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

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

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

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Overview for Request: cder_mpl2p_wp060

Request ID: cder_mpl2p_wp060

Request Description: In this report we described characteristics of individuals with dispensings of short/rapid-acting insulin and a history of type 1 diabetes by chronic kidney disease (CKD) stage, and evaluated the association between CKD stage and diabetic ketoacidosis (DKA) in the Sentinel Distributed Database (SDD).

Sentinel Routine Querying Module: Cohort Identification and Descriptive Analysis (CIDA) module, version 14.0.1, with the Propensity Score Analysis (PSA) module and custom programming.

Data Source: We distributed this query to six Data Partners on November 21, 2024. These six Data Partners are a subset of the SDD. Data from Medicare patients having both fee-for-service medical coverage and Part D drug coverage are included. The study period included data from March 1, 2013 through February 29, 2024. Please see Appendix A for a list of dates of available data for each Data Partner.

Study Design: We identified individuals with prevalent use of short/rapid-acting insulin who had evidence of type 1 diabetes with chronic kidney disease stage 1 or 2 (reference group), stage 3 (exposure group), or stage 4 or 5 (exposure group). We evaluated the occurrence of diabetic ketoacidosis within 365 days among a cohort of users of any age. We then conducted a Propensity Score Analysis (PSA) comparing individuals with lower CKD stages (i.e., 1/2) to higher CKD stages (i.e., 3, 4/5, 3/4/5) using propensity score matching to adjust for confounding. We evaluated the occurrence of diabetic ketoacidosis in the 365 days after their short/rapid-acting insulin dispensing and estimated hazard ratios and 95% confidence intervals of the risk of diabetic ketoacidosis in patients with lower CKD stages compared to patients with higher CKD stages.

Exposures of Interest: We defined the exposure of interest, short/rapid-acting insulin, using outpatient dispensing data and National Drug Codes (NDCs) and Healthcare Common Procedure Coding System (HCPCS) procedure codes. Please see Appendix B for a list of generic and brand names of medical product and Appendix C for a list of HCPCS used to define exposure in this request.

Outcomes of Interest: We defined the outcome of interest as diabetic ketoacidosis (DKA) in the inpatient or emergency department care settings. Please see Appendix D for a list of the ICD-9-CM and ICD-10-CM codes used to define DKA in this report.

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. The following age groups were included in the cohort: <12, 12-18, 19-24, 25-44, 45-64, ≥65 years. We required all patients to have evidence of type 1 diabetes, which we defined as: in the 365 days to five days prior to the index dispensing, the proportion of type 1 diabetes codes to type 2 diabetes codes is greater than 50% AND in the 365 days to one day prior to the index dispensing there is evidence of short/rapid-acting insulin use AND NO evidence of non-insulin antidiabetics (excluding metformin).

Please see Appendix E for a list of Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes used to define inclusion criteria, and Appendix F for a list of generic and brand names of medical products.

Follow-up Time: We created exposure episodes based on the number of days of product supplied per dispensing in the outpatient pharmacy dispensing data. We bridged together episodes less than ten days apart and added ten days to the end of each episode. These "as treated" episodes are the time during which we assessed for outcomes. Follow-up began on the day of the index dispensing and continued until the first occurrence of any of the following: 1) end of exposure episode (up to 365 days), 2) death, 3) end of available Data Partner data, 4) query end date, 5) occurrence of diabetic ketoacidosis, or 6) switch to a different CKD stage.

Overview for Request: cder_mpl2p_wp060

Baseline Characteristics: We assessed the following characteristics on the date of the index dispensing: age, sex, race, ethnicity, and year. We assessed patients' healthcare utilization metrics, Charlson-Elixhauser combined comorbidity score¹, and Adapted Diabetes Complications Severity Index (aDCSI)² score in the 365 days prior to and including the index dispensing. We additionally assessed the following health characteristic and medication use covariates in the 365 days prior to the index dispensing: history of DKA, obesity/overweight, hypertension, hyperlipidemia, tobacco smoking, alcohol use, short/rapid-acting insulin, long/intermediate-acting insulin, combination insulin, insulin pump, metformin, continuous glucose monitoring, lipid lowering medication, alpha blockers, angiotensin II receptor blockers (ARBs), angiotensin-converting enzyme inhibitors (ACEIs), beta blockers, calcium channel blockers, diuretics, peripheral vasodilators, renin inhibitors, other anti-hypertensives, combination anti-hypertensives.

Evidence of CKD stage was defined as a baseline characteristic using a validated, hierarchical algorithm³ which required the following in the preceding 365 days:

- CKD stage 4/5: Code for CKD stage 4 or 5 OR dialysis code
- CKD stage 3: Code for CKD stage 3 OR any three CKD codes OR renal failure or CKD code and drug purchase (renal-specific drugs: phosphate binders, active vitamin D, sodium bicarbonate, and erythropoiesis-stimulating agents)
- CKD stage 1/2: No evidence of CKD stage 3, 4, or 5

Patients were sorted into exposure or comparator cohorts based on the presence of one of these CKD stage characteristics.

