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The following report(s) provides findings from an FDA-initiated query using Sentinel. While Sentinel queries may be undertaken to assess potential medical product safety risks, they may also be initiated for various other reasons. Some examples include determining a rate or count of an identified health outcome of interest, examining medical product use, exploring the feasibility of future, more detailed analyses within Sentinel, and seeking to better understand Sentinel capabilities.

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_mpl1r_wp163

Request ID: cder_mpl1r_wp163_nsdp_v01

Request Description: We examined utilization of incident N-Nitrosodimethylamine (NDMA) and N-Nitrosodiethylamine (NDEA) contaminated valsartan products, as well as angiotensin-converting enzyme (ACE) inhibitors, other angiotensin II receptor blockers (ARBs) excluding valsartan, and calcium channel blockers (CCB) in the Sentinel Distributed Database (SDD). This is Report 2 of 2. Report 1 examined the utilization and switching patterns among prevalent users of NDMA and NDEA contaminated, uncontaminated, and recalled not contaminated valsartan products.

Sentinel Routine Querying Module: Cohort Identification and Descriptive Analysis (CIDA) module, version 8.1.1

Data Source: The study period spanned from January 1, 2010 to April 30, 2019. We distributed the analytic package to 16 Data Partners (DP) on October 14, 2019. Please see Appendix A for a list of the dates of available data for each DP included in this report.

Study Design: We identified new users of valsartan, ACE inhibitors, other ARBs, and CCB among a cohort who were at least 18 years of age. This is a Type 2 analysis in the Query Request Package (QRP) documentation.

Exposures: We defined the exposures of interest as valsartan, ACE inhibitors, ARBs, and CCB using outpatient dispensing data and National Drug Codes (NDCs). Valsartan NDCs were separated into several groupings: any valsartan, recalled valsartan NDCs, recalled valsartan NDCs that tested negative for contamination, contaminated valsartan (tested positive) NDCs, NDMA-contaminated valsartan (tested positive for NDMA) NDCs, NDEA-contaminated valsartan (tested positive for NDEA) NDCs, uncontaminated (tested negative) or non-recalled valsartan NDCs, uncontaminated valsartan (tested negative) NDCs, and non-recalled valsartan NDCs. Please see Appendix B for a list of generic and brand names of medical products used to define exposures. Cohort re-entry was allowed. We required no evidence of the exposure in the 365 days prior to dispensing date to identify incident exposure episodes for each cohort.

Cohort Eligibility Criteria: We required members to be enrolled in health plans with medical and drug coverage in the 365 days prior to their index date in order to be included in the cohort; a gap in coverage of up to 45 days was allowed and treated as continuous enrollment. We included the following age groups in the cohorts: 18-44, 45-64, and 65+ years.

Follow-up Time: Follow-up time began on the day of first dispensing and continued for the duration of the exposure episode. Exposure episode lengths were defined using outpatient pharmacy dispensing days supplied to create a sequence of continuous exposure. Exposure episodes were considered continuous if gaps in days supplied were 15 days or less. An episode extension of 15 days was added to the end of each exposure episode. Follow-up continued until the first occurrence of any of the following: 1) disenrollment; 2) recorded death; 3) end of exposure episode; 4) end of query period.

Baseline Characteristics: We assessed the following characteristics in the 365 days prior to and including the index date: age, year, sex, race, ethnicity, diabetes, heart failure, hypertension, and renal disorders. We defined baseline characteristics using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) diagnosis codes. Please see Appendix C for a list of codes used to define baseline characteristics in this request.

Please see Appendix D for the specifications of parameters used in this request.

Limitations: Algorithms to define exposures 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.

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

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).

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.

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

Table 1a. Aggregated Baseline Characteristics for Members Dispensed Valsartan in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019

Characteristic¹	Number	
Number of episodes	1,459,043	
Number of unique patients	1,402,196	
Demographics	Mean	Standard Deviation
Mean Age (Years)	68.3	11.4
	Number	Percent
Age (Years)		
18-44	92,223	6.3%
45-64	399,362	27.4%
65+	967,458	66.3%
Sex		
Female	786,455	56.1%
Male	615,702	43.9%
Other	39	0.0%
Race		
Unknown	426,960	30.4%
American Indian or Alaska Native	3,082	0.2%
Asian	41,152	2.9%
Black or African American	158,278	11.3%
Native Hawaiian or Other Pacific Islander	1,678	0.1%
White	771,046	55.0%
Hispanic Origin	41,507	3.0%
Year		
2010	90,778	6.2%
2011	207,151	14.2%
2012	150,997	10.3%
2013	130,485	8.9%
2014	108,400	7.4%
2015	141,225	9.7%
2016	203,841	14.0%
2017	237,740	16.3%
2018	186,946	12.8%
2019	1,480	0.1%
Distribution of index-defining generic names:	Number	Percent
Recalled valsartan	468,131	32.1%
Contaminated valsartan: tested positive	80,476	5.5%
N-Nitrosodimethylamine (NDMA)-contaminated valsartan: tested positive	57,140	3.9%
N-Nitrosodiethylamine (NDEA)-contaminated valsartan: tested positive	31,465	2.2%
Recalled valsartan not contaminated	387,730	26.6%
Uncontaminated valsartan OR non-recalled valsartan	991,724	68.0%
Uncontaminated valsartan: tested negative	128,799	8.8%
Non-recalled valsartan	863,155	59.2%

Table 1a. Aggregated Baseline Characteristics for Members Dispensed Valsartan in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019

Recorded history of:	Number	Percent
Heart failure	313,369	21.5%
Diabetes	590,966	40.5%
Hypertension	1,389,852	95.3%
Renal disorders	389,200	26.7%

¹All metrics are based on total number of episodes per group, except for sex which is based on total number of unique members.

Table 1b. Aggregated Baseline Characteristics for Members Dispensed Angiotensin-Converting-Enzyme (ACE) Inhibitors in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019

Characteristic¹	Number	
Number of episodes	9,906,500	
Number of unique patients	9,081,684	
Demographics	Mean	Standard Deviation
Mean Age (Years)	64.3	12.9
Age (Years)	Number	Percent
18-44	1,154,194	11.7%
45-64	3,460,022	34.9%
65+	5,292,284	53.4%
Sex		
Female	4,639,853	51.1%
Male	4,441,576	48.9%
Other	255	0.0%
Race		
Unknown	3,077,738	33.9%
American Indian or Alaska Native	45,411	0.5%
Asian	185,761	2.0%
Black or African American	793,308	8.7%
Native Hawaiian or Other Pacific Islander	21,869	0.2%
White	4,957,597	54.6%
Hispanic Origin	277,672	3.1%
Year		
2010	594,982	6.0%
2011	1,302,804	13.2%
2012	1,193,639	12.0%
2013	1,213,335	12.2%
2014	1,210,601	12.2%
2015	1,160,486	11.7%
2016	1,158,202	11.7%
2017	1,077,798	10.9%
2018	978,091	9.9%
2019	16,562	0.2%
Distribution of index-defining generic names:	Number	Percent
Amlodipine besylate/benazepril HCl	171,448	1.7%
Benazepril HCl	261,844	2.6%
Benazepril HCl/hydrochlorothiazide	40,258	0.4%
Captopril	30,387	0.3%
Captopril/hydrochlorothiazide	1,111	0.0%
Enalaprilat dihydrate	18	0.0%
Enalapril maleate	361,111	3.6%
Enalapril maleate/hydrochlorothiazide	20,682	0.2%
Fosinopril sodium	20,256	0.2%
Fosinopril sodium/hydrochlorothiazide	1,067	0.0%

Table 1b. Aggregated Baseline Characteristics for Members Dispensed Angiotensin-Converting-Enzyme (ACE) Inhibitors in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019

Distribution of index-defining generic names:	Number	Percent
Lisinopril	7,390,526	74.6%
Lisinopril/dietary supplement	*****	*****
Lisinopril/hydrochlorothiazide	1,271,769	12.8%
Moexipril HCl	1,418	0.0%
Moexipril HCl/hydrochlorothiazide	1,103	0.0%
Perindopril arginine/amlodipine besylate	84	0.0%
Perindopril erbumine	2,721	0.0%
Quinapril HCl	54,093	0.5%
Quinapril HCl/hydrochlorothiazide	4,922	0.0%
Ramipril	271,446	2.7%
Trandolapril	4,394	0.0%
Trandolapril/verapamil HCl	1,173	0.0%
Recorded history of:		
Heart failure	1,460,127	14.7%
Diabetes	3,527,945	35.6%
Hypertension	8,709,574	87.9%
Renal disorders	2,023,985	20.4%

¹All metrics are based on total number of episodes per group, except for sex which is based on total number of unique members.

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 1c. Aggregated Baseline Characteristics for Members Dispensed Calcium Channel Blockers in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019

Characteristic¹	Number	
Number of episodes	9,525,715	
Number of unique patients	8,687,851	
Demographics	Mean	Standard Deviation
Mean Age (Years)	68.6	12.7
	Number	Percent
Age (Years)		
18-44	735,646	7.7%
45-64	2,385,133	25.0%
65+	6,404,936	67.2%
Sex		
Female	4,999,256	57.5%
Male	3,688,374	42.5%
Other	221	0.0%
Race		
Unknown	2,195,807	25.3%
American Indian or Alaska Native	36,153	0.4%
Asian	214,681	2.5%
Black or African American	1,004,350	11.6%
Native Hawaiian or Other Pacific Islander	17,423	0.2%
White	5,219,437	60.1%
Hispanic Origin	230,158	2.6%
Year		
2010	366,067	3.8%
2011	1,004,806	10.5%
2012	1,036,310	10.9%
2013	1,063,747	11.2%
2014	1,092,876	11.5%
2015	1,178,565	12.4%
2016	1,227,328	12.9%
2017	1,254,622	13.2%
2018	1,284,080	13.5%
2019	17,314	0.2%
Distribution of index-defining generic names:	Number	Percent
Amlodipine besylate	7,533,314	79.1%
Clevidipine butyrate	*****	*****
Diltiazem HCl	1,176,092	12.3%
Felodipine	38,001	0.4%
Isradipine	2,303	0.0%
Nicardipine HCl	2,170	0.0%
Nicardipine in sodium chloride, iso-osmotic	*****	*****
Nifedipine	478,715	5.0%
Nimodipine	4,375	0.0%
Nisoldipine	3,797	0.0%
Verapamil HCl	293,202	3.1%

Table 1c. Aggregated Baseline Characteristics for Members Dispensed Calcium Channel Blockers in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019

Recorded history of:	Number	Percent
Heart failure	1,510,347	15.9%
Diabetes	3,348,630	35.2%
Hypertension	8,801,562	92.4%
Renal disorders	2,894,687	30.4%

¹All metrics are based on total number of episodes per group, except for sex which is based on total number of unique members.

