylosing spondylitis sacral and sacrococcygeal region	Diagnosis	ICD-10-CM
M45.9	Ankylosing spondylitis of unspecified sites in spine	Diagnosis	ICD-10-CM
M45.A0	Non-radiographic axial spondyloarthritis of unspecified sites in spine	Diagnosis	ICD-10-CM
M45.A1	Non-radiographic axial spondyloarthritis of occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M45.A2	Non-radiographic axial spondyloarthritis of cervical region	Diagnosis	ICD-10-CM
M45.A3	Non-radiographic axial spondyloarthritis of cervicothoracic region	Diagnosis	ICD-10-CM
M45.A4	Non-radiographic axial spondyloarthritis of thoracic region	Diagnosis	ICD-10-CM
M45.A5	Non-radiographic axial spondyloarthritis of thoracolumbar region	Diagnosis	ICD-10-CM
M45.A6	Non-radiographic axial spondyloarthritis of lumbar region	Diagnosis	ICD-10-CM
M45.A7	Non-radiographic axial spondyloarthritis of lumbosacral region	Diagnosis	ICD-10-CM
M45.A8	Non-radiographic axial spondyloarthritis of sacral and sacrococcygeal region	Diagnosis	ICD-10-CM
M45.AB	Non-radiographic axial spondyloarthritis of multiple sites in spine	Diagnosis	ICD-10-CM
M46.80	Other specified inflammatory spondylopathies, site unspecified	Diagnosis	ICD-10-CM
M46.81	Other specified inflammatory spondylopathies, occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M46.82	Other specified inflammatory spondylopathies, cervical region	Diagnosis	ICD-10-CM
M46.83	Other specified inflammatory spondylopathies, cervicothoracic region	Diagnosis	ICD-10-CM
M46.84	Other specified inflammatory spondylopathies, thoracic region	Diagnosis	ICD-10-CM
M46.85	Other specified inflammatory spondylopathies, thoracolumbar region	Diagnosis	ICD-10-CM
M46.86	Other specified inflammatory spondylopathies, lumbar region	Diagnosis	ICD-10-CM
M46.87	Other specified inflammatory spondylopathies, lumbosacral region	Diagnosis	ICD-10-CM
M46.88	Other specified inflammatory spondylopathies, sacral and sacrococcygeal region	Diagnosis	ICD-10-CM
M46.89	Other specified inflammatory spondylopathies, multiple sites in spine	Diagnosis	ICD-10-CM
M46.90	Unspecified inflammatory spondylopathy, site unspecified	Diagnosis	ICD-10-CM
M46.91	Unspecified inflammatory spondylopathy, occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M46.92	Unspecified inflammatory spondylopathy, cervical region	Diagnosis	ICD-10-CM
M46.93	Unspecified inflammatory spondylopathy, cervicothoracic region	Diagnosis	ICD-10-CM
M46.94	Unspecified inflammatory spondylopathy, thoracic region	Diagnosis	ICD-10-CM
M46.95	Unspecified inflammatory spondylopathy, thoracolumbar region	Diagnosis	ICD-10-CM
M46.96	Unspecified inflammatory spondylopathy, lumbar region	Diagnosis	ICD-10-CM
M46.97	Unspecified inflammatory spondylopathy, lumbosacral region	Diagnosis	ICD-10-CM
M46.98	Unspecified inflammatory spondylopathy, sacral and sacrococcygeal region	Diagnosis	ICD-10-CM
M46.99	Unspecified inflammatory spondylopathy, multiple sites in spine	Diagnosis	ICD-10-CM
M47.011	Anterior spinal artery compression syndromes, occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M47.012	Anterior spinal artery compression syndromes, cervical region	Diagnosis	ICD-10-CM
M47.013	Anterior spinal artery compression syndromes, cervicothoracic region	Diagnosis	ICD-10-CM
M47.014	Anterior spinal artery compression syndromes, thoracic region	Diagnosis	ICD-10-CM
M47.015	Anterior spinal artery compression syndromes, thoracolumbar region	Diagnosis	ICD-10-CM
M47.016	Anterior spinal artery compression syndromes, lumbar region	Diagnosis	ICD-10-CM
M47.019	Anterior spinal artery compression syndromes, site unspecified	Diagnosis	ICD-10-CM
M47.021	Vertebral artery compression syndromes, occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M47.022	Vertebral artery compression syndromes, cervical region	Diagnosis	ICD-10-CM
M47.029	Vertebral artery compression syndromes, site unspecified	Diagnosis	ICD-10-CM
M47.10	Other spondylosis with myelopathy, site unspecified	Diagnosis	ICD-10-CM
M47.11	Other spondylosis with myelopathy, occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M47.12	Other spondylosis with myelopathy, cervical region	Diagnosis	ICD-10-CM
M47.13	Other spondylosis with myelopathy, cervicothoracic region	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
M47.14	Other spondylosis with myelopathy, thoracic region	Diagnosis	ICD-10-CM
M47.15	Other spondylosis with myelopathy, thoracolumbar region	Diagnosis	ICD-10-CM
M47.16	Other spondylosis with myelopathy, lumbar region	Diagnosis	ICD-10-CM
M47.20	Other spondylosis with radiculopathy, site unspecified	Diagnosis	ICD-10-CM
M47.21	Other spondylosis with radiculopathy, occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M47.22	Other spondylosis with radiculopathy, cervical region	Diagnosis	ICD-10-CM
M47.23	Other spondylosis with radiculopathy, cervicothoracic region	Diagnosis	ICD-10-CM
M47.24	Other spondylosis with radiculopathy, thoracic region	Diagnosis	ICD-10-CM
M47.25	Other spondylosis with radiculopathy, thoracolumbar region	Diagnosis	ICD-10-CM
M47.26	Other spondylosis with radiculopathy, lumbar region	Diagnosis	ICD-10-CM
M47.27	Other spondylosis with radiculopathy, lumbosacral region	Diagnosis	ICD-10-CM
M47.28	Other spondylosis with radiculopathy, sacral and sacrococcygeal region	Diagnosis	ICD-10-CM
M47.811	Spondylosis without myelopathy or radiculopathy, occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M47.812	Spondylosis without myelopathy or radiculopathy, cervical region	Diagnosis	ICD-10-CM
M47.813	Spondylosis without myelopathy or radiculopathy, cervicothoracic region	Diagnosis	ICD-10-CM
M47.814	Spondylosis without myelopathy or radiculopathy, thoracic region	Diagnosis	ICD-10-CM
M47.815	Spondylosis without myelopathy or radiculopathy, thoracolumbar region	Diagnosis	ICD-10-CM
M47.816	Spondylosis without myelopathy or radiculopathy, lumbar region	Diagnosis	ICD-10-CM
M47.817	Spondylosis without myelopathy or radiculopathy, lumbosacral region	Diagnosis	ICD-10-CM
M47.818	Spondylosis without myelopathy or radiculopathy, sacral and sacrococcygeal region	Diagnosis	ICD-10-CM
M47.819	Spondylosis without myelopathy or radiculopathy, site unspecified	Diagnosis	ICD-10-CM
M47.891	Other spondylosis, occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M47.892	Other spondylosis, cervical region	Diagnosis	ICD-10-CM
M47.893	Other spondylosis, cervicothoracic region	Diagnosis	ICD-10-CM
M47.894	Other spondylosis, thoracic region	Diagnosis	ICD-10-CM
M47.895	Other spondylosis, thoracolumbar region	Diagnosis	ICD-10-CM
M47.896	Other spondylosis, lumbar region	Diagnosis	ICD-10-CM
M47.897	Other spondylosis, lumbosacral region	Diagnosis	ICD-10-CM
M47.898	Other spondylosis, sacral and sacrococcygeal region	Diagnosis	ICD-10-CM
M47.899	Other spondylosis, site unspecified	Diagnosis	ICD-10-CM