Please see Appendix G for a list of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Third Edition (CPT-3), Current Procedural Terminology, Second Edition (CPT-2), HCPCS, ICD-9-CM, ICD-10-CM, International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and revenue (RE) codes and Appendix H for a list of generic and brand names of medical products used to define baseline characteristics in this request.

Propensity Score Estimation: We fit a logistic regression model to estimate the propensity score (PS) based on the variables outlined in Appendices G and H. Appendix J lists the covariates that were included in the propensity score models. The Propensity Score Analysis (PSA) module was used to calculate the propensity scores and identify matched cohorts based on propensity scores within each Data Partner.

Matching: The matching ratio for the propensity score was 1:1. Patients in the exposed and comparator cohorts were nearest neighbor matched without replacement, to an exposed patient. The matching caliper was 0.050.

Analysis: For each comparison, we used Cox proportional hazards regression models to estimate hazard ratios and corresponding 95% confidence intervals for the unmatched analyses and the unconditional matched analyses. Subgroups of effect estimation included sex and age.

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

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

Propensity score models were run separately at each Data Partner. Data Partners in which propensity score models failed to converge were excluded from the relevant analyses.

Overview for Request: cder_mpl2p_wp060

Notes: Please contact the Sentinel Operations Center (info@sentinelssystem.org) for questions and to provide comments/suggestions for future enhancements to this document. For more information on the specific routine querying module utilized in this query, please refer to the documentation on Type 2 analyses within our documentation library accessible at <https://dev.sentinelssystem.org/projects/SENTINEL/repos/sentinel-routine-querying-tool-documentation/browse>

¹Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

²Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

³Friberg G, Gasparini A, Carrero JJ. A scheme based on ICD-10 diagnoses and drug prescriptions to stage chronic kidney disease severity in healthcare administrative records. *Clin Kidney J.* 2018; 11(2):254-258

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Figure 2d Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database (SDD) from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

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<u>Appendix G</u>	List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request
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<u>Appendix I</u>	Specifications Defining Parameters Used in this Request
<u>Appendix J</u>	Specifications Defining Covariate Parameters Used in this Request
<u>Appendix K</u>	Specifications Defining Risk Score and Utilization Parameters Used in this Request
<u>Appendix L</u>	Design Diagram of Cohort Entry Requirements, Index Exposure, and Event Outcome Assessment

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

*all terms may not be used in this report

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

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

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

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

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

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

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

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

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

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

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

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

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

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

*all terms may not be used in this report

Table 1a. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	38,583	100.0%	608,462	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	62.2	14.0	39.1	16.1	23.132	1.536
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	30	0.1%	51,822	8.5%	-8.439	-0.425
12-18 years	110	0.3%	80,831	13.3%	-12.999	-0.535
19-24 years	320	0.8%	60,701	10.0%	-9.147	-0.413
25-44 years	5,947	15.4%	181,430	29.8%	-14.404	-0.350
45-64 years	12,166	31.5%	132,847	21.8%	9.699	0.221
≥ 65 years	20,010	51.9%	100,831	16.6%	35.291	0.801
Sex [*]						
Female	19,869	51.5%	303,219	49.8%	1.663	0.033
Male	18,714	48.5%	305,243	50.2%	-1.663	-0.033
Race ^{*,2}						
American Indian or Alaska Native	221	0.6%	3,494	0.6%	-0.001	-0.000
Asian	368	1.0%	6,099	1.0%	-0.049	-0.005
Black or African American	4,485	11.6%	54,528	9.0%	2.663	0.088
Multi-racial	77	0.2%	4,610	0.8%	-0.558	-0.081
Native Hawaiian or Other Pacific Islander	67	0.2%	922	0.2%	0.022	0.005
Unknown	5,826	15.1%	226,455	37.2%	-22.118	-0.520
White	27,539	71.4%	312,354	51.3%	20.041	0.421
Hispanic origin						
Yes	1,143	3.0%	41,638	6.8%	-3.881	-0.180
No	31,258	81.0%	356,046	58.5%	22.499	0.505
Unknown	6,182	16.0%	210,778	34.6%	-18.619	-0.438

Table 1a. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	6,491	16.8%	82,259	13.5%	3.304	0.092
2014	4,121	10.7%	48,419	8.0%	2.723	0.094
2015	3,559	9.2%	55,163	9.1%	0.158	0.005
2016	3,560	9.2%	62,460	10.3%	-1.038	-0.035
2017	3,995	10.4%	85,369	14.0%	-3.676	-0.113
2018	3,370	8.7%	63,186	10.4%	-1.650	-0.056
2019	2,924	7.6%	52,321	8.6%	-1.020	-0.037
2020	3,032	7.9%	52,868	8.7%	-0.830	-0.030
2021	3,215	8.3%	61,189	10.1%	-1.724	-0.060
2022	2,296	6.0%	22,513	3.7%	2.251	0.105
2023	1,929	5.0%	20,859	3.4%	1.571	0.078
2024	91	0.2%	1,856	0.3%	-0.069	-0.013
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI)*, ³	5.1	2.3	1.4	1.7	3.789	1.898
Combined comorbidity score* ⁴	5.4	2.9	1.5	1.8	3.898	1.600
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA)*	4,924	12.8%	82,270	13.5%	-0.759	-0.022
Overweight/Obesity*	9,531	24.7%	65,690	10.8%	13.907	0.370
Hypertension*	35,426	91.8%	216,475	35.6%	56.240	1.442
Hyperlipidemia*	30,963	80.3%	237,749	39.1%	41.177	0.925
Tobacco Smoking*	12,112	31.4%	102,108	16.8%	14.611	0.347
Alcohol Use*	2,022	5.2%	21,981	3.6%	1.628	0.079