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 1d. Aggregated Baseline Characteristics for Members Dispensed Angiotensin II Receptor Blockers (ARBs) (Excluding Valsartan) in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019

Characteristic¹	Number	
Number of episodes	6,674,078	
Number of unique patients	6,260,004	
Demographics	Mean	Standard Deviation
Mean Age (Years)	68.6	11.3
Age (Years)	Number	Percent
18-44	400,430	6.0%
45-64	1,747,277	26.2%
65+	4,526,371	67.8%
Sex		
Female	3,645,540	58.2%
Male	2,614,299	41.8%
Other	165	0.0%
Race		
Unknown	1,713,679	27.4%
American Indian or Alaska Native	24,626	0.4%
Asian	214,085	3.4%
Black or African American	611,343	9.8%
Native Hawaiian or Other Pacific Islander	15,411	0.2%
White	3,680,860	58.8%
Hispanic Origin	184,607	2.9%
Year		
2010	207,239	3.1%
2011	657,669	9.9%
2012	688,785	10.3%
2013	723,345	10.8%
2014	757,237	11.3%
2015	721,060	10.8%
2016	714,224	10.7%
2017	735,206	11.0%
2018	1,457,051	21.8%
2019	12,262	0.2%
Distribution of index-defining generic names:	Number	Percent
Amlodipine besylate/olmesartan medoxomil	67,886	1.0%
Azilsartan medoxomil	20,424	0.3%
Azilsartan medoxomil/chlorthalidone	18,128	0.3%
Candesartan cilexetil	35,743	0.5%
Candesartan cilexetil/hydrochlorothiazide	6,565	0.1%
Eprosartan mesylate	418	0.0%
Eprosartan mesylate/hydrochlorothiazide	77	0.0%
Irbesartan	286,258	4.3%
Irbesartan/hydrochlorothiazide	62,748	0.9%
Losartan potassium	4,619,900	69.2%

Table 1d. Aggregated Baseline Characteristics for Members Dispensed Angiotensin II Receptor Blockers (ARBs) (Excluding Valsartan) in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019

Distribution of index-defining generic names:	Number	Percent
Losartan potassium/hydrochlorothiazide	928,732	13.9%
Olmesartan medoxomil	322,279	4.8%
Olmesartan medoxomil/amlodipine besylate/hydrochlorothiazide	35,862	0.5%
Olmesartan medoxomil/hydrochlorothiazide	163,476	2.4%
Telmisartan	78,105	1.2%
Telmisartan/amlodipine besylate	2,375	0.0%
Telmisartan/hydrochlorothiazide	28,198	0.4%
Recorded history of:		
Heart failure	954,388	14.3%
Diabetes	2,596,130	38.9%
Hypertension	6,299,954	94.4%
Renal disorders	1,630,644	24.4%

¹All metrics are based on total number of episodes per group, except for sex which is based on total number of unique members.

Table 2a. Summary of Incident Valsartan, Angiotensin-Converting Enzyme (ACE) Inhibitor, Calcium Channel Blocker, and other Angiotensin II Receptor Blocker (ARB) Episodes in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019

Episodes	Total Users	Eligible Members ¹	Users per 10,000 Eligible Members	Adjusted Dispensings	Raw Dispensings	Days Supplied	Amount Supplied
Exposures with a 365-Day Washout							
Recalled valsartan							
1,611,981	1,483,495	115,818,582	128.09	8,641,756	8,655,215	448,161,807	468,250,807
Recalled valsartan NOT contaminated							
1,307,449	1,211,710	115,921,203	104.53	6,657,233	6,669,082	341,401,331	362,132,633
Contaminated valsartan (tested positive)							
512,284	481,125	116,083,946	41.45	2,379,804	2,380,347	128,290,747	128,167,510
N-Nitrosodimethylamine (NDMA)-contaminated valsartan (tested positive)							
388,799	373,109	116,113,448	32.13	1,711,933	1,712,156	94,609,849	94,585,585
N-Nitrosodiethylamine (NDEA)-contaminated valsartan (tested positive)							
315,617	292,100	116,138,219	25.15	1,164,837	1,165,048	59,130,071	59,171,625
Uncontaminated valsartan (tested negative) OR non-recalled valsartan							
1,455,685	1,345,827	115,212,298	116.81	6,920,480	6,931,019	296,470,991	325,694,994
Uncontaminated valsartan (tested negative)							
543,348	500,055	115,997,841	43.11	2,626,862	2,627,100	114,178,809	114,268,624
Non-recalled valsartan							
1,513,473	1,387,247	115,451,216	120.16	6,865,666	6,878,508	295,126,157	326,446,033
ACE inhibitors							
9,906,500	9,081,684	104,369,073	870.15	59,399,488	59,497,021	2,719,076,405	2,927,918,453
Calcium channel blockers							
9,525,715	8,687,851	108,259,860	802.50	64,489,973	64,618,840	2,942,132,997	3,152,217,483
ARBs (excluding valsartan)							
6,674,078	6,260,004	111,426,222	561.81	48,194,997	48,265,291	2,360,086,238	2,450,135,726
Valsartan							
1,459,043	1,402,196	114,397,087	122.57	9,315,135	9,329,978	403,895,013	440,258,799

¹Eligible Members are reflective of the number of patients that met all cohort entry criteria on at least one day during the query period

Table 2b. Summary of Incident Valsartan, Angiotensin-Converting Enzyme (ACE) Inhibitor, Calcium Channel Blocker, and other Angiotensin II Receptor Blocker (ARB) Episodes in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019, by Year

Year	Episodes	Total Users	Eligible Members ¹	Users per 10,000 Eligible Members	Adjusted Dispensings	Raw Dispensings	Days Supplied	Amount Supplied
Exposures with a 365-Day Washout								
Recalled valsartan								
2010	0	0	28,122,437	0.00	0	0	0	0
2011	0	0	44,098,671	0.00	0	0	0	0
2012	111,498	111,498	48,912,788	22.80	815,807	816,079	38,189,031	38,569,313
2013	174,785	174,785	46,582,158	37.52	1,180,828	1,181,658	57,286,638	57,812,794
2014	90,489	90,489	49,759,411	18.19	400,477	400,974	20,883,465	21,108,305
2015	355,759	355,759	51,814,393	68.66	2,051,065	2,055,935	105,306,415	111,149,529
2016	433,512	433,512	58,216,850	74.47	2,572,333	2,576,496	144,423,027	152,477,840
2017	274,343	274,343	54,142,313	50.67	1,235,129	1,237,331	63,348,489	67,411,046
2018	170,981	170,981	51,486,783	33.21	385,487	386,109	18,714,185	19,711,124
2019	614	614	4,707,808	1.30	630	633	10,557	10,856
Recalled valsartan NOT contaminated								
2010	0	0	28,122,437	0.00	0	0	0	0
2011	0	0	44,098,671	0.00	0	0	0	0
2012	108,438	108,438	48,913,818	22.17	746,222	746,462	34,542,431	34,928,437
2013	155,585	155,585	46,587,234	33.40	1,003,030	1,003,750	48,534,387	49,075,959
2014	75,546	75,546	49,793,846	15.17	325,838	326,292	16,793,301	17,024,599
2015	256,014	256,014	51,870,825	49.36	1,409,808	1,414,056	72,527,272	78,177,421
2016	335,612	335,612	58,391,983	57.48	1,875,276	1,878,936	104,379,989	112,784,328
2017	229,055	229,055	54,394,468	42.11	975,358	977,319	49,318,898	53,649,764
2018	146,687	146,687	51,770,191	28.33	321,175	321,738	15,296,053	16,482,766
2019	512	512	4,733,166	1.08	526	529	9,000	9,358
Contaminated valsartan (tested positive)								
2010	0	0	28,122,437	0.00	0	0	0	0
2011	0	0	44,098,671	0.00	0	0	0	0
2012	3,286	3,286	48,925,569	0.67	10,767	10,767	883,614	879,736
2013	30,634	30,634	46,706,994	6.56	168,687	168,692	7,695,028	7,663,510
2014	29,881	29,881	50,010,252	5.97	103,520	103,539	5,927,746	5,905,111

Table 2b. Summary of Incident Valsartan, Angiotensin-Converting Enzyme (ACE) Inhibitor, Calcium Channel Blocker, and other Angiotensin II Receptor Blocker (ARB) Episodes in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019, by Year

Year	Episodes	Total Users	Eligible Members ¹	Users per 10,000 Eligible Members	Adjusted Dispensings	Raw Dispensings	Days Supplied	Amount Supplied
Contaminated valsartan (tested positive)								
2015	141,648	141,648	52,064,825	27.21	744,121	744,255	38,749,478	38,800,744
2016	145,241	145,241	58,682,108	24.75	811,339	811,547	46,221,591	46,121,690
2017	97,049	97,049	54,785,276	17.71	405,611	405,744	21,755,697	21,751,369
2018	64,347	64,347	52,170,617	12.33	135,555	135,599	7,054,114	7,041,888
2019	198	198	4,758,175	0.42	204	204	3,479	3,462
N-Nitrosodimethylamine (NDMA)-contaminated valsartan (tested positive)								
2010	0	0	28,122,437	0.00	0	0	0	0
2011	0	0	44,098,671	0.00	0	0	0	0
2012	0	0	48,926,630	0.00	0	0	0	0
2013	*****	*****	46,711,951	*****	90,778	90,778	4,286,093	4,268,678
2014	14,897	14,897	50,031,691	2.98	52,600	52,600	2,730,326	2,724,965
2015	75,403	75,403	52,099,912	14.47	356,390	356,411	19,470,662	19,563,605
2016	137,598	137,598	58,768,728	23.41	763,702	763,824	43,937,705	43,840,154
2017	88,087	88,087	54,859,325	16.06	335,539	335,603	18,033,854	18,040,394
2018	58,970	58,970	52,235,377	11.29	112,921	112,937	6,151,166	6,147,747
2019	*****	*****	4,761,824	*****	3	3	43	43
N-Nitrosodiethylamine (NDEA)-contaminated valsartan (tested positive)								
2010	0	0	28,122,437	0.00	0	0	0	0
2011	0	0	44,098,671	0.00	0	0	0	0
2012	3,286	3,286	48,925,569	0.67	10,705	10,705	878,491	874,613
2013	30,634	30,634	46,706,994	6.56	167,560	167,565	7,637,501	7,605,818
2014	29,881	29,881	50,010,252	5.97	101,339	101,356	5,810,919	5,788,620
2015	102,225	102,225	52,066,200	19.63	444,118	444,187	22,053,411	22,143,232
2016	47,564	47,564	58,750,855	8.10	180,221	180,275	9,155,973	9,167,171
2017	43,402	43,402	54,948,868	7.90	151,720	151,764	8,015,348	8,026,712
2018	58,323	58,323	52,372,575	11.14	108,866	108,888	5,573,147	5,560,174
2019	302	302	4,774,215	0.63	308	308	5,281	5,284

Table 2b. Summary of Incident Valsartan, Angiotensin-Converting Enzyme (ACE) Inhibitor, Calcium Channel Blocker, and other Angiotensin II Receptor Blocker (ARB) Episodes in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019, by Year