M47.9	Spondylosis, unspecified	Diagnosis	ICD-10-CM
M48.8X1	Other specified spondylopathies, occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M48.8X2	Other specified spondylopathies, cervical region	Diagnosis	ICD-10-CM
M48.8X3	Other specified spondylopathies, cervicothoracic region	Diagnosis	ICD-10-CM
M48.8X4	Other specified spondylopathies, thoracic region	Diagnosis	ICD-10-CM
M48.8X5	Other specified spondylopathies, thoracolumbar region	Diagnosis	ICD-10-CM
M48.8X6	Other specified spondylopathies, lumbar region	Diagnosis	ICD-10-CM
M48.8X7	Other specified spondylopathies, lumbosacral region	Diagnosis	ICD-10-CM
M48.8X8	Other specified spondylopathies, sacral and sacrococcygeal region	Diagnosis	ICD-10-CM
M48.8X9	Other specified spondylopathies, site unspecified	Diagnosis	ICD-10-CM
Stroke or Transient Ischemic Attack			
G45.0	Vertebro-basilar artery syndrome	Diagnosis	ICD-10-CM
G45.1	Carotid artery syndrome (hemispheric)	Diagnosis	ICD-10-CM
G45.2	Multiple and bilateral precerebral artery syndromes	Diagnosis	ICD-10-CM
G45.3	Amaurosis fugax	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
G45.8	Other transient cerebral ischemic attacks and related syndromes	Diagnosis	ICD-10-CM
G45.9	Transient cerebral ischemic attack, unspecified	Diagnosis	ICD-10-CM
G46.0	Middle cerebral artery syndrome	Diagnosis	ICD-10-CM
G46.1	Anterior cerebral artery syndrome	Diagnosis	ICD-10-CM
G46.2	Posterior cerebral artery syndrome	Diagnosis	ICD-10-CM
G46.3	Brain stem stroke syndrome	Diagnosis	ICD-10-CM
G46.4	Cerebellar stroke syndrome	Diagnosis	ICD-10-CM
G46.5	Pure motor lacunar syndrome	Diagnosis	ICD-10-CM
G46.6	Pure sensory lacunar syndrome	Diagnosis	ICD-10-CM
G46.7	Other lacunar syndromes	Diagnosis	ICD-10-CM
G46.8	Other vascular syndromes of brain in cerebrovascular diseases	Diagnosis	ICD-10-CM
G97.31	Intraoperative hemorrhage and hematoma of a nervous system organ or structure complicating a nervous system procedure	Diagnosis	ICD-10-CM
G97.32	Intraoperative hemorrhage and hematoma of a nervous system organ or structure complicating other procedure	Diagnosis	ICD-10-CM
I60.00	Nontraumatic subarachnoid hemorrhage from unspecified carotid siphon and bifurcation	Diagnosis	ICD-10-CM
I60.01	Nontraumatic subarachnoid hemorrhage from right carotid siphon and bifurcation	Diagnosis	ICD-10-CM
I60.02	Nontraumatic subarachnoid hemorrhage from left carotid siphon and bifurcation	Diagnosis	ICD-10-CM
I60.10	Nontraumatic subarachnoid hemorrhage from unspecified middle cerebral artery	Diagnosis	ICD-10-CM
I60.11	Nontraumatic subarachnoid hemorrhage from right middle cerebral artery	Diagnosis	ICD-10-CM
I60.12	Nontraumatic subarachnoid hemorrhage from left middle cerebral artery	Diagnosis	ICD-10-CM
I60.2	Nontraumatic subarachnoid hemorrhage from anterior communicating artery	Diagnosis	ICD-10-CM
I60.20	Nontraumatic subarachnoid hemorrhage from unspecified anterior communicating artery	Diagnosis	ICD-10-CM
I60.21	Nontraumatic subarachnoid hemorrhage from right anterior communicating artery	Diagnosis	ICD-10-CM
I60.22	Nontraumatic subarachnoid hemorrhage from left anterior communicating artery	Diagnosis	ICD-10-CM
I60.30	Nontraumatic subarachnoid hemorrhage from unspecified posterior communicating artery	Diagnosis	ICD-10-CM
I60.31	Nontraumatic subarachnoid hemorrhage from right posterior communicating artery	Diagnosis	ICD-10-CM
I60.32	Nontraumatic subarachnoid hemorrhage from left posterior communicating artery	Diagnosis	ICD-10-CM
I60.4	Nontraumatic subarachnoid hemorrhage from basilar artery	Diagnosis	ICD-10-CM
I60.50	Nontraumatic subarachnoid hemorrhage from unspecified vertebral artery	Diagnosis	ICD-10-CM
I60.51	Nontraumatic subarachnoid hemorrhage from right vertebral artery	Diagnosis	ICD-10-CM
I60.52	Nontraumatic subarachnoid hemorrhage from left vertebral artery	Diagnosis	ICD-10-CM
I60.6	Nontraumatic subarachnoid hemorrhage from other intracranial arteries	Diagnosis	ICD-10-CM
I60.7	Nontraumatic subarachnoid hemorrhage from unspecified intracranial artery	Diagnosis	ICD-10-CM
I60.8	Other nontraumatic subarachnoid hemorrhage	Diagnosis	ICD-10-CM
I60.9	Nontraumatic subarachnoid hemorrhage, unspecified	Diagnosis	ICD-10-CM
I61.0	Nontraumatic intracerebral hemorrhage in hemisphere, subcortical	Diagnosis	ICD-10-CM
I61.1	Nontraumatic intracerebral hemorrhage in hemisphere, cortical	Diagnosis	ICD-10-CM
I61.2	Nontraumatic intracerebral hemorrhage in hemisphere, unspecified	Diagnosis	ICD-10-CM
I61.3	Nontraumatic intracerebral hemorrhage in brain stem	Diagnosis	ICD-10-CM
I61.4	Nontraumatic intracerebral hemorrhage in cerebellum	Diagnosis	ICD-10-CM
I61.5	Nontraumatic intracerebral hemorrhage, intraventricular	Diagnosis	ICD-10-CM
I61.6	Nontraumatic intracerebral hemorrhage, multiple localized	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
I61.8	Other nontraumatic intracerebral hemorrhage	Diagnosis	ICD-10-CM
I61.9	Nontraumatic intracerebral hemorrhage, unspecified	Diagnosis	ICD-10-CM
I62.00	Nontraumatic subdural hemorrhage, unspecified	Diagnosis	ICD-10-CM
I62.01	Nontraumatic acute subdural hemorrhage	Diagnosis	ICD-10-CM
I62.02	Nontraumatic subacute subdural hemorrhage	Diagnosis	ICD-10-CM
I62.9	Nontraumatic intracranial hemorrhage, unspecified	Diagnosis	ICD-10-CM
I63.00	Cerebral infarction due to thrombosis of unspecified precerebral artery	Diagnosis	ICD-10-CM
I63.011	Cerebral infarction due to thrombosis of right vertebral artery	Diagnosis	ICD-10-CM
I63.012	Cerebral infarction due to thrombosis of left vertebral artery	Diagnosis	ICD-10-CM
I63.013	Cerebral infarction due to thrombosis of bilateral vertebral arteries	Diagnosis	ICD-10-CM
I63.019	Cerebral infarction due to thrombosis of unspecified vertebral artery	Diagnosis	ICD-10-CM
I63.02	Cerebral infarction due to thrombosis of basilar artery	Diagnosis	ICD-10-CM
I63.031	Cerebral infarction due to thrombosis of right carotid artery	Diagnosis	ICD-10-CM
I63.032	Cerebral infarction due to thrombosis of left carotid artery	Diagnosis	ICD-10-CM
I63.033	Cerebral infarction due to thrombosis of bilateral carotid arteries	Diagnosis	ICD-10-CM
I63.039	Cerebral infarction due to thrombosis of unspecified carotid artery	Diagnosis	ICD-10-CM
I63.09	Cerebral infarction due to thrombosis of other precerebral artery	Diagnosis	ICD-10-CM
I63.10	Cerebral infarction due to embolism of unspecified precerebral artery	Diagnosis	ICD-10-CM
I63.111	Cerebral infarction due to embolism of right vertebral artery	Diagnosis	ICD-10-CM
I63.112	Cerebral infarction due to embolism of left vertebral artery	Diagnosis	ICD-10-CM
I63.113	Cerebral infarction due to embolism of bilateral vertebral arteries	Diagnosis	ICD-10-CM
I63.119	Cerebral infarction due to embolism of unspecified vertebral artery	Diagnosis	ICD-10-CM
I63.12	Cerebral infarction due to embolism of basilar artery	Diagnosis	ICD-10-CM