Year	Episodes	Total Users	Eligible Members ¹	Users per 10,000 Eligible Members	Adjusted Dispensings	Raw Dispensings	Days Supplied	Amount Supplied
Uncontaminated valsartan (tested negative) OR non-recalled valsartan								
2010	90,778	90,778	27,637,802	32.85	565,310	565,839	21,444,716	21,948,511
2011	207,151	207,151	42,638,076	48.58	1,535,891	1,539,152	59,909,459	62,406,846
2012	148,018	148,018	47,457,176	31.19	945,921	948,062	36,217,016	38,069,932
2013	120,111	120,111	45,508,117	26.39	694,536	695,720	27,164,669	28,532,475
2014	145,069	145,069	48,981,572	29.62	674,648	675,581	30,795,114	31,871,549
2015	151,889	151,889	51,190,089	29.67	608,612	609,377	28,650,886	30,437,077
2016	147,181	147,181	58,090,701	25.34	574,981	575,586	26,454,031	32,712,159
2017	209,902	209,902	54,639,075	38.42	805,028	805,651	41,457,403	49,754,483
2018	233,553	233,553	52,046,276	44.87	513,466	513,961	24,344,790	29,919,796
2019	2,033	2,033	4,740,701	4.29	2,087	2,090	32,907	42,166
Uncontaminated valsartan (tested negative)								
2010	32,382	32,382	28,014,372	11.56	193,971	193,983	7,515,014	7,456,683
2011	91,856	91,856	43,768,716	20.99	643,150	643,214	25,128,271	25,063,425
2012	86,316	86,316	48,574,131	17.77	501,321	501,371	20,670,420	20,568,528
2013	52,508	52,508	46,437,404	11.31	295,455	295,481	11,821,728	11,807,902
2014	44,875	44,875	49,794,289	9.01	183,679	183,706	8,226,688	8,215,870
2015	93,312	93,312	51,950,014	17.96	401,971	402,005	20,165,929	20,468,620
2016	45,791	45,791	58,695,302	7.80	162,777	162,788	8,073,283	8,080,308
2017	43,296	43,296	54,956,821	7.88	143,732	143,739	7,596,148	7,633,528
2018	52,466	52,466	52,384,356	10.02	100,255	100,262	4,972,137	4,964,574
2019	546	546	4,778,652	1.14	551	551	9,191	9,187
Non-recalled valsartan								
2010	92,205	92,205	27,739,146	33.24	535,071	535,724	20,736,522	21,292,230
2011	205,469	205,469	42,947,748	47.84	1,390,768	1,394,579	54,388,869	57,356,944
2012	185,019	185,019	47,777,583	38.73	1,082,482	1,085,300	42,258,848	44,681,188
2013	132,349	132,349	45,760,671	28.92	713,077	714,670	28,015,862	29,745,683
2014	195,388	195,388	49,218,685	39.70	826,852	828,107	38,292,303	39,613,171
2015	169,890	169,890	51,340,026	33.09	624,313	625,240	29,435,885	31,340,565

Table 2b. Summary of Incident Valsartan, Angiotensin-Converting Enzyme (ACE) Inhibitor, Calcium Channel Blocker, and other Angiotensin II Receptor Blocker (ARB) Episodes in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019, by Year

Year	Episodes	Total Users	Eligible Members ¹	Users per 10,000 Eligible Members	Adjusted Dispensings	Raw Dispensings	Days Supplied	Amount Supplied
Non-recalled valsartan								
2017	187,552	187,552	54,727,241	34.27	715,444	716,099	36,659,181	45,020,429
2018	200,598	200,598	52,124,403	38.48	445,344	445,844	20,954,205	26,598,840
2019	1,687	1,687	4,746,851	3.55	1,733	1,736	27,145	36,478
ACE inhibitors								
2010	594,982	594,982	25,446,043	233.82	3,658,660	3,662,569	166,528,838	179,249,182
2011	1,302,804	1,302,804	36,866,687	353.38	9,805,999	9,822,380	438,672,386	478,122,391
2012	1,193,639	1,193,639	40,843,105	292.25	8,607,412	8,621,006	389,936,359	423,182,245
2013	1,213,335	1,213,335	39,021,007	310.94	8,436,666	8,449,431	388,454,330	420,039,533
2014	1,210,601	1,210,601	41,661,310	290.58	8,130,311	8,143,716	374,891,285	403,563,888
2015	1,160,486	1,160,486	43,517,027	266.67	7,145,022	7,157,087	332,633,416	356,079,647
2016	1,158,202	1,158,202	49,467,507	234.13	6,320,033	6,331,958	296,286,577	318,141,803
2017	1,077,798	1,077,798	46,258,879	232.99	4,716,099	4,725,569	220,302,834	232,917,814
2018	978,091	978,091	43,999,746	222.29	2,560,855	2,564,853	110,923,343	116,174,498
2019	16,562	16,562	3,768,049	43.95	18,431	18,452	447,037	447,452
Calcium channel blockers								
2010	366,067	366,067	26,768,915	136.75	2,766,358	2,771,455	129,097,706	138,909,500
2011	1,004,806	1,004,806	39,331,705	255.47	9,123,212	9,141,668	402,180,777	431,359,157
2012	1,036,310	1,036,310	43,491,973	238.28	9,259,574	9,277,402	418,568,591	448,067,300
2013	1,063,747	1,063,747	41,347,612	257.27	8,944,564	8,962,287	406,469,919	436,308,869
2014	1,092,876	1,092,876	44,028,803	248.22	8,494,467	8,511,101	394,318,651	423,141,180
2015	1,178,565	1,178,565	45,847,746	257.06	8,533,431	8,550,563	399,141,185	427,223,229
2016	1,227,328	1,227,328	51,834,466	236.78	7,660,596	7,677,094	358,676,447	383,567,901
2017	1,254,622	1,254,622	48,215,537	260.21	6,125,696	6,138,392	283,585,787	303,335,773
2018	1,284,080	1,284,080	45,543,661	281.94	3,562,927	3,569,697	149,691,135	159,871,154
2019	17,314	17,314	3,967,505	43.64	19,148	19,181	402,799	433,421

Table 2b. Summary of Incident Valsartan, Angiotensin-Converting Enzyme (ACE) Inhibitor, Calcium Channel Blocker, and other Angiotensin II Receptor Blocker (ARB) Episodes in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019, by Year

Year	Episodes	Total Users	Eligible Members ¹	Users per 10,000 Eligible Members	Adjusted Dispensings	Raw Dispensings	Days Supplied	Amount Supplied
ARBs (excluding valsartan)								
2010	207,239	207,239	27,321,598	75.85	1,758,891	1,760,125	83,113,117	87,730,743
2011	657,669	657,669	42,000,390	156.59	7,019,879	7,027,160	336,996,520	350,336,949
2012	688,785	688,785	46,203,182	149.08	7,135,854	7,143,718	344,505,643	358,520,987
2013	723,345	723,345	43,750,573	165.33	7,051,410	7,059,600	342,967,913	356,385,244
2014	757,237	757,237	46,351,995	163.37	6,744,684	6,754,170	338,491,795	351,095,041
2015	721,060	721,060	47,967,475	150.32	5,837,193	5,846,627	294,484,661	305,149,240
2016	714,224	714,224	54,017,064	132.22	4,892,472	4,904,375	244,589,652	253,585,393
2017	735,206	735,206	50,299,601	146.17	3,785,392	3,793,403	189,064,886	195,779,378
2018	1,457,051	1,457,051	47,529,365	306.56	3,955,653	3,962,537	185,560,277	191,240,790
2019	12,262	12,262	4,152,206	29.53	13,569	13,576	311,774	311,960
Valsartan								
2010	90,778	90,778	27,637,802	32.85	599,062	599,617	22,945,994	23,492,968
2011	207,151	207,151	42,638,076	48.58	1,720,094	1,723,563	68,476,350	71,269,282
2012	150,997	150,997	47,456,562	31.82	1,155,701	1,158,155	45,810,835	48,002,563
2013	130,485	130,485	45,428,014	28.72	981,033	982,556	40,788,742	42,554,405
2014	108,400	108,400	48,757,846	22.23	772,351	773,508	34,375,160	35,947,126
2015	141,225	141,225	50,962,299	27.71	1,033,633	1,035,125	48,700,101	52,127,641
2016	203,841	203,841	57,639,092	35.37	1,338,194	1,340,042	64,518,189	73,254,999
2017	237,740	237,740	53,830,242	44.16	1,201,659	1,203,365	56,262,677	66,232,688
2018	186,946	186,946	51,164,557	36.54	511,855	512,490	21,992,195	27,343,811
2019	1,480	1,480	4,685,150	3.16	1,553	1,557	24,770	33,318

¹Eligible Members are reflective of the number of patients that met all cohort entry criteria on at least one day during the query period

****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 2c. Summary of Incident Valsartan, Angiotensin-Converting Enzyme (ACE) Inhibitor, Calcium Channel Blocker, and other Angiotensin II Receptor Blocker (ARB) Episodes in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019, by Sex

Sex	Episodes	Total Users	Eligible Members ¹	Users per 10,000 Eligible Members	Adjusted Dispensings	Raw Dispensings	Days Supplied	Amount Supplied
Exposures with a 365-Day Washout								
Recalled valsartan								
Female	967,948	886,174	61,360,878	144.42	5,292,278	5,300,937	271,631,159	284,501,117
Male	644,009	597,299	54,453,933	109.69	3,349,374	3,354,174	176,525,549	183,744,606
Other	24	22	3,771	58.34	104	104	5,099	5,084
Recalled valsartan NOT contaminated								
Female	792,264	730,601	61,412,880	118.97	4,115,661	4,123,453	208,802,046	222,051,364
Male	515,167	481,092	54,504,547	88.27	2,541,507	2,545,564	132,596,034	140,078,018
Other	18	17	3,776	45.02	65	65	3,251	3,251
Contaminated valsartan (tested positive)								
Female	299,999	280,905	61,506,644	45.67	1,413,987	1,414,225	75,568,350	75,525,705
Male	*****	*****	54,573,526	*****	965,777	966,082	52,720,519	52,639,943
Other	*****	*****	3,776	*****	40	40	1,878	1,863
N-Nitrosodimethylamine (NDMA)-contaminated valsartan (tested positive)								
Female	228,889	218,995	61,521,207	35.60	1,027,745	1,027,847	56,310,618	56,321,074
Male	*****	*****	54,588,464	*****	684,152	684,273	38,297,610	38,262,890
Other	*****	*****	3,777	*****	36	36	1,621	1,621
N-Nitrosodiethylamine (NDEA)-contaminated valsartan (tested positive)								
Female	186,109	171,671	61,533,463	27.90	695,314	695,398	34,939,906	34,991,278
Male	*****	*****	54,600,976	*****	469,514	469,641	24,189,744	24,179,941
Other	*****	*****	3,780	*****	9	9	421	406
Uncontaminated valsartan (tested negative) OR non-recalled valsartan								
Female	829,581	763,957	60,992,461	125.25	4,048,267	4,055,209	172,413,968	185,153,868
Male	626,063	581,831	54,216,078	107.32	2,872,050	2,875,647	124,049,922	140,533,680
Other	41	39	3,759	103.75	163	163	7,101	7,446
Uncontaminated valsartan (tested negative)								
Female	325,631	298,700	61,452,846	48.61	1,613,439	1,613,574	69,379,661	69,491,212
Male	217,702	201,341	54,541,218	36.92	1,013,395	1,013,498	44,798,068	44,776,331
Other	15	14	3,777	37.07	28	28	1,080	1,080

Table 2c. Summary of Incident Valsartan, Angiotensin-Converting Enzyme (ACE) Inhibitor, Calcium Channel Blocker, and other Angiotensin II Receptor Blocker (ARB) Episodes in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019, by Sex

Sex	Episodes	Total Users	Eligible Members ¹	Users per 10,000 Eligible Members	Adjusted Dispensings	Raw Dispensings	Days Supplied	Amount Supplied
Non-recalled valsartan								
Female	874,245	797,551	61,128,845	130.47	4,064,001	4,072,464	173,291,374	187,447,938
Male	639,188	589,658	54,318,606	108.56	2,801,500	2,805,879	121,827,722	138,990,689
Other	40	38	3,765	100.93	165	165	7,061	7,406
ACE inhibitors								
Female	5,046,439	4,639,853	55,861,184	830.60	30,333,768	30,384,473	1,376,148,900	1,486,993,705
Male	4,859,778	4,441,576	48,504,344	915.71	29,064,297	29,111,122	1,342,860,345	1,440,854,059
Other	283	255	3,545	719.32	1,423	1,426	67,160	70,689
Calcium channel blockers								
Female	5,513,325	4,999,256	57,072,764	875.94	37,653,132	37,729,502	1,695,340,614	1,824,019,618
Male	4,012,144	3,688,374	51,183,446	720.62	26,835,491	26,887,981	1,246,726,499	1,328,127,184
Other	246	221	3,650	605.48	1,350	1,357	65,884	70,681
ARBs (excluding valsartan)								
Female	3,898,124	3,645,540	58,851,372	619.45	29,013,148	29,052,877	1,413,356,641	1,470,727,443
Male	2,775,771	2,614,299	52,571,151	497.29	19,180,589	19,211,153	946,668,802	979,346,231
Other	183	165	3,699	446.07	1,260	1,261	60,795	62,052
Valsartan								
Female	819,561	786,455	60,515,936	129.96	5,419,666	5,429,204	233,777,171	250,965,786
Male	639,442	615,702	53,877,404	114.28	3,895,299	3,900,604	170,109,211	189,284,037
Other	40	39	3,747	104.08	170	170	8,631	8,976

¹Eligible Members are reflective of the number of patients that met all cohort entry criteria on at least one day during the query period

****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 2d. Summary of Incident Valsartan, Angiotensin-Converting Enzyme (ACE) Inhibitor, Calcium Channel Blocker, and other Angiotensin II Receptor Blocker (ARB) Episodes in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019, by Age Group

Age Group (Years)	Episodes	Total Users	Eligible Members ¹	Users per 10,000 Eligible Members	Adjusted Dispensings	Raw Dispensings	Days Supplied	Amount Supplied
Exposures with a 365-Day Washout								
Recalled valsartan								
18-44	55,281	52,901	47,624,370	11.11	259,657	260,048	10,153,553	10,458,093
45-64	364,554	342,068	37,582,327	91.02	1,953,657	1,956,164	85,269,133	87,819,842
65+	1,192,146	1,093,179	39,652,303	275.69	6,428,442	6,439,003	352,739,121	369,972,872
Recalled valsartan NOT contaminated								
18-44	46,431	44,730	47,627,696	9.39	209,746	210,030	8,153,512	8,456,587
45-64	295,590	279,381	37,612,137	74.28	1,525,191	1,527,201	66,077,189	68,701,437
65+	965,428	891,048	39,736,987	224.24	4,922,296	4,931,851	267,170,630	284,974,609
Contaminated valsartan (tested positive)								
18-44	14,755	14,165	47,635,653	2.97	59,924	59,971	2,408,747	2,411,595
45-64	113,705	107,705	37,666,601	28.59	519,220	519,426	23,416,654	23,390,290
65+	383,824	360,331	39,862,799	90.39	1,800,660	1,800,950	102,465,346	102,365,625
N-Nitrosodimethylamine (NDMA)-contaminated valsartan (tested positive)								
18-44	9,923	9,651	47,636,997	2.03	38,003	38,016	1,532,627	1,535,530
45-64	80,418	77,545	37,677,328	20.58	346,867	346,945	15,736,869	15,737,205
65+	298,458	286,469	39,885,674	71.82	1,327,063	1,327,195	77,340,353	77,312,851
N-Nitrosodiethylamine (NDEA)-contaminated valsartan (tested positive)								
18-44	9,184	8,787	47,637,317	1.84	31,585	31,612	1,248,203	1,249,310
45-64	71,854	67,494	37,681,578	17.91	269,432	269,524	11,778,111	11,766,256
65+	234,579	216,658	39,908,721	54.29	863,820	863,912	46,103,757	46,156,059
Uncontaminated valsartan (tested negative) OR non-recalled valsartan								
18-44	77,848	74,050	47,564,765	15.57	331,367	331,709	11,632,889	12,402,730
45-64	378,363	354,935	37,285,074	95.19	1,839,633	1,841,851	71,152,036	76,622,630
65+	999,474	923,044	39,311,381	234.80	4,749,480	4,757,459	213,686,066	236,669,633
Uncontaminated valsartan (tested negative)								
18-44	22,439	21,304	47,624,889	4.47	95,784	95,794	3,424,816	3,425,947
45-64	139,310	129,932	37,612,964	34.54	669,952	670,035	26,180,314	26,109,000
65+	381,599	351,247	39,823,462	88.20	1,861,126	1,861,271	84,573,679	84,733,676

Table 2d. Summary of Incident Valsartan, Angiotensin-Converting Enzyme (ACE) Inhibitor, Calcium Channel Blocker, and other Angiotensin II Receptor Blocker (ARB) Episodes in the Sentinel Distributed Database (SDD) between January 1, 2010 and April 30, 2019, by Age Group

Age Group (Years)	Episodes	Total Users	Eligible Members ¹	Users per 10,000 Eligible Members	Adjusted Dispensings	Raw Dispensings	Days Supplied	Amount Supplied
Non-recalled valsartan								
18-44	75,717	71,813	47,580,577	15.09	308,379	308,737	10,857,222	11,665,940
45-64	385,477	359,315	37,383,959	96.11	1,784,264	1,786,740	69,572,550	75,317,642
65+	1,052,279	962,936	39,468,611	243.98	4,773,023	4,783,031	214,696,385	239,462,451
ACE inhibitors								
18-44	1,154,194	1,063,378	46,767,738	227.37	5,503,354	5,511,395	208,991,341	219,201,132
45-64	3,460,022	3,175,620	33,369,048	951.67	20,178,564	20,211,309	839,693,005	893,698,006
65+	5,292,284	4,908,640	31,910,338	1,538.26	33,717,570	33,774,317	1,670,392,059	1,815,019,316
Calcium channel blockers								
18-44	735,646	687,008	47,251,860	145.39	3,181,322	3,189,772	116,064,150	128,671,951
45-64	2,385,133	2,208,766	35,464,139	622.82	14,965,363	14,997,677	606,968,043	645,387,221
65+	6,404,936	5,840,203	33,817,611	1,726.97	46,343,288	46,431,391	2,219,100,804	2,378,158,310
ARBs (excluding valsartan)								
18-44	400,430	381,963	47,387,825	80.60	2,298,067	2,303,367	87,328,401	89,748,104
45-64	1,747,277	1,656,362	36,131,803	458.42	12,124,284	12,149,604	512,202,974	528,166,448
65+	4,526,371	4,248,839	36,452,501	1,165.58	33,772,646	33,812,320	1,760,554,863	1,832,221,174
Valsartan								
18-44	92,223	89,025	47,545,297	18.72	473,637	474,192	16,815,136	17,752,264
45-64	399,362	385,268	37,096,316	103.86	2,495,687	2,498,892	96,129,576	102,644,943
65+	967,458	931,337	38,658,855	240.91	6,345,811	6,356,894	290,950,301	319,861,592

¹Eligible Members are reflective of the number of patients that met all cohort entry criteria on at least one day during the query period

Appendix A. Start and End Date for Each Data Partner (DP) up to Request Distribution Date (October 14, 2019)

DP ID	Start Date¹	End Date¹
DP01	01/01/2010	02/28/2019
DP02	01/01/2010	07/31/2018
DP03	01/01/2010	03/31/2019
DP04	01/01/2010	11/30/2018
DP05	01/01/2010	12/31/2018
DP06	01/01/2010	12/31/2017
DP07	01/01/2010	12/31/2018
DP08	01/01/2010	12/31/2018
DP09	01/01/2010	04/30/2018
DP10	01/01/2010	03/31/2018
DP11	01/01/2010	01/31/2019
DP12	01/01/2010	04/30/2019
DP13	01/01/2010	01/31/2019
DP14	01/01/2010	06/30/2018
DP15	01/01/2010	06/30/2018
DP16	01/01/2012	06/30/2017

¹The start and end dates are based on the minimum and maximum dates within each DP. The month with the maximum date must have at least 80% of the number of records in the previous month

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

Generic Name	Brand Name
Recalled valsartan	
amlodipine besylate/valsartan/hydrochlorothiazide	Amlodipine-Valsartan-Hcthiazid
amlodipine besylate/valsartan	Amlodipine-Valsartan
valsartan	Valsartan
valsartan/hydrochlorothiazide	Valsartan-hydrochlorothiazide
Valsartan/Hydrochlorothiazide	Valsartan/Hydrochlorothiazide
Amlodipine/Valsartan/Hydrochlorothiazide	Amlodipine/Valsartan/Hydrochlorothiazide
Recalled valsartan not contaminated	
amlodipine besylate/valsartan/hydrochlorothiazide	Amlodipine-Valsartan-Hcthiazid
amlodipine besylate/valsartan	Amlodipine-Valsartan
valsartan	Valsartan
valsartan/hydrochlorothiazide	Valsartan-Hydrochlorothiazide
Valsartan/Hydrochlorothiazide	Valsartan/Hydrochlorothiazide
Amlodipine/Valsartan/Hydrochlorothiazide	Amlodipine/Valsartan/Hydrochlorothiazide
Contaminated valsartan	
amlodipine besylate/valsartan	Amlodipine-Valsartan
amlodipine besylate/valsartan/hydrochlorothiazide	Amlodipine-Valsartan-Hcthiazid
valsartan	Valsartan
valsartan/hydrochlorothiazide	Valsartan-Hydrochlorothiazide
N-Nitrosodimethylamine (NDMA)-contaminated valsartan	
valsartan	Valsartan
valsartan/hydrochlorothiazide	Valsartan-Hydrochlorothiazide
amlodipine besylate/valsartan	Amlodipine-Valsartan
amlodipine besylate/valsartan/hydrochlorothiazide	Amlodipine-Valsartan-Hcthiazid
N-Nitrosodiethylamine (NDEA)-contaminated valsartan	
amlodipine besylate/valsartan	Amlodipine-Valsartan
amlodipine besylate/valsartan/hydrochlorothiazide	Amlodipine-Valsartan-Hcthiazid
valsartan	Valsartan
valsartan/hydrochlorothiazide	Valsartan-Hydrochlorothiazide
Uncontaminated valsartan (tested negative) or non-recalled valsartan	
amlodipine besylate/valsartan	Amlodipine-Valsartan
valsartan	Diovan
valsartan/hydrochlorothiazide	Diovan HCT
amlodipine besylate/valsartan	Exforge
valsartan	Valsartan
valsartan/hydrochlorothiazide	Valsartan-Hydrochlorothiazide
amlodipine besylate/valsartan/hydrochlorothiazide	Amlodipine-Valsartan-Hcthiazid
nebivolol HCl/valsartan	Byvalson
amlodipine besylate/valsartan/hydrochlorothiazide	Exforge HCT
aliskiren/valsartan	Valturna
sacubitril/valsartan	Entresto

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

Generic Name	Brand Name
Untaminated valsartan	
amlodipine besylate/valsartan	Amlodipine-Valsartan
valsartan	Diovan
valsartan/hydrochlorothiazide	Diovan HCT
amlodipine besylate/valsartan	Exforge
valsartan	Valsartan
valsartan/hydrochlorothiazide	Valsartan-Hydrochlorothiazide
amlodipine besylate/valsartan/hydrochlorothiazide	Amlodipine-Valsartan-Hcthiazid
Non-recalled valsartan	
nebivolol HCl/valsartan	Byvalson
valsartan/hydrochlorothiazide	Diovan HCT
valsartan	Diovan
amlodipine besylate/valsartan	Exforge
amlodipine besylate/valsartan/hydrochlorothiazide	Exforge HCT
aliskiren/valsartan	Valturna
sacubitril/valsartan	Entresto
amlodipine besylate/valsartan/hydrochlorothiazide	Amlodipine-Valsartan-Hcthiazid
valsartan	Valsartan
valsartan/hydrochlorothiazide	Valsartan-Hydrochlorothiazide
amlodipine besylate/valsartan	Amlodipine-Valsartan
Angiotensin-converting enzyme (ACE) inhibitors	
lisinopril	Lisinopril
captopril	Capoten
lisinopril/hydrochlorothiazide	Lisinopril-Hydrochlorothiazide
ramipril	Ramipril
enalapril maleate	Enalapril Maleate
enalapril maleate/hydrochlorothiazide	Enalapril-Hydrochlorothiazide
captopril	Captopril
benazepril HCl	Benazepril
fosinopril sodium	Fosinopril
quinapril HCl	Accupril
ramipril	Altace
benazepril HCl/hydrochlorothiazide	Benazepril-Hydrochlorothiazide
quinapril HCl	Quinapril
moexipril HCl	Moexipril
moexipril HCl/hydrochlorothiazide	Moexipril-Hydrochlorothiazide
benazepril HCl	Lotensin
lisinopril	Zestril
amlodipine besylate/benazepril HCl	Lotrel
quinapril HCl/hydrochlorothiazide	Quinaretic
lisinopril/hydrochlorothiazide	Zestoretic
trandolapril	trandolapril
fosinopril sodium	Monopril
trandolapril	Mavik