I63.131	Cerebral infarction due to embolism of right carotid artery	Diagnosis	ICD-10-CM
I63.132	Cerebral infarction due to embolism of left carotid artery	Diagnosis	ICD-10-CM
I63.133	Cerebral infarction due to embolism of bilateral carotid arteries	Diagnosis	ICD-10-CM
I63.139	Cerebral infarction due to embolism of unspecified carotid artery	Diagnosis	ICD-10-CM
I63.19	Cerebral infarction due to embolism of other precerebral artery	Diagnosis	ICD-10-CM
I63.20	Cerebral infarction due to unspecified occlusion or stenosis of unspecified precerebral arteries	Diagnosis	ICD-10-CM
I63.211	Cerebral infarction due to unspecified occlusion or stenosis of right vertebral artery	Diagnosis	ICD-10-CM
I63.212	Cerebral infarction due to unspecified occlusion or stenosis of left vertebral artery	Diagnosis	ICD-10-CM
I63.213	Cerebral infarction due to unspecified occlusion or stenosis of bilateral vertebral arteries	Diagnosis	ICD-10-CM
I63.219	Cerebral infarction due to unspecified occlusion or stenosis of unspecified vertebral artery	Diagnosis	ICD-10-CM
I63.22	Cerebral infarction due to unspecified occlusion or stenosis of basilar artery	Diagnosis	ICD-10-CM
I63.231	Cerebral infarction due to unspecified occlusion or stenosis of right carotid arteries	Diagnosis	ICD-10-CM
I63.232	Cerebral infarction due to unspecified occlusion or stenosis of left carotid arteries	Diagnosis	ICD-10-CM
I63.233	Cerebral infarction due to unspecified occlusion or stenosis of bilateral carotid arteries	Diagnosis	ICD-10-CM
I63.239	Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid artery	Diagnosis	ICD-10-CM
I63.29	Cerebral infarction due to unspecified occlusion or stenosis of other precerebral arteries	Diagnosis	ICD-10-CM
I63.30	Cerebral infarction due to thrombosis of unspecified cerebral artery	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
I63.311	Cerebral infarction due to thrombosis of right middle cerebral artery	Diagnosis	ICD-10-CM
I63.312	Cerebral infarction due to thrombosis of left middle cerebral artery	Diagnosis	ICD-10-CM
I63.313	Cerebral infarction due to thrombosis of bilateral middle cerebral arteries	Diagnosis	ICD-10-CM
I63.319	Cerebral infarction due to thrombosis of unspecified middle cerebral artery	Diagnosis	ICD-10-CM
I63.321	Cerebral infarction due to thrombosis of right anterior cerebral artery	Diagnosis	ICD-10-CM
I63.322	Cerebral infarction due to thrombosis of left anterior cerebral artery	Diagnosis	ICD-10-CM
I63.323	Cerebral infarction due to thrombosis of bilateral anterior cerebral arteries	Diagnosis	ICD-10-CM
I63.329	Cerebral infarction due to thrombosis of unspecified anterior cerebral artery	Diagnosis	ICD-10-CM
I63.331	Cerebral infarction due to thrombosis of right posterior cerebral artery	Diagnosis	ICD-10-CM
I63.332	Cerebral infarction due to thrombosis of left posterior cerebral artery	Diagnosis	ICD-10-CM
I63.333	Cerebral infarction due to thrombosis of bilateral posterior cerebral arteries	Diagnosis	ICD-10-CM
I63.339	Cerebral infarction due to thrombosis of unspecified posterior cerebral artery	Diagnosis	ICD-10-CM
I63.341	Cerebral infarction due to thrombosis of right cerebellar artery	Diagnosis	ICD-10-CM
I63.342	Cerebral infarction due to thrombosis of left cerebellar artery	Diagnosis	ICD-10-CM
I63.343	Cerebral infarction due to thrombosis of bilateral cerebellar arteries	Diagnosis	ICD-10-CM
I63.349	Cerebral infarction due to thrombosis of unspecified cerebellar artery	Diagnosis	ICD-10-CM
I63.39	Cerebral infarction due to thrombosis of other cerebral artery	Diagnosis	ICD-10-CM
I63.40	Cerebral infarction due to embolism of unspecified cerebral artery	Diagnosis	ICD-10-CM
I63.411	Cerebral infarction due to embolism of right middle cerebral artery	Diagnosis	ICD-10-CM
I63.412	Cerebral infarction due to embolism of left middle cerebral artery	Diagnosis	ICD-10-CM
I63.413	Cerebral infarction due to embolism of bilateral middle cerebral arteries	Diagnosis	ICD-10-CM
I63.419	Cerebral infarction due to embolism of unspecified middle cerebral artery	Diagnosis	ICD-10-CM
I63.421	Cerebral infarction due to embolism of right anterior cerebral artery	Diagnosis	ICD-10-CM
I63.422	Cerebral infarction due to embolism of left anterior cerebral artery	Diagnosis	ICD-10-CM
I63.423	Cerebral infarction due to embolism of bilateral anterior cerebral arteries	Diagnosis	ICD-10-CM
I63.429	Cerebral infarction due to embolism of unspecified anterior cerebral artery	Diagnosis	ICD-10-CM
I63.431	Cerebral infarction due to embolism of right posterior cerebral artery	Diagnosis	ICD-10-CM
I63.432	Cerebral infarction due to embolism of left posterior cerebral artery	Diagnosis	ICD-10-CM
I63.433	Cerebral infarction due to embolism of bilateral posterior cerebral arteries	Diagnosis	ICD-10-CM
I63.439	Cerebral infarction due to embolism of unspecified posterior cerebral artery	Diagnosis	ICD-10-CM
I63.441	Cerebral infarction due to embolism of right cerebellar artery	Diagnosis	ICD-10-CM
I63.442	Cerebral infarction due to embolism of left cerebellar artery	Diagnosis	ICD-10-CM
I63.443	Cerebral infarction due to embolism of bilateral cerebellar arteries	Diagnosis	ICD-10-CM
I63.449	Cerebral infarction due to embolism of unspecified cerebellar artery	Diagnosis	ICD-10-CM
I63.49	Cerebral infarction due to embolism of other cerebral artery	Diagnosis	ICD-10-CM
I63.50	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery	Diagnosis	ICD-10-CM
I63.511	Cerebral infarction due to unspecified occlusion or stenosis of right middle cerebral artery	Diagnosis	ICD-10-CM
I63.512	Cerebral infarction due to unspecified occlusion or stenosis of left middle cerebral artery	Diagnosis	ICD-10-CM
I63.513	Cerebral infarction due to unspecified occlusion or stenosis of bilateral middle cerebral arteries	Diagnosis	ICD-10-CM
I63.519	Cerebral infarction due to unspecified occlusion or stenosis of unspecified middle cerebral artery	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
I63.521	Cerebral infarction due to unspecified occlusion or stenosis of right anterior cerebral artery	Diagnosis	ICD-10-CM
I63.522	Cerebral infarction due to unspecified occlusion or stenosis of left anterior cerebral artery	Diagnosis	ICD-10-CM
I63.523	Cerebral infarction due to unspecified occlusion or stenosis of bilateral anterior cerebral arteries	Diagnosis	ICD-10-CM
I63.529	Cerebral infarction due to unspecified occlusion or stenosis of unspecified anterior cerebral artery	Diagnosis	ICD-10-CM
I63.531	Cerebral infarction due to unspecified occlusion or stenosis of right posterior cerebral artery	Diagnosis	ICD-10-CM
I63.532	Cerebral infarction due to unspecified occlusion or stenosis of left posterior cerebral artery	Diagnosis	ICD-10-CM
I63.533	Cerebral infarction due to unspecified occlusion or stenosis of bilateral posterior cerebral arteries	Diagnosis	ICD-10-CM