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

Generic Name	Brand Name
enalaprilat dihydrate	Enalaprilat
benazepril HCl/hydrochlorothiazide	Lotensin HCT
fosinopril sodium/hydrochlorothiazide	Fosinopril-Hydrochlorothiazide
amlodipine besylate/benazepril HCl	Amlodipine-Benazepril
perindopril erbumine	Perindopril Erbumine
enalapril maleate	Vasotec
captopril/hydrochlorothiazide	Captopril-Hydrochlorothiazide
moexipril HCl	Univasc
moexipril HCl/hydrochlorothiazide	Uniretic
perindopril erbumine	Aceon
trandolapril/verapamil HCl	Tarka
lisinopril/dietary supplement,comb.10	Lytensopril
lisinopril/dietary supplement,comb.10	Lytensopril-90
trandolapril/verapamil HCl	trandolapril-verapamil
enalapril maleate/hydrochlorothiazide	Vaseretic
lisinopril	Prinivil
lisinopril/hydrochlorothiazide	Prinzide
quinapril HCl/hydrochlorothiazide	Quinapril-Hydrochlorothiazide
enalapril maleate	Epaned
quinapril HCl/hydrochlorothiazide	Accuretic
lisinopril	Qbrelis
perindopril arginine/amlodipine besylate	Prestalia
Calcium channel blockers	
verapamil HCl	Covera-HS
felodipine	Felodipine
nicardipine HCl	Cardene IV
diltiazem HCl	Cardizem LA
verapamil HCl	Calan
amlodipine besylate	Amlodipine
diltiazem HCl	Cardizem
diltiazem HCl	Diltiazem HCl
nifedipine	Nifedipine
nicardipine in dextrose, iso-osmotic	Cardene IV in dextrose
diltiazem HCl	DILT-XR
amlodipine besylate	Norvasc
felodipine	Plendil
verapamil HCl	Verapamil
verapamil HCl	Calan SR
nicardipine in sodium chloride, iso-osmotic	Cardene IV in sodium chloride
isradipine	Isradipine
nifedipine	Procardia XL
diltiazem HCl	Cardizem CD
nicardipine HCl	Cardene SR
nicardipine HCl	Nicardipine

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

Generic Name	Brand Name
isradipine	DynaCirc CR
diltiazem HCl	Tiazac
diltiazem HCl	Dilacor XR
diltiazem HCl	Taztia XT
diltiazem HCl	Cartia XT
diltiazem HCl	Diltia XT
verapamil HCl	Isoptin SR
nifedipine	Nifediac CC
nifedipine	Procardia
nisoldipine	Nisoldipine
nifedipine	Adalat CC
clevidipine butyrate	Cleviprex
nisoldipine	Sular
verapamil HCl	Verelan
nimodipine	Nimodipine
verapamil HCl	Verelan PM
diltiazem HCl	DILT-CD
diltiazem HCl	Diltzac ER
diltiazem HCl/dextrose 5 % in water	Diltiazem in Dextrose 5 %
nifedipine	Afeditab CR
nifedipine	Nifedical XL
diltiazem HCl in 0.9 % sodium chloride	Diltiazem HCl in 0.9% NaCl
nicardipine in 5 % dextrose in water	Nicardipine in 5 % dextrose
nicardipine HCl in 0.9 % sodium chloride	Nicardipine in 0.9 % NaCl
nimodipine	Nymalize
diltiazem HCl	Matzim LA
Angiotensin II receptor blockers (ARBs)	
losartan potassium	Cozaar
irbesartan	Avapro
candesartan cilexetil	Atacand
irbesartan/hydrochlorothiazide	Avalide
losartan potassium/hydrochlorothiazide	Hyzaar
telmisartan/hydrochlorothiazide	Micardis HCT
candesartan cilexetil/hydrochlorothiazide	Atacand HCT
losartan potassium/hydrochlorothiazide	Losartan-Hydrochlorothiazide
losartan potassium	Losartan
eprosartan mesylate/hydrochlorothiazide	Teveten HCT
eprosartan mesylate	Teveten
irbesartan/hydrochlorothiazide	Irbesartan-Hydrochlorothiazide
irbesartan	Irbesartan
candesartan cilexetil/hydrochlorothiazide	Candesartan-Hydrochlorothiazid
azilsartan medoxomil/chlorthalidone	Edarbyclor
azilsartan medoxomil	Edarbi
telmisartan	Micardis

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

Generic Name	Brand Name
telmisartan/hydrochlorothiazide	Telmisartan-Hydrochlorothiazid
telmisartan	Telmisartan
candesartan cilexetil	Candesartan
telmisartan/amlodipine besylate	Telmisartan-Amlodipine
eprosartan mesylate	Eprosartan
telmisartan/amlodipine besylate	Twynsta
amlodipine besylate/olmesartan medoxomil	Azor
olmesartan medoxomil	Benicar
olmesartan medoxomil/hydrochlorothiazide	Benicar HCT
olmesartan medoxomil/amlodipine besylate/hydrochlorothiazide	Tribenzor
olmesartan medoxomil/amlodipine besylate/hydrochlorothiazide	Olmesartan-Amlodipin-Hcthiazid
olmesartan medoxomil	Olmesartan
olmesartan medoxomil/hydrochlorothiazide	Olmesartan-Hydrochlorothiazide
amlodipine besylate/olmesartan medoxomil	Amlodipine-Olmesartan