I63.539	Cerebral infarction due to unspecified occlusion or stenosis of unspecified posterior cerebral artery	Diagnosis	ICD-10-CM
I63.541	Cerebral infarction due to unspecified occlusion or stenosis of right cerebellar artery	Diagnosis	ICD-10-CM
I63.542	Cerebral infarction due to unspecified occlusion or stenosis of left cerebellar artery	Diagnosis	ICD-10-CM
I63.543	Cerebral infarction due to unspecified occlusion or stenosis of bilateral cerebellar arteries	Diagnosis	ICD-10-CM
I63.549	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebellar artery	Diagnosis	ICD-10-CM
I63.59	Cerebral infarction due to unspecified occlusion or stenosis of other cerebral artery	Diagnosis	ICD-10-CM
I63.6	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic	Diagnosis	ICD-10-CM
I63.8	Other cerebral infarction	Diagnosis	ICD-10-CM
I63.81	Other cerebral infarction due to occlusion or stenosis of small artery	Diagnosis	ICD-10-CM
I63.89	Other cerebral infarction	Diagnosis	ICD-10-CM
I63.9	Cerebral infarction, unspecified	Diagnosis	ICD-10-CM
I66.01	Occlusion and stenosis of right middle cerebral artery	Diagnosis	ICD-10-CM
I66.02	Occlusion and stenosis of left middle cerebral artery	Diagnosis	ICD-10-CM
I66.03	Occlusion and stenosis of bilateral middle cerebral arteries	Diagnosis	ICD-10-CM
I66.09	Occlusion and stenosis of unspecified middle cerebral artery	Diagnosis	ICD-10-CM
I66.11	Occlusion and stenosis of right anterior cerebral artery	Diagnosis	ICD-10-CM
I66.12	Occlusion and stenosis of left anterior cerebral artery	Diagnosis	ICD-10-CM
I66.13	Occlusion and stenosis of bilateral anterior cerebral arteries	Diagnosis	ICD-10-CM
I66.19	Occlusion and stenosis of unspecified anterior cerebral artery	Diagnosis	ICD-10-CM
I66.21	Occlusion and stenosis of right posterior cerebral artery	Diagnosis	ICD-10-CM
I66.22	Occlusion and stenosis of left posterior cerebral artery	Diagnosis	ICD-10-CM
I66.23	Occlusion and stenosis of bilateral posterior cerebral arteries	Diagnosis	ICD-10-CM
I66.29	Occlusion and stenosis of unspecified posterior cerebral artery	Diagnosis	ICD-10-CM
I66.3	Occlusion and stenosis of cerebellar arteries	Diagnosis	ICD-10-CM
I66.8	Occlusion and stenosis of other cerebral arteries	Diagnosis	ICD-10-CM
I66.9	Occlusion and stenosis of unspecified cerebral artery	Diagnosis	ICD-10-CM
I67.841	Reversible cerebrovascular vasoconstriction syndrome	Diagnosis	ICD-10-CM
I67.848	Other cerebrovascular vasospasm and vasoconstriction	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
I67.89	Other cerebrovascular disease	Diagnosis	ICD-10-CM
I97.810	Intraoperative cerebrovascular infarction during cardiac surgery	Diagnosis	ICD-10-CM
I97.811	Intraoperative cerebrovascular infarction during other surgery	Diagnosis	ICD-10-CM
I97.820	Postprocedural cerebrovascular infarction following cardiac surgery	Diagnosis	ICD-10-CM
I97.821	Postprocedural cerebrovascular infarction following other surgery	Diagnosis	ICD-10-CM
Breast Cancer			
C50.011	Malignant neoplasm of nipple and areola, right female breast	Diagnosis	ICD-10-CM
C50.012	Malignant neoplasm of nipple and areola, left female breast	Diagnosis	ICD-10-CM
C50.019	Malignant neoplasm of nipple and areola, unspecified female breast	Diagnosis	ICD-10-CM
C50.021	Malignant neoplasm of nipple and areola, right male breast	Diagnosis	ICD-10-CM
C50.022	Malignant neoplasm of nipple and areola, left male breast	Diagnosis	ICD-10-CM
C50.029	Malignant neoplasm of nipple and areola, unspecified male breast	Diagnosis	ICD-10-CM
C50.111	Malignant neoplasm of central portion of right female breast	Diagnosis	ICD-10-CM
C50.112	Malignant neoplasm of central portion of left female breast	Diagnosis	ICD-10-CM
C50.119	Malignant neoplasm of central portion of unspecified female breast	Diagnosis	ICD-10-CM
C50.121	Malignant neoplasm of central portion of right male breast	Diagnosis	ICD-10-CM
C50.122	Malignant neoplasm of central portion of left male breast	Diagnosis	ICD-10-CM
C50.129	Malignant neoplasm of central portion of unspecified male breast	Diagnosis	ICD-10-CM
C50.211	Malignant neoplasm of upper-inner quadrant of right female breast	Diagnosis	ICD-10-CM
C50.212	Malignant neoplasm of upper-inner quadrant of left female breast	Diagnosis	ICD-10-CM
C50.219	Malignant neoplasm of upper-inner quadrant of unspecified female breast	Diagnosis	ICD-10-CM
C50.221	Malignant neoplasm of upper-inner quadrant of right male breast	Diagnosis	ICD-10-CM
C50.222	Malignant neoplasm of upper-inner quadrant of left male breast	Diagnosis	ICD-10-CM
C50.229	Malignant neoplasm of upper-inner quadrant of unspecified male breast	Diagnosis	ICD-10-CM
C50.311	Malignant neoplasm of lower-inner quadrant of right female breast	Diagnosis	ICD-10-CM
C50.312	Malignant neoplasm of lower-inner quadrant of left female breast	Diagnosis	ICD-10-CM
C50.319	Malignant neoplasm of lower-inner quadrant of unspecified female breast	Diagnosis	ICD-10-CM
C50.321	Malignant neoplasm of lower-inner quadrant of right male breast	Diagnosis	ICD-10-CM
C50.322	Malignant neoplasm of lower-inner quadrant of left male breast	Diagnosis	ICD-10-CM
C50.329	Malignant neoplasm of lower-inner quadrant of unspecified male breast	Diagnosis	ICD-10-CM
C50.411	Malignant neoplasm of upper-outer quadrant of right female breast	Diagnosis	ICD-10-CM
C50.412	Malignant neoplasm of upper-outer quadrant of left female breast	Diagnosis	ICD-10-CM
C50.419	Malignant neoplasm of upper-outer quadrant of unspecified female breast	Diagnosis	ICD-10-CM
C50.421	Malignant neoplasm of upper-outer quadrant of right male breast	Diagnosis	ICD-10-CM
C50.422	Malignant neoplasm of upper-outer quadrant of left male breast	Diagnosis	ICD-10-CM
C50.429	Malignant neoplasm of upper-outer quadrant of unspecified male breast	Diagnosis	ICD-10-CM
C50.511	Malignant neoplasm of lower-outer quadrant of right female breast	Diagnosis	ICD-10-CM
C50.512	Malignant neoplasm of lower-outer quadrant of left female breast	Diagnosis	ICD-10-CM
C50.519	Malignant neoplasm of lower-outer quadrant of unspecified female breast	Diagnosis	ICD-10-CM
C50.521	Malignant neoplasm of lower-outer quadrant of right male breast	Diagnosis	ICD-10-CM
C50.522	Malignant neoplasm of lower-outer quadrant of left male breast	Diagnosis	ICD-10-CM
C50.529	Malignant neoplasm of lower-outer quadrant of unspecified male breast	Diagnosis	ICD-10-CM
C50.611	Malignant neoplasm of axillary tail of right female breast	Diagnosis	ICD-10-CM
C50.612	Malignant neoplasm of axillary tail of left female breast	Diagnosis	ICD-10-CM
C50.619	Malignant neoplasm of axillary tail of unspecified female breast	Diagnosis	ICD-10-CM
C50.621	Malignant neoplasm of axillary tail of right male breast	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
C50.622	Malignant neoplasm of axillary tail of left male breast	Diagnosis	ICD-10-CM
C50.629	Malignant neoplasm of axillary tail of unspecified male breast	Diagnosis	ICD-10-CM
C50.811	Malignant neoplasm of overlapping sites of right female breast	Diagnosis	ICD-10-CM
C50.812	Malignant neoplasm of overlapping sites of left female breast	Diagnosis	ICD-10-CM
C50.819	Malignant neoplasm of overlapping sites of unspecified female breast	Diagnosis	ICD-10-CM
C50.821	Malignant neoplasm of overlapping sites of right male breast	Diagnosis	ICD-10-CM
C50.822	Malignant neoplasm of overlapping sites of left male breast	Diagnosis	ICD-10-CM
C50.829	Malignant neoplasm of overlapping sites of unspecified male breast	Diagnosis	ICD-10-CM
C50.911	Malignant neoplasm of unspecified site of right female breast	Diagnosis	ICD-10-CM
C50.912	Malignant neoplasm of unspecified site of left female breast	Diagnosis	ICD-10-CM
C50.919	Malignant neoplasm of unspecified site of unspecified female breast	Diagnosis	ICD-10-CM
C50.921	Malignant neoplasm of unspecified site of right male breast	Diagnosis	ICD-10-CM
C50.922	Malignant neoplasm of unspecified site of left male breast	Diagnosis	ICD-10-CM
C50.929	Malignant neoplasm of unspecified site of unspecified male breast	Diagnosis	ICD-10-CM
D05.00	Lobular carcinoma in situ of unspecified breast	Diagnosis	ICD-10-CM
D05.01	Lobular carcinoma in situ of right breast	Diagnosis	ICD-10-CM
D05.02	Lobular carcinoma in situ of left breast	Diagnosis	ICD-10-CM
D05.10	Intraductal carcinoma in situ of unspecified breast	Diagnosis	ICD-10-CM
D05.11	Intraductal carcinoma in situ of right breast	Diagnosis	ICD-10-CM
D05.12	Intraductal carcinoma in situ of left breast	Diagnosis	ICD-10-CM
D05.80	Other specified type of carcinoma in situ of unspecified breast	Diagnosis	ICD-10-CM
D05.81	Other specified type of carcinoma in situ of right breast	Diagnosis	ICD-10-CM
D05.82	Other specified type of carcinoma in situ of left breast	Diagnosis	ICD-10-CM
D05.90	Unspecified type of carcinoma in situ of unspecified breast	Diagnosis	ICD-10-CM
D05.91	Unspecified type of carcinoma in situ of right breast	Diagnosis	ICD-10-CM
D05.92	Unspecified type of carcinoma in situ of left breast	Diagnosis	ICD-10-CM
Z17.0	Estrogen receptor positive status [ER+]	Diagnosis	ICD-10-CM
Z17.1	Estrogen receptor negative status [ER-]	Diagnosis	ICD-10-CM
Z19.1	Hormone sensitive malignancy status	Diagnosis	ICD-10-CM
Z19.2	Hormone resistant malignancy status	Diagnosis	ICD-10-CM
Z85.3	Personal history of malignant neoplasm of breast	Diagnosis	ICD-10-CM
Z86.000	Personal history of in-situ neoplasm of breast	Diagnosis	ICD-10-CM
Colorectal Cancer			
C18.0	Malignant neoplasm of cecum	Diagnosis	ICD-10-CM
C18.1	Malignant neoplasm of appendix	Diagnosis	ICD-10-CM
C18.2	Malignant neoplasm of ascending colon	Diagnosis	ICD-10-CM
C18.3	Malignant neoplasm of hepatic flexure	Diagnosis	ICD-10-CM
C18.4	Malignant neoplasm of transverse colon	Diagnosis	ICD-10-CM
C18.5	Malignant neoplasm of splenic flexure	Diagnosis	ICD-10-CM
C18.6	Malignant neoplasm of descending colon	Diagnosis	ICD-10-CM
C18.7	Malignant neoplasm of sigmoid colon	Diagnosis	ICD-10-CM
C18.8	Malignant neoplasm of overlapping sites of colon	Diagnosis	ICD-10-CM
C18.9	Malignant neoplasm of colon, unspecified	Diagnosis	ICD-10-CM
C19	Malignant neoplasm of rectosigmoid junction	Diagnosis	ICD-10-CM
C20	Malignant neoplasm of rectum	Diagnosis	ICD-10-CM
C49.A4	Gastrointestinal stromal tumor of large intestine	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
C49.A5	Gastrointestinal stromal tumor of rectum	Diagnosis	ICD-10-CM
D01.0	Carcinoma in situ of colon	Diagnosis	ICD-10-CM
D01.1	Carcinoma in situ of rectosigmoid junction	Diagnosis	ICD-10-CM
D01.2	Carcinoma in situ of rectum	Diagnosis	ICD-10-CM
Z85.030	Personal history of malignant carcinoid tumor of large intestine	Diagnosis	ICD-10-CM
Z85.038	Personal history of other malignant neoplasm of large intestine	Diagnosis	ICD-10-CM
Z85.040	Personal history of malignant carcinoid tumor of rectum	Diagnosis	ICD-10-CM
Z85.048	Personal history of other malignant neoplasm of rectum, rectosigmoid junction, and anus	Diagnosis	ICD-10-CM
Prostate Cancer			
C61	Malignant neoplasm of prostate	Diagnosis	ICD-10-CM
D07.5	Carcinoma in situ of prostate	Diagnosis	ICD-10-CM
Z85.46	Personal history of malignant neoplasm of prostate	Diagnosis	ICD-10-CM
Lung Cancer			
C34.00	Malignant neoplasm of unspecified main bronchus	Diagnosis	ICD-10-CM
C34.01	Malignant neoplasm of right main bronchus	Diagnosis	ICD-10-CM
C34.02	Malignant neoplasm of left main bronchus	Diagnosis	ICD-10-CM
C34.10	Malignant neoplasm of upper lobe, unspecified bronchus or lung	Diagnosis	ICD-10-CM
C34.11	Malignant neoplasm of upper lobe, right bronchus or lung	Diagnosis	ICD-10-CM
C34.12	Malignant neoplasm of upper lobe, left bronchus or lung	Diagnosis	ICD-10-CM
C34.2	Malignant neoplasm of middle lobe, bronchus or lung	Diagnosis	ICD-10-CM
C34.30	Malignant neoplasm of lower lobe, unspecified bronchus or lung	Diagnosis	ICD-10-CM
C34.31	Malignant neoplasm of lower lobe, right bronchus or lung	Diagnosis	ICD-10-CM
C34.32	Malignant neoplasm of lower lobe, left bronchus or lung	Diagnosis	ICD-10-CM
C34.80	Malignant neoplasm of overlapping sites of unspecified bronchus and lung	Diagnosis	ICD-10-CM
C34.81	Malignant neoplasm of overlapping sites of right bronchus and lung	Diagnosis	ICD-10-CM
C34.82	Malignant neoplasm of overlapping sites of left bronchus and lung	Diagnosis	ICD-10-CM
C34.90	Malignant neoplasm of unspecified part of unspecified bronchus or lung	Diagnosis	ICD-10-CM
C34.91	Malignant neoplasm of unspecified part of right bronchus or lung	Diagnosis	ICD-10-CM
C34.92	Malignant neoplasm of unspecified part of left bronchus or lung	Diagnosis	ICD-10-CM
D02.20	Carcinoma in situ of unspecified bronchus and lung	Diagnosis	ICD-10-CM
D02.21	Carcinoma in situ of right bronchus and lung	Diagnosis	ICD-10-CM
D02.22	Carcinoma in situ of left bronchus and lung	Diagnosis	ICD-10-CM
Z85.110	Personal history of malignant carcinoid tumor of bronchus and lung	Diagnosis	ICD-10-CM
Z85.118	Personal history of other malignant neoplasm of bronchus and lung	Diagnosis	ICD-10-CM
Endometrial Cancer			
C54.0	Malignant neoplasm of isthmus uteri	Diagnosis	ICD-10-CM
C54.1	Malignant neoplasm of endometrium	Diagnosis	ICD-10-CM
C54.2	Malignant neoplasm of myometrium	Diagnosis	ICD-10-CM
C54.3	Malignant neoplasm of fundus uteri	Diagnosis	ICD-10-CM
C54.8	Malignant neoplasm of overlapping sites of corpus uteri	Diagnosis	ICD-10-CM
C54.9	Malignant neoplasm of corpus uteri, unspecified	Diagnosis	ICD-10-CM
D07.0	Carcinoma in situ of endometrium	Diagnosis	ICD-10-CM
Z85.42	Personal history of malignant neoplasm of other parts of uterus	Diagnosis	ICD-10-CM
Urologic Cancer			
C64.1	Malignant neoplasm of right kidney, except renal pelvis	Diagnosis	ICD-10-CM