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
Diabetes			
249.00	Secondary diabetes mellitus without mention of complication, not stated as uncontrolled, or unspecified	Diagnosis	ICD-9-CM
249.01	Secondary diabetes mellitus without mention of complication, uncontrolled	Diagnosis	ICD-9-CM
249.10	Secondary diabetes mellitus with ketoacidosis, not stated as uncontrolled, or unspecified	Diagnosis	ICD-9-CM
249.11	Secondary diabetes mellitus with ketoacidosis, uncontrolled	Diagnosis	ICD-9-CM
249.20	Secondary diabetes mellitus with hyperosmolarity, not stated as uncontrolled, or	Diagnosis	ICD-9-CM
249.21	Secondary diabetes mellitus with hyperosmolarity, uncontrolled	Diagnosis	ICD-9-CM
249.30	Secondary diabetes mellitus with other coma, not stated as uncontrolled, or unspecified	Diagnosis	ICD-9-CM
249.31	Secondary diabetes mellitus with other coma, uncontrolled	Diagnosis	ICD-9-CM
249.40	Secondary diabetes mellitus with renal manifestations, not stated as uncontrolled, or unspecified	Diagnosis	ICD-9-CM
249.41	Secondary diabetes mellitus with renal manifestations, uncontrolled	Diagnosis	ICD-9-CM
249.50	Secondary diabetes mellitus with ophthalmic manifestations, not stated as uncontrolled, or unspecified	Diagnosis	ICD-9-CM
249.51	Secondary diabetes mellitus with ophthalmic manifestations, uncontrolled	Diagnosis	ICD-9-CM
249.60	Secondary diabetes mellitus with neurological manifestations, not stated as uncontrolled, or unspecified	Diagnosis	ICD-9-CM
249.61	Secondary diabetes mellitus with neurological manifestations, uncontrolled	Diagnosis	ICD-9-CM
249.70	Secondary diabetes mellitus with peripheral circulatory disorders, not stated as uncontrolled, or unspecified	Diagnosis	ICD-9-CM
249.71	Secondary diabetes mellitus with peripheral circulatory disorders, uncontrolled	Diagnosis	ICD-9-CM
249.80	Secondary diabetes mellitus with other specified manifestations, not stated as uncontrolled, or unspecified	Diagnosis	ICD-9-CM
249.81	Secondary diabetes mellitus with other specified manifestations, uncontrolled	Diagnosis	ICD-9-CM
249.90	Secondary diabetes mellitus with unspecified complication, not stated as uncontrolled, or unspecified	Diagnosis	ICD-9-CM
249.91	Secondary diabetes mellitus with unspecified complication, uncontrolled	Diagnosis	ICD-9-CM
250.00	Diabetes mellitus without mention of complication, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.01	Diabetes mellitus without mention of complication, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.02	Diabetes mellitus without mention of complication, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.03	Diabetes mellitus without mention of complication, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.10	Diabetes with ketoacidosis, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.11	Diabetes with ketoacidosis, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.12	Diabetes with ketoacidosis, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.13	Diabetes with ketoacidosis, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
250.20	Diabetes with hyperosmolarity, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.21	Diabetes with hyperosmolarity, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.22	Diabetes with hyperosmolarity, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.23	Diabetes with hyperosmolarity, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.30	Diabetes with other coma, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.31	Diabetes with other coma, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.32	Diabetes with other coma, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.33	Diabetes with other coma, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.40	Diabetes with renal manifestations, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.41	Diabetes with renal manifestations, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.42	Diabetes with renal manifestations, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.43	Diabetes with renal manifestations, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.50	Diabetes with ophthalmic manifestations, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.51	Diabetes with ophthalmic manifestations, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.52	Diabetes with ophthalmic manifestations, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.53	Diabetes with ophthalmic manifestations, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.60	Diabetes with neurological manifestations, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.61	Diabetes with neurological manifestations, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.62	Diabetes with neurological manifestations, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.63	Diabetes with neurological manifestations, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.70	Diabetes with peripheral circulatory disorders, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.71	Diabetes with peripheral circulatory disorders, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.72	Diabetes with peripheral circulatory disorders, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.73	Diabetes with peripheral circulatory disorders, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.80	Diabetes with other specified manifestations, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.81	Diabetes with other specified manifestations, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.82	Diabetes with other specified manifestations, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.83	Diabetes with other specified manifestations, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.90	Diabetes with unspecified complication, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
250.91	Diabetes with unspecified complication, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.92	Diabetes with unspecified complication, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.93	Diabetes with unspecified complication, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
357.2	Polyneuropathy in diabetes	Diagnosis	ICD-9-CM
362.01	Background diabetic retinopathy	Diagnosis	ICD-9-CM
362.02	Proliferative diabetic retinopathy	Diagnosis	ICD-9-CM
362.03	Nonproliferative diabetic retinopathy NOS	Diagnosis	ICD-9-CM
362.04	Mild nonproliferative diabetic retinopathy	Diagnosis	ICD-9-CM
362.05	Moderate nonproliferative diabetic retinopathy	Diagnosis	ICD-9-CM
362.06	Severe nonproliferative diabetic retinopathy	Diagnosis	ICD-9-CM
366.41	Diabetic cataract	Diagnosis	ICD-9-CM
E08.00	Diabetes mellitus due to underlying condition with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)	Diagnosis	ICD-10-CM
E08.01	Diabetes mellitus due to underlying condition with hyperosmolarity with coma	Diagnosis	ICD-10-CM
E08.10	Diabetes mellitus due to underlying condition with ketoacidosis without coma	Diagnosis	ICD-10-CM
E08.11	Diabetes mellitus due to underlying condition with ketoacidosis with coma	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
E08.311	Diabetes mellitus due to underlying condition with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E08.319	Diabetes mellitus due to underlying condition with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E08.321	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E08.3211	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E08.3212	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E08.3213	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3219	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.329	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E08.3291	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E08.3292	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E08.3293	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E08.3299	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.331	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E08.3311	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E08.3312	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E08.3313	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3319	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.339	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E08.3391	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E08.3392	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E08.3393	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3399	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.341	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E08.3411	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E08.3412	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E08.3413	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3419	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.349	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E08.3491	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E08.3492	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E08.3493	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3499	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E08.351	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E08.3511	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E08.3512	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E08.3513	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3519	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.3521	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM
E08.3522	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E08.3523	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM
E08.3529	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E08.3531	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM
E08.3532	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E08.3533	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E08.3539	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E08.3541	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E08.3542	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E08.3543	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM
E08.3549	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified eye	Diagnosis	ICD-10-CM
E08.3551	Diabetes mellitus due to underlying condition with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM
E08.3552	Diabetes mellitus due to underlying condition with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E08.3553	Diabetes mellitus due to underlying condition with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
E08.3559	Diabetes mellitus due to underlying condition with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E08.359	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E08.3591	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E08.3592	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E08.3593	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3599	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.36	Diabetes mellitus due to underlying condition with diabetic cataract	Diagnosis	ICD-10-CM
E08.37X1	Diabetes mellitus due to underlying condition with diabetic macular edema, resolved following treatment, right eye	Diagnosis	ICD-10-CM
E08.37X2	Diabetes mellitus due to underlying condition with diabetic macular edema, resolved following treatment, left eye	Diagnosis	ICD-10-CM
E08.37X3	Diabetes mellitus due to underlying condition with diabetic macular edema, resolved following treatment, bilateral	Diagnosis	ICD-10-CM
E08.37X9	Diabetes mellitus due to underlying condition with diabetic macular edema, resolved following treatment, unspecified eye	Diagnosis	ICD-10-CM
E08.39	Diabetes mellitus due to underlying condition with other diabetic ophthalmic complication	Diagnosis	ICD-10-CM
E08.40	Diabetes mellitus due to underlying condition with diabetic neuropathy, unspecified	Diagnosis	ICD-10-CM
E08.41	Diabetes mellitus due to underlying condition with diabetic mononeuropathy	Diagnosis	ICD-10-CM
E08.42	Diabetes mellitus due to underlying condition with diabetic polyneuropathy	Diagnosis	ICD-10-CM
E08.43	Diabetes mellitus due to underlying condition with diabetic autonomic (poly)neuropathy	Diagnosis	ICD-10-CM
E08.44	Diabetes mellitus due to underlying condition with diabetic amyotrophy	Diagnosis	ICD-10-CM
E08.49	Diabetes mellitus due to underlying condition with other diabetic neurological complication	Diagnosis	ICD-10-CM
E08.51	Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E08.52	Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E08.59	Diabetes mellitus due to underlying condition with other circulatory complications	Diagnosis	ICD-10-CM
E08.610	Diabetes mellitus due to underlying condition with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM
E08.618	Diabetes mellitus due to underlying condition with other diabetic arthropathy	Diagnosis	ICD-10-CM
E08.620	Diabetes mellitus due to underlying condition with diabetic dermatitis	Diagnosis	ICD-10-CM
E08.621	Diabetes mellitus due to underlying condition with foot ulcer	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E08.622	Diabetes mellitus due to underlying condition with other skin ulcer	Diagnosis	ICD-10-CM
E08.628	Diabetes mellitus due to underlying condition with other skin complications	Diagnosis	ICD-10-CM
E08.630	Diabetes mellitus due to underlying condition with periodontal disease	Diagnosis	ICD-10-CM
E08.638	Diabetes mellitus due to underlying condition with other oral complications	Diagnosis	ICD-10-CM
E08.641	Diabetes mellitus due to underlying condition with hypoglycemia with coma	Diagnosis	ICD-10-CM
E08.649	Diabetes mellitus due to underlying condition with hypoglycemia without coma	Diagnosis	ICD-10-CM
E08.65	Diabetes mellitus due to underlying condition with hyperglycemia	Diagnosis	ICD-10-CM
E08.69	Diabetes mellitus due to underlying condition with other specified complication	Diagnosis	ICD-10-CM
E08.8	Diabetes mellitus due to underlying condition with unspecified complications	Diagnosis	ICD-10-CM
E08.9	Diabetes mellitus due to underlying condition without complications	Diagnosis	ICD-10-CM
E09.00	Drug or chemical induced diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)	Diagnosis	ICD-10-CM
E09.01	Drug or chemical induced diabetes mellitus with hyperosmolarity with coma	Diagnosis	ICD-10-CM
E09.10	Drug or chemical induced diabetes mellitus with ketoacidosis without coma	Diagnosis	ICD-10-CM
E09.11	Drug or chemical induced diabetes mellitus with ketoacidosis with coma	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
E09.311	Drug or chemical induced diabetes mellitus with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E09.319	Drug or chemical induced diabetes mellitus with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E09.321	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E09.3211	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E09.3212	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E09.3213	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3219	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.329	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E09.3291	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E09.3292	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E09.3293	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E09.3299	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.331	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E09.3311	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E09.3312	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E09.3313	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3319	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.339	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E09.3391	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E09.3392	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E09.3393	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3399	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.341	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E09.3411	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E09.3412	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E09.3413	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3419	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.349	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E09.3491	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E09.3492	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E09.3493	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3499	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E09.351	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E09.3511	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E09.3512	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E09.3513	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3519	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.3521	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM
E09.3522	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E09.3523	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM
E09.3529	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E09.3531	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM
E09.3532	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E09.3533	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E09.3539	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E09.3541	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E09.3542	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E09.3543	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM
E09.3549	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified eye	Diagnosis	ICD-10-CM
E09.3551	Drug or chemical induced diabetes mellitus with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM
E09.3552	Drug or chemical induced diabetes mellitus with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E09.3553	Drug or chemical induced diabetes mellitus with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
E09.3559	Drug or chemical induced diabetes mellitus with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E09.359	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E09.3591	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E09.3592	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E09.3593	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3599	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.36	Drug or chemical induced diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E09.37X1	Drug or chemical induced diabetes mellitus with diabetic macular edema, resolved following treatment, right eye	Diagnosis	ICD-10-CM
E09.37X2	Drug or chemical induced diabetes mellitus with diabetic macular edema, resolved following treatment, left eye	Diagnosis	ICD-10-CM
E09.37X3	Drug or chemical induced diabetes mellitus with diabetic macular edema, resolved following treatment, bilateral	Diagnosis	ICD-10-CM
E09.37X9	Drug or chemical induced diabetes mellitus with diabetic macular edema, resolved following treatment, unspecified eye	Diagnosis	ICD-10-CM
E09.39	Drug or chemical induced diabetes mellitus with other diabetic ophthalmic complication	Diagnosis	ICD-10-CM
E09.40	Drug or chemical induced diabetes mellitus with neurological complications with diabetic neuropathy, unspecified	Diagnosis	ICD-10-CM
E09.41	Drug or chemical induced diabetes mellitus with neurological complications with diabetic mononeuropathy	Diagnosis	ICD-10-CM
E09.42	Drug or chemical induced diabetes mellitus with neurological complications with diabetic polyneuropathy	Diagnosis	ICD-10-CM
E09.43	Drug or chemical induced diabetes mellitus with neurological complications with diabetic autonomic (poly)neuropathy	Diagnosis	ICD-10-CM
E09.44	Drug or chemical induced diabetes mellitus with neurological complications with diabetic amyotrophy	Diagnosis	ICD-10-CM
E09.49	Drug or chemical induced diabetes mellitus with neurological complications with other diabetic neurological complication	Diagnosis	ICD-10-CM
E09.51	Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E09.52	Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E09.59	Drug or chemical induced diabetes mellitus with other circulatory complications	Diagnosis	ICD-10-CM
E09.610	Drug or chemical induced diabetes mellitus with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E09.618	Drug or chemical induced diabetes mellitus with other diabetic arthropathy	Diagnosis	ICD-10-CM
E09.620	Drug or chemical induced diabetes mellitus with diabetic dermatitis	Diagnosis	ICD-10-CM
E09.621	Drug or chemical induced diabetes mellitus with foot ulcer	Diagnosis	ICD-10-CM
E09.622	Drug or chemical induced diabetes mellitus with other skin ulcer	Diagnosis	ICD-10-CM
E09.628	Drug or chemical induced diabetes mellitus with other skin complications	Diagnosis	ICD-10-CM
E09.630	Drug or chemical induced diabetes mellitus with periodontal disease	Diagnosis	ICD-10-CM
E09.638	Drug or chemical induced diabetes mellitus with other oral complications	Diagnosis	ICD-10-CM
E09.641	Drug or chemical induced diabetes mellitus with hypoglycemia with coma	Diagnosis	ICD-10-CM
E09.649	Drug or chemical induced diabetes mellitus with hypoglycemia without coma	Diagnosis	ICD-10-CM
E09.65	Drug or chemical induced diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E09.69	Drug or chemical induced diabetes mellitus with other specified complication	Diagnosis	ICD-10-CM
E09.8	Drug or chemical induced diabetes mellitus with unspecified complications	Diagnosis	ICD-10-CM
E09.9	Drug or chemical induced diabetes mellitus without complications	Diagnosis	ICD-10-CM
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
E10.321	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with 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
E10.329	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema	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
E10.331	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
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
E10.339	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema	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
E10.3399	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.341	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema	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
E10.349	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema	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
E10.351	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema	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

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
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
E10.359	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema	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
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
E11.10	Type 2 diabetes mellitus with ketoacidosis without coma	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E11.11	Type 2 diabetes mellitus with ketoacidosis 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
E11.321	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with 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
E11.329	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema	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
E11.331	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema	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
E11.339	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema	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

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
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
E11.341	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
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
E11.349	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema	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
E11.351	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema	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

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
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
E11.3549	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified 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
E11.3559	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E11.359	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E11.3591	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E11.3592	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E11.3593	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3599	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.36	Type 2 diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E11.37X1	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, right eye	Diagnosis	ICD-10-CM
E11.37X2	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, left eye	Diagnosis	ICD-10-CM
E11.37X3	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, bilateral	Diagnosis	ICD-10-CM
E11.37X9	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, unspecified 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