Appendix G. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Covariates in this Request

Code	Description	Code	Code Type
C64.2	Malignant neoplasm of left kidney, except renal pelvis	Diagnosis	ICD-10-CM
C64.9	Malignant neoplasm of unspecified kidney, except renal pelvis	Diagnosis	ICD-10-CM
C65.1	Malignant neoplasm of right renal pelvis	Diagnosis	ICD-10-CM
C65.2	Malignant neoplasm of left renal pelvis	Diagnosis	ICD-10-CM
C65.9	Malignant neoplasm of unspecified renal pelvis	Diagnosis	ICD-10-CM
C66.1	Malignant neoplasm of right ureter	Diagnosis	ICD-10-CM
C66.2	Malignant neoplasm of left ureter	Diagnosis	ICD-10-CM
C66.9	Malignant neoplasm of unspecified ureter	Diagnosis	ICD-10-CM
C68.8	Malignant neoplasm of overlapping sites of urinary organs	Diagnosis	ICD-10-CM
C68.9	Malignant neoplasm of urinary organ, unspecified	Diagnosis	ICD-10-CM
D09.10	Carcinoma in situ of unspecified urinary organ	Diagnosis	ICD-10-CM
D09.19	Carcinoma in situ of other urinary organs	Diagnosis	ICD-10-CM
Z85.520	Personal history of malignant carcinoid tumor of kidney	Diagnosis	ICD-10-CM
Z85.528	Personal history of other malignant neoplasm of kidney	Diagnosis	ICD-10-CM
Z85.53	Personal history of malignant neoplasm of renal pelvis	Diagnosis	ICD-10-CM
Z85.54	Personal history of malignant neoplasm of ureter	Diagnosis	ICD-10-CM
Z85.59	Personal history of malignant neoplasm of other urinary tract organ	Diagnosis	ICD-10-CM

Appendix H. Specifications Defining Parameters for this Request

SOC is using the CIDA tool [version 12.1.2] to replicate a known positive association between ACE inhibitors and angioedema using beta blockers as a comparator, in Market Scan and CMS data from pandemic years to understand how pandemic-related changes in healthcare utilization impact a known positive association.

Query Period: 5/22/2018-12/11/2019 (Pre-Pandemic)
Coverage Requirement: Medical & Drug Coverage
Pre-index enrollment requirement: Varies; see below
Post-index enrollment requirement: N/A
Post-episode requirement for T2 analyses : N/A
Enrollment gap: 45
Restrictions: Demographic: M/F sex
Age groups: 18-44, 45-64, and ≥ 65
Stratifications: Year
Censor output categorization: N/A
Envelope macro: Reclassify encounters
Never-exposed cohort: N/A
Distribution of index-defining codes: N/A
Freeze data: Yes

	SCENARIO 1.1 (PRE-PANDEMIC) <i>short lookback</i>		SCENARIO 1.2 (PRE-PANDEMIC) <i>long lookback</i>	
Pre-index enrollment requirement:	183		365	
Group	r1_acei	r1_bb	r4_acei	r4_bb
Drug/Exposure				
Index Exposure/Comparator	ACEi	Beta Blockers	ACEi	Beta Blockers
Cohort Definition	First valid exposure episodes during query period		First valid exposure episodes during query period	
Stockpiling	See stockpiling tab		See stockpiling tab	
Build Episodes on Point Exposure?	No		No	
Treatment Episode Gap	14		14	
Exposure episode extension	14		14	
Minimum days supplied	1		1	
Incidence Criteria Care Setting	N/A		N/A	
Principal Diagnosis Position	N/A		N/A	
Forced supply to attach to dispensings	N/A		N/A	
Create Baseline Table?	Yes		Yes	

Appendix H. Specifications Defining Parameters for this Request

	SCENARIO 1.1 (PRE-PANDEMIC) <i>short lookback</i>	SCENARIO 1.2 (PRE-PANDEMIC) <i>long lookback</i>
Inclusion/Exclusion Criteria		
Inclusion/Exclusion group	Aliskiren, ARBs, ACEi, beta	Aliskiren, ARBs, ACEi, beta
Type of criteria	Exclusion	Exclusion
Evaluation Period Start	-183	-365
Evaluation Period End	-1	-1
Care Setting/PDX	N/A	N/A
Principal Diagnosis Position	N/A	N/A
Exclude evidence of days supply if inclusion/exclusion evaluation period includes dispensings	Evaluation period should search for evidence of days supply	Evaluation period should search for evidence of days supply
Number of instances the criteria should be found in the evaluation period	1	1
Minimum Days Supplied	1	1
Minimum cumulative dose	N/A	N/A
Minimum average filled daily dose	N/A	N/A
Maximum average filled daily dose	N/A	N/A
Minimum current filled daily dose	N/A	N/A
Maximum current filled daily dose	N/A	N/A
Forced supply to attach to dispensings	N/A	N/A
Inclusion/Exclusion group	Angioedema DX	Angioedema DX
Type of criteria	Exclusion	Exclusion
Evaluation Period Start	-183	-365
Evaluation Period End	-1	-1
Care Setting/PDX	Any	Any
Principal Diagnosis Position	Any	Any
Exclude evidence of days supply if inclusion/exclusion evaluation period includes dispensings	N/A	N/A
Number of instances the criteria should be found in the evaluation period	1	1
At Risk Time		
Minimum exposure episode duration	0	0
Maximum exposure episode duration (MAXEPISDUR)	90	90

Appendix H. Specifications Defining Parameters for this Request

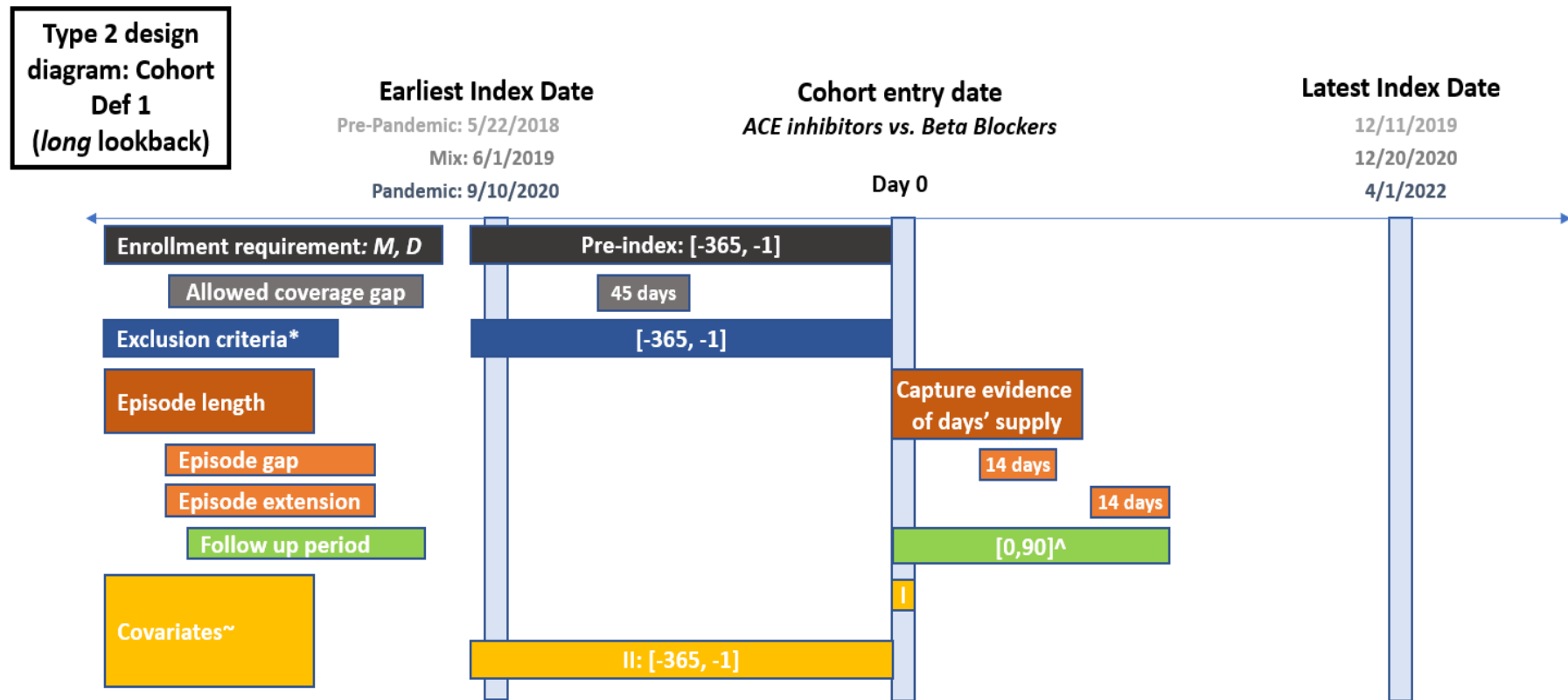
	SCENARIO 1.1 (PRE-PANDEMIC) <i>short lookback</i>	SCENARIO 1.2 (PRE-PANDEMIC) <i>long lookback</i>
Risk window interval start	0	0
Censor treatment episode at evidence of:	DP end date; death; | DP end date; death;	DP end date; death; | DP end date; death;
Blackout Period		
Event/Outcome		
Event/Outcome	Angioedema DX	Angioedema DX
Care Setting	IP, ED, AV	IP, ED, AV
Principal Diagnosis Position	Any	Any
Exclude evidence of days supply if event washout includes dispensings	N/A	N/A
Event de-duplication	De-duplicates occurrences of the same event code	De-duplicates occurrences of the same event
Forced supply to attach to dispensings	N/A	N/A
Propensity Score Model Parameters		
PS Model Label	ps_r1_base, ps_r1_adj (includes YEAR)	ps_r4_base, ps_r4_adj (includes YEAR)
Covariates	Age; sex; see also Covariates, Utilization, & Comorbidity tabs	Age; sex; see also Covariates, Utilization, & Comorbidity tabs
Firth Logistic Intercept Correct (FLIC) Method	No	No
High-dimensional Propensity Score	No	No
Output Kaplan Meier Plot	Yes	Yes
PS Stratification		
Stratif. Comparison Identifier	r1_strat_base, r1_strat_adj	r4_strat_base, r4_strat_adj
Percentiles	5	5
PS Trimming Indicator	0 (Trim Non-Overlap)	0 (Trim Non-Overlap)
Percentile Distribution Indicator	0 (Overall)	0 (Overall)
PS Matching		
PS Comparison Identifier	r1_fixed_base, r1_fixed_adj	r4_fixed_base, r4_fixed_adj
Ratio Type	Fixed ratio matching	Fixed ratio matching
Matching Ratio	1:1	1:1
Matching Caliper Settings	0.025	0.025
Analysis Type	Conditional and unconditional	Conditional and unconditional
Subgroup Analyses		
Stratifying variable	Calendar year	Calendar year
Subgroup Categories	Year	Year