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
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
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
E13.00	Other specified diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)	Diagnosis	ICD-10-CM
E13.01	Other specified diabetes mellitus with hyperosmolarity with coma	Diagnosis	ICD-10-CM
E13.10	Other specified diabetes mellitus with ketoacidosis without coma	Diagnosis	ICD-10-CM
E13.11	Other specified diabetes mellitus with ketoacidosis with coma	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
E13.311	Other specified diabetes mellitus with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E13.319	Other specified diabetes mellitus with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E13.321	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E13.3211	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E13.3212	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E13.3213	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3219	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E13.329	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E13.3291	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E13.3292	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E13.3293	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3299	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.331	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E13.3311	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E13.3312	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E13.3313	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3319	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.339	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E13.3391	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E13.3392	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E13.3393	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3399	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.341	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E13.3411	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E13.3412	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E13.3413	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3419	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.349	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E13.3491	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E13.3492	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E13.3493	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3499	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.351	Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E13.3511	Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E13.3512	Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E13.3513	Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3519	Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.3521	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM
E13.3522	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E13.3523	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM
E13.3529	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E13.3531	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM
E13.3532	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E13.3533	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E13.3539	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E13.3541	Other specified diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E13.3542	Other specified diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E13.3543	Other specified diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
E13.3549	Other specified diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified eye	Diagnosis	ICD-10-CM
E13.3551	Other specified diabetes mellitus with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM
E13.3552	Other specified diabetes mellitus with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM
E13.3553	Other specified diabetes mellitus with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
E13.3559	Other specified diabetes mellitus with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E13.359	Other specified diabetes mellitus with proliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E13.36	Other specified diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E13.39	Other specified diabetes mellitus with other diabetic ophthalmic complication	Diagnosis	ICD-10-CM
E13.40	Other specified diabetes mellitus with diabetic neuropathy, unspecified	Diagnosis	ICD-10-CM
E13.41	Other specified diabetes mellitus with diabetic mononeuropathy	Diagnosis	ICD-10-CM
E13.42	Other specified diabetes mellitus with diabetic polyneuropathy	Diagnosis	ICD-10-CM
E13.43	Other specified diabetes mellitus with diabetic autonomic (poly)neuropathy	Diagnosis	ICD-10-CM
E13.44	Other specified diabetes mellitus with diabetic amyotrophy	Diagnosis	ICD-10-CM
E13.49	Other specified diabetes mellitus with other diabetic neurological complication	Diagnosis	ICD-10-CM
E13.51	Other specified diabetes mellitus with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E13.52	Other specified diabetes mellitus with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E13.59	Other specified diabetes mellitus with other circulatory complications	Diagnosis	ICD-10-CM
E13.610	Other specified diabetes mellitus with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM
E13.618	Other specified diabetes mellitus with other diabetic arthropathy	Diagnosis	ICD-10-CM
E13.620	Other specified diabetes mellitus with diabetic dermatitis	Diagnosis	ICD-10-CM
E13.621	Other specified diabetes mellitus with foot ulcer	Diagnosis	ICD-10-CM
E13.622	Other specified diabetes mellitus with other skin ulcer	Diagnosis	ICD-10-CM
E13.628	Other specified diabetes mellitus with other skin complications	Diagnosis	ICD-10-CM
E13.630	Other specified diabetes mellitus with periodontal disease	Diagnosis	ICD-10-CM
E13.638	Other specified diabetes mellitus with other oral complications	Diagnosis	ICD-10-CM
E13.641	Other specified diabetes mellitus with hypoglycemia with coma	Diagnosis	ICD-10-CM
E13.649	Other specified diabetes mellitus with hypoglycemia without coma	Diagnosis	ICD-10-CM
E13.65	Other specified diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E13.69	Other specified diabetes mellitus with other specified complication	Diagnosis	ICD-10-CM
E13.8	Other specified diabetes mellitus with unspecified complications	Diagnosis	ICD-10-CM
E13.9	Other specified diabetes mellitus without complications	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
Heart Failure			
402.01	Malignant hypertensive heart disease with heart failure	Diagnosis	ICD-9-CM
402.11	Benign hypertensive heart disease with heart failure	Diagnosis	ICD-9-CM
402.91	Hypertensive heart disease, unspecified, with heart failure	Diagnosis	ICD-9-CM
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
428	Heart failure	Diagnosis	ICD-9-CM
428.0	Congestive heart failure, unspecified	Diagnosis	ICD-9-CM
428.1	Left heart failure	Diagnosis	ICD-9-CM
428.2	Systolic heart failure	Diagnosis	ICD-9-CM
428.20	Unspecified systolic heart failure	Diagnosis	ICD-9-CM
428.21	Acute systolic heart failure	Diagnosis	ICD-9-CM
428.22	Chronic systolic heart failure	Diagnosis	ICD-9-CM
428.23	Acute on chronic systolic heart failure	Diagnosis	ICD-9-CM
428.3	Diastolic heart failure	Diagnosis	ICD-9-CM
428.30	Unspecified diastolic heart failure	Diagnosis	ICD-9-CM
428.31	Acute diastolic heart failure	Diagnosis	ICD-9-CM
428.32	Chronic diastolic heart failure	Diagnosis	ICD-9-CM
428.33	Acute on chronic diastolic heart failure	Diagnosis	ICD-9-CM
428.4	Combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
428.40	Unspecified combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
428.41	Acute combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
428.42	Chronic combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
428.43	Acute on chronic combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
428.9	Unspecified heart failure	Diagnosis	ICD-9-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
I50	Heart failure	Diagnosis	ICD-10-CM
I50.1	Left ventricular failure, unspecified	Diagnosis	ICD-10-CM
I50.2	Systolic (congestive) heart failure	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
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
I50.3	Diastolic (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
I50.4	Combined systolic (congestive) and 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
I50.9	Heart failure, unspecified	Diagnosis	ICD-10-CM
398.91	Rheumatic heart failure (congestive)	Diagnosis	ICD-10-CM
I09.81	Rheumatic 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
Hypertension			
362.11	Hypertensive retinopathy	Diagnosis	ICD-9-CM
401.0	Essential hypertension, malignant	Diagnosis	ICD-9-CM
401.1	Essential hypertension, benign	Diagnosis	ICD-9-CM
401.9	Unspecified essential hypertension	Diagnosis	ICD-9-CM
402.00	Malignant hypertensive heart disease without heart failure	Diagnosis	ICD-9-CM
402.01	Malignant hypertensive heart disease with heart failure	Diagnosis	ICD-9-CM
402.10	Benign hypertensive heart disease without heart failure	Diagnosis	ICD-9-CM
402.11	Benign hypertensive heart disease with heart failure	Diagnosis	ICD-9-CM
402.90	Unspecified hypertensive heart disease without heart failure	Diagnosis	ICD-9-CM
402.91	Hypertensive heart disease, unspecified, with heart failure	Diagnosis	ICD-9-CM
403.00	Hypertensive chronic kidney disease, malignant, with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
403.01	Hypertensive chronic kidney disease, malignant, with chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
403.10	Hypertensive chronic kidney disease, benign, with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
403.11	Hypertensive chronic kidney disease, benign, with chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
403.90	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
403.91	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
404.00	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.02	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
404.10	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.12	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
404.90	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.92	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
405.01	Secondary renovascular hypertension, malignant	Diagnosis	ICD-9-CM
405.09	Other secondary hypertension, malignant	Diagnosis	ICD-9-CM
405.11	Secondary renovascular hypertension, benign	Diagnosis	ICD-9-CM
405.19	Other secondary hypertension, benign	Diagnosis	ICD-9-CM
405.91	Secondary renovascular hypertension, unspecified	Diagnosis	ICD-9-CM
405.99	Other secondary hypertension, unspecified	Diagnosis	ICD-9-CM
437.2	Hypertensive encephalopathy	Diagnosis	ICD-9-CM
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