Appendix H. Specifications Defining Parameters for this Request

	SCENARIO 3.1 (PANDEMIC) <i>short lookback</i>	SCENARIO 3.2 (PANDEMIC) <i>long lookback</i>
Firth Logistic Intercept Correct (FLIC) Method	No	No
Re-estimate Propensity Score within subgroup level	No	No
Should subgroup re-matching be restricted to the matched population	Yes	Yes

ICD-9-CM, HCPCS, and CPT codes are provided by Optum360. NDC codes are checked against First Data Bank's "National Drug Data File (NDDF®) Plus."

Appendix I. Diagrams Detailing the Design of the Request



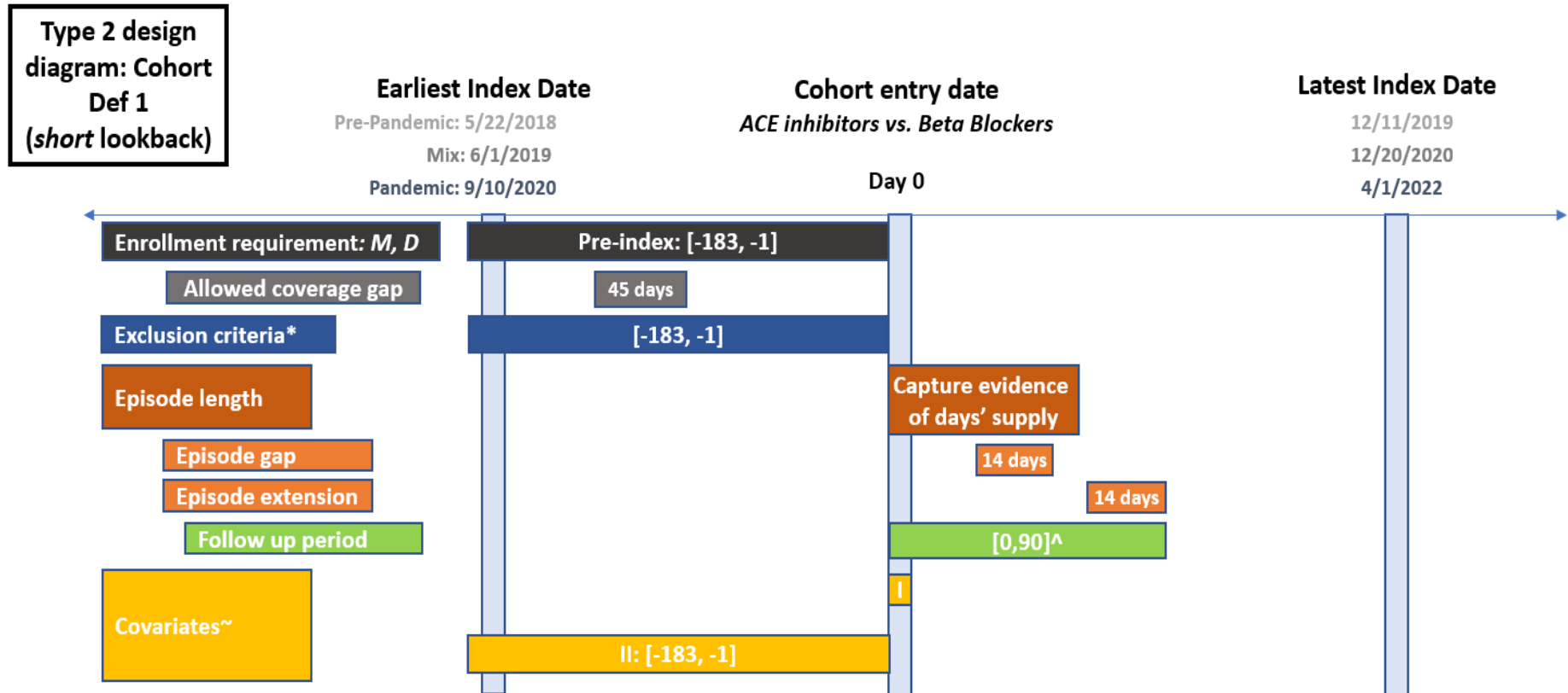
* **Exclusion Criteria:** Aliskiren, ARBs, ACE inhibitors/beta blockers; angioedema

^ **The follow up period** begins on the day of the index date and ends at the earliest occurrence of the end of at-risk time; angioedema; comparator drug, aliskiren, or ARBs; disenrollment; Data Partner end date; or death.

~ **Covariates:** Window I: Age, sex, year, race

Window II: History of: allergic reaction, diabetes, heart failure, ischemic heart disease, NSAID use; Comorbidity Score; Drug Utilization (dispensings, unique generics); Medical Utilization (IP hospital stays, non-acute institutional stays, ED visits, AV visits, OA visits), CCW conditions (acquired hypothyroidism, acute myocardial infarction, Alzheimer's disease & related disorders or senile dementia, anemia, asthma, atrial fibrillation, benign prostatic hyperplasia, cancer (breast, colorectal, endometrial, lung, prostate), cataract, chronic kidney disease, chronic obstructive pulmonary disease & bronchiectasis, depression, glaucoma, hip/pelvic fracture, hyperlipidemia, hypertension, osteoporosis, rheumatoid arthritis/osteoarthritis, stroke/transient ischemic attack)

Appendix I. Diagrams Detailing the Design of the Request



* **Exclusion Criteria:** Aliskiren, ARBs, ACE inhibitors/beta blockers; angioedema

^ **The follow up period** begins on the day of the index date and ends at the earliest occurrence of the end of at-risk time; angioedema; comparator drug, aliskiren, or ARBs; disenrollment; Data Partner end date; or death.

~ **Covariates:** Window I: Age, sex, year, race

Window II: History of: allergic reaction, diabetes, heart failure, ischemic heart disease, NSAID use; Comorbidity Score; Drug Utilization (dispensings, unique generics); Medical Utilization (IP hospital stays, non-acute institutional stays, ED visits, AV visits, OA visits), CCW conditions (acquired hypothyroidism, acute myocardial infarction, Alzheimer's disease & related disorders or senile dementia, anemia, asthma, atrial fibrillation, benign prostatic hyperplasia, cancer (breast, colorectal, endometrial, lung, prostate), cataract, chronic kidney disease, chronic obstructive pulmonary disease & bronchiectasis, depression, glaucoma, hip/pelvic fracture, hyperlipidemia, hypertension, osteoporosis, rheumatoid arthritis/osteoarthritis, stroke/transient ischemic attack)