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
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
Renal Disorders			
580	Acute glomerulonephritis	Diagnosis	ICD-9-CM
580.0	Acute glomerulonephritis with lesion of proliferative glomerulonephritis	Diagnosis	ICD-9-CM
580.4	Acute glomerulonephritis with lesion of rapidly progressive glomerulonephritis	Diagnosis	ICD-9-CM
580.8	Acute glomerulonephritis with other specified pathological lesion in kidney	Diagnosis	ICD-9-CM
580.81	Acute glomerulonephritis with other specified pathological lesion in kidney in disease classified elsewhere	Diagnosis	ICD-9-CM
580.89	Other acute glomerulonephritis with other specified pathological lesion in kidney	Diagnosis	ICD-9-CM
580.9	Acute glomerulonephritis with unspecified pathological lesion in kidney	Diagnosis	ICD-9-CM
581	Nephrotic syndrome	Diagnosis	ICD-9-CM
581.0	Nephrotic syndrome with lesion of proliferative glomerulonephritis	Diagnosis	ICD-9-CM
581.1	Nephrotic syndrome with lesion of membranous glomerulonephritis	Diagnosis	ICD-9-CM
581.2	Nephrotic syndrome with lesion of membranoproliferative glomerulonephritis	Diagnosis	ICD-9-CM
581.3	Nephrotic syndrome with lesion of minimal change glomerulonephritis	Diagnosis	ICD-9-CM
581.8	Nephrotic syndrome with other specified pathological lesion in kidney	Diagnosis	ICD-9-CM
581.81	Nephrotic syndrome with other specified pathological lesion in kidney in diseases classified elsewhere	Diagnosis	ICD-9-CM
581.89	Other nephrotic syndrome with specified pathological lesion in kidney	Diagnosis	ICD-9-CM
581.9	Nephrotic syndrome with unspecified pathological lesion in kidney	Diagnosis	ICD-9-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
582	Chronic glomerulonephritis	Diagnosis	ICD-9-CM
582.0	Chronic glomerulonephritis with lesion of proliferative glomerulonephritis	Diagnosis	ICD-9-CM
582.1	Chronic glomerulonephritis with lesion of membranous glomerulonephritis	Diagnosis	ICD-9-CM
582.2	Chronic glomerulonephritis with lesion of membranoproliferative glomerulonephritis	Diagnosis	ICD-9-CM
582.4	Chronic glomerulonephritis with lesion of rapidly progressive glomerulonephritis	Diagnosis	ICD-9-CM
582.8	Chronic glomerulonephritis with other specified pathological lesion in kidney	Diagnosis	ICD-9-CM
582.81	Chronic glomerulonephritis with other specified pathological lesion in kidney in diseases classified elsewhere	Diagnosis	ICD-9-CM
582.89	Other chronic glomerulonephritis with specified pathological lesion in kidney	Diagnosis	ICD-9-CM
582.9	Chronic glomerulonephritis with unspecified pathological lesion in kidney	Diagnosis	ICD-9-CM
583	Nephritis and nephropathy, not specified as acute or chronic	Diagnosis	ICD-9-CM
583.0	Nephritis and nephropathy, not specified as acute or chronic, with lesion of proliferative glomerulonephritis	Diagnosis	ICD-9-CM
583.1	Nephritis and nephropathy, not specified as acute or chronic, with lesion of membranous glomerulonephritis	Diagnosis	ICD-9-CM
583.2	Nephritis and nephropathy, not specified as acute or chronic, with lesion of membranoproliferative glomerulonephritis	Diagnosis	ICD-9-CM
583.4	Nephritis and nephropathy, not specified as acute or chronic, with lesion of rapidly progressive glomerulonephritis	Diagnosis	ICD-9-CM
583.6	Nephritis and nephropathy, not specified as acute or chronic, with lesion of renal cortical necrosis	Diagnosis	ICD-9-CM
583.7	Nephritis and nephropathy, not specified as acute or chronic, with lesion of renal medullary necrosis	Diagnosis	ICD-9-CM
583.8	Nephritis and nephropathy, not specified as acute or chronic, with other specified pathological lesion in kidney	Diagnosis	ICD-9-CM
583.81	Nephritis and nephropathy, not specified as acute or chronic, with other specified pathological lesion in kidney, in diseases classified elsewhere	Diagnosis	ICD-9-CM
583.89	Other nephritis and nephropathy, not specified as acute or chronic, with specified pathological lesion in kidney	Diagnosis	ICD-9-CM
583.9	Nephritis and nephropathy, not specified as acute or chronic, with unspecified pathological lesion in kidney	Diagnosis	ICD-9-CM
584	Acute kidney failure	Diagnosis	ICD-9-CM
584.5	Acute kidney failure with lesion of tubular necrosis	Diagnosis	ICD-9-CM
584.6	Acute kidney failure with lesion of renal cortical necrosis	Diagnosis	ICD-9-CM
584.7	Acute kidney failure with lesion of medullary [papillary] necrosis	Diagnosis	ICD-9-CM
584.8	Acute kidney failure with other specified pathological lesion in kidney	Diagnosis	ICD-9-CM
584.9	Acute kidney failure, unspecified	Diagnosis	ICD-9-CM
585	Chronic kidney disease (CKD)	Diagnosis	ICD-9-CM
585.1	Chronic kidney disease, Stage I	Diagnosis	ICD-9-CM
585.2	Chronic kidney disease, Stage II (mild)	Diagnosis	ICD-9-CM
585.3	Chronic kidney disease, Stage III (moderate)	Diagnosis	ICD-9-CM
585.4	Chronic kidney disease, Stage IV (severe)	Diagnosis	ICD-9-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
585.5	Chronic kidney disease, Stage V	Diagnosis	ICD-9-CM
585.6	End stage renal disease	Diagnosis	ICD-9-CM
585.9	Chronic kidney disease, unspecified	Diagnosis	ICD-9-CM
586	Unspecified renal failure	Diagnosis	ICD-9-CM
587	Unspecified renal sclerosis	Diagnosis	ICD-9-CM
588	Disorders resulting from impaired renal function	Diagnosis	ICD-9-CM
588.0	Renal osteodystrophy	Diagnosis	ICD-9-CM
588.1	Nephrogenic diabetes insipidus	Diagnosis	ICD-9-CM
588.8	Other specified disorder resulting from impaired renal function	Diagnosis	ICD-9-CM
588.89	Other specified disorders resulting from impaired renal function	Diagnosis	ICD-9-CM
588.9	Unspecified disorder resulting from impaired renal function	Diagnosis	ICD-9-CM
590	Infections of kidney	Diagnosis	ICD-9-CM
590.0	Chronic pyelonephritis	Diagnosis	ICD-9-CM
590.00	Chronic pyelonephritis without lesion of renal medullary necrosis	Diagnosis	ICD-9-CM
590.01	Chronic pyelonephritis with lesion of renal medullary necrosis	Diagnosis	ICD-9-CM
590.1	Acute pyelonephritis	Diagnosis	ICD-9-CM
590.10	Acute pyelonephritis without lesion of renal medullary necrosis	Diagnosis	ICD-9-CM
590.11	Acute pyelonephritis with lesion of renal medullary necrosis	Diagnosis	ICD-9-CM
590.2	Renal and perinephric abscess	Diagnosis	ICD-9-CM
590.3	Pyeloureteritis cystica	Diagnosis	ICD-9-CM
590.8	Other pyelonephritis or pyonephrosis, not specified as acute or chronic	Diagnosis	ICD-9-CM
590.80	Unspecified pyelonephritis	Diagnosis	ICD-9-CM
590.81	Pyelitis or pyelonephritis in diseases classified elsewhere	Diagnosis	ICD-9-CM
590.9	Unspecified infection of kidney	Diagnosis	ICD-9-CM
591	Hydronephrosis	Diagnosis	ICD-9-CM
593	Other disorders of kidney and ureter	Diagnosis	ICD-9-CM
593.1	Hypertrophy of kidney	Diagnosis	ICD-9-CM
593.4	Other ureteric obstruction	Diagnosis	ICD-9-CM
593.5	Hydroureter	Diagnosis	ICD-9-CM
593.7	Vesicoureteral reflux	Diagnosis	ICD-9-CM
593.70	Vesicoureteral reflux, unspecified or without reflux nephropathy	Diagnosis	ICD-9-CM
593.71	Vesicoureteral reflux with reflux nephropathy, unilateral	Diagnosis	ICD-9-CM
593.72	Vesicoureteral reflux with reflux nephropathy, bilateral	Diagnosis	ICD-9-CM
593.73	Vesicoureteral reflux with reflux nephropathy, NOS	Diagnosis	ICD-9-CM
593.8	Other specified disorders of kidney and ureter	Diagnosis	ICD-9-CM
593.81	Vascular disorders of kidney	Diagnosis	ICD-9-CM
593.89	Other specified disorder of kidney and ureter	Diagnosis	ICD-9-CM
593.9	Unspecified disorder of kidney and ureter	Diagnosis	ICD-9-CM
599.6	Urinary obstruction	Diagnosis	ICD-9-CM
599.60	Urinary obstruction, unspecified	Diagnosis	ICD-9-CM
599.69	Urinary obstruction, not elsewhere classified	Diagnosis	ICD-9-CM
599.7	Hematuria	Diagnosis	ICD-9-CM
599.70	Hematuria, unspecified	Diagnosis	ICD-9-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
599.71	Gross hematuria	Diagnosis	ICD-9-CM
599.72	Microscopic hematuria	Diagnosis	ICD-9-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
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
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
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

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
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
N03.0	Chronic nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
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
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
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
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

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Code	Description	Code Category	Code Type
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
N08	Glomerular disorders in diseases classified elsewhere	Diagnosis	ICD-10-CM
N10	Acute pyelonephritis	Diagnosis	ICD-10-CM
N11.0	Nonobstructive reflux-associated chronic pyelonephritis	Diagnosis	ICD-10-CM
N11.1	Chronic obstructive pyelonephritis	Diagnosis	ICD-10-CM
N11.8	Other chronic tubulo-interstitial nephritis	Diagnosis	ICD-10-CM
N11.9	Chronic tubulo-interstitial nephritis, unspecified	Diagnosis	ICD-10-CM
N12	Tubulo-interstitial nephritis, not specified as acute or chronic	Diagnosis	ICD-10-CM
N13.0	Hydronephrosis with ureteropelvic junction obstruction	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
N13.4	Hydroureter	Diagnosis	ICD-10-CM
N13.5	Crossing vessel and stricture of ureter without hydronephrosis	Diagnosis	ICD-10-CM
N13.6	Pyonephrosis	Diagnosis	ICD-10-CM
N13.70	Vesicoureteral-reflux, unspecified	Diagnosis	ICD-10-CM
N13.71	Vesicoureteral-reflux without reflux nephropathy	Diagnosis	ICD-10-CM
N13.721	Vesicoureteral-reflux with reflux nephropathy without hydroureter, unilateral	Diagnosis	ICD-10-CM
N13.722	Vesicoureteral-reflux with reflux nephropathy without hydroureter, bilateral	Diagnosis	ICD-10-CM
N13.729	Vesicoureteral-reflux with reflux nephropathy without hydroureter, unspecified	Diagnosis	ICD-10-CM
N13.731	Vesicoureteral-reflux with reflux nephropathy with hydroureter, unilateral	Diagnosis	ICD-10-CM
N13.732	Vesicoureteral-reflux with reflux nephropathy with hydroureter, bilateral	Diagnosis	ICD-10-CM
N13.739	Vesicoureteral-reflux with reflux nephropathy with hydroureter, unspecified	Diagnosis	ICD-10-CM
N13.8	Other obstructive and reflux uropathy	Diagnosis	ICD-10-CM
N13.9	Obstructive and reflux uropathy, unspecified	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

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
N15.0	Balkan nephropathy	Diagnosis	ICD-10-CM
N15.1	Renal and perinephric abscess	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
N18.4	Chronic kidney disease, stage 4 (severe)	Diagnosis	ICD-10-CM
N18.5	Chronic kidney disease, stage 5	Diagnosis	ICD-10-CM
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
N25.89	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
N28.89	Other specified disorders of kidney and ureter	Diagnosis	ICD-10-CM
N28.9	Disorder of kidney and ureter, unspecified	Diagnosis	ICD-10-CM
N29	Other disorders of kidney and ureter in diseases classified elsewhere	Diagnosis	ICD-10-CM

Appendix D. Specifications Defining Parameters for this Request

This request executed the Cohort Identification and Descriptive Analysis (CIDA) tool, version 8.1.1, to examine utilization of N-Nitrosodimethylamine (NDMA) and N-Nitrosodiethylamine (NDEA) contaminated products, angiotensin-converting enzyme (ACE) inhibitors, calcium channel blockers, and other angiotensin II receptor blockers (ARBs) in the Sentinel Distributed Database (SDD).

Query period: January 1, 2010 - April 30, 2019
Coverage requirement: Medical and drug
Post-index enrollment requirement: 0 days
Enrollment gap: 45 days
Stockpiling: Default
Age groups: 18-44, 45-64, 65+ years
Stratifications: Year, age group, sex
Additional output: Censoring table; Distribution of Index Codes Output Indicator for index dispensings
Time to switch categories: 0-30, 31-60, 61-90, 91-120, 121-150, 151-180, 181-210, 211-240, 241-270, 271-300, 301-330, 331-360, 361+ days

	Pre-Index Enrollment	Exposure Group	Cohort definition	Washout period	Episode Gap	Episode Extension	Incidence Groups	Censoring Criteria
1	365 days	Recalled valsartan	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	Recalled valsartan	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation
2	365 days	Recalled valsartan NOT contaminated	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	Recalled valsartan NOT contaminated	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation
3	365 days	Contaminated valsartan (tested positive)	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	Contaminated valsartan (tested positive)	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation

Appendix D. Specifications Defining Parameters for this Request

Pre-Index Enrollment	Exposure Group	Cohort definition	Washout period	Episode Gap	Episode Extension	Incidence Groups	Censoring Criteria
4 365 days	NDMA contaminated valsartan (tested positive)	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	NDMA contaminated valsartan (tested positive)	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation
5 365 days	NDEA contaminated valsartan (tested positive)	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	NDEA contaminated valsartan (tested positive)	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation
6 365 days	Untamminated valsartan (tested negative) OR non-recalled valsartan	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	Untamminated valsartan (tested negative) OR non-recalled valsartan	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation
7 365 days	Untamminated valsartan (tested negative)	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	Untamminated valsartan (tested negative)	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation
8 365 days	Non-recalled valsartan	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	Non-recalled valsartan	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation

Appendix D. Specifications Defining Parameters for this Request

Pre-Index Enrollment	Exposure Group	Cohort definition	Washout period	Episode Gap	Episode Extension	Incidence Groups	Censoring Criteria	
9	365 days	ACE inhibitors	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	ACE inhibitors	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation
10	365 days	Calcium channel blockers	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	Calcium channel blockers	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation
11	365 days	ARBs (Excluding valsartan)	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	ARBs (Excluding valsartan)	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation
12	365 days	<u>All valsartan:</u> A) Recalled valsartan, B) Contaminated valsartan (tested positive), C) NDMA contaminated valsartan (tested positive), D) NDEA contaminated valsartan (tested positive), E) Recalled valsartan NOT contaminated, F) Uncontaminated valsartan (tested negative), G) Non-recalled valsartan	Cohort def 02: Cohort includes all valid exposure episodes during query period	365 days	15 days	15 days	<u>All valsartan:</u> A) Recalled valsartan, B) Contaminated valsartan (tested positive), C) NDMA contaminated valsartan (tested positive), D) NDEA contaminated valsartan (tested positive), E) Recalled valsartan NOT contaminated, F) Uncontaminated valsartan (tested negative), G) Non-recalled valsartan	*Death; *Data Partner End Date; *Query End Date; *Disenrollment; *Product discontinuation

International Classification of Diseases, Ninth Edition, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Edition, Clinical Modification (ICD-10-CM), Healthcare Common Procedure Coding System (HCPCS), and Current Procedural Terminology (CPT) codes are provided by Optum360. National Drug Codes (NDCs) are checked against First Data Bank's "National Drug Data File (NDDF®) Plus."