Table 1a. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	32,057	83.1%	532,275	87.5%	-4.393	-0.124
Long/Intermediate-Acting Insulin*	27,011	70.0%	424,741	69.8%	0.202	0.004
Combination Insulin*	1,799	4.7%	16,960	2.8%	1.875	0.099
Insulin Pump*	4,179	10.8%	133,583	22.0%	-11.123	-0.304
Metformin*	3,062	7.9%	52,286	8.6%	-0.657	-0.024
Continuous Glucose Monitoring*	7,879	20.4%	143,036	23.5%	-3.087	-0.075
Lipid Lowering Medications*	29,249	75.8%	209,669	34.5%	41.349	0.914
Alpha Blockers*	3,771	9.8%	18,049	3.0%	6.807	0.281
Angiotensin II Receptor Blockers (ARBs)*	10,113	26.2%	49,792	8.2%	18.028	0.492
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	16,875	43.7%	142,350	23.4%	20.342	0.441
Beta Blockers*	20,294	52.6%	81,134	13.3%	39.264	0.919
Calcium Channel Blockers*	14,503	37.6%	52,043	8.6%	29.036	0.734
Diuretics*	18,667	48.4%	67,027	11.0%	37.366	0.896
Peripheral Vasodilators*	0	0.0%	*****	*****	NaN	NaN
Renin Inhibitors*	59	0.2%	238	0.0%	0.114	0.037
Other Anti-Hypertensives*	3,504	9.1%	5,383	0.9%	8.197	0.384
Combination Anti-Hypertensives*	3,623	9.4%	24,137	4.0%	5.423	0.219

Table 1a. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	28.4	21.9	15.4	17.3	13.013	0.659
Mean number of emergency room encounters*	1.3	3.0	0.8	2.0	0.479	0.189
Mean number of inpatient hospital encounters*	0.9	1.9	0.4	1.1	0.561	0.357
Mean number of non-acute institutional encounters*	0.2	0.8	0.0	0.3	0.188	0.323
Mean number of other ambulatory encounters*	20.2	35.5	9.8	25.2	10.360	0.336
Mean number of filled prescriptions*	64.8	49.2	33.7	32.6	31.059	0.744
Mean number of generics dispensed*	15.0	7.2	8.8	5.8	6.223	0.949
Mean number of unique drug classes dispensed*	13.0	6.2	7.4	5.1	5.626	0.993

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1b. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	34,002	88.1%	34,002	5.6%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	61.6	14.1	62.5	13.7	-0.895	-0.065
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	30	0.1%	41	0.1%	-0.032	-0.010
12-18 years	110	0.3%	112	0.3%	-0.006	-0.001
19-24 years	318	0.9%	299	0.9%	0.056	0.006
25-44 years	5,591	16.4%	4,568	13.4%	3.009	0.084
45-64 years	10,864	32.0%	11,489	33.8%	-1.838	-0.039
≥ 65 years	17,089	50.3%	17,493	51.4%	-1.188	-0.024
Sex [*]						
Female	17,562	51.6%	17,638	51.9%	-0.224	-0.004
Male	16,440	48.4%	16,364	48.1%	0.224	0.004
Race ^{*,2}						
American Indian or Alaska Native	203	0.6%	180	0.5%	0.068	0.009
Asian	327	1.0%	321	0.9%	0.018	0.002
Black or African American	3,907	11.5%	3,964	11.7%	-0.168	-0.005
Multi-racial	72	0.2%	79	0.2%	-0.021	-0.004
Native Hawaiian or Other Pacific Islander	55	0.2%	64	0.2%	-0.026	-0.006
Unknown	5,395	15.9%	5,296	15.6%	0.291	0.008
White	24,043	70.7%	24,098	70.9%	-0.162	-0.004
Hispanic origin						
Yes	1,053	3.1%	1,019	3.0%	0.100	0.006
No	27,273	80.2%	27,349	80.4%	-0.224	-0.006
Unknown	5,676	16.7%	5,634	16.6%	0.124	0.003

Table 1b. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	5,817	17.1%	5,952	17.5%	-0.397	-0.010
2014	3,672	10.8%	3,716	10.9%	-0.129	-0.004
2015	3,163	9.3%	3,143	9.2%	0.059	0.002
2016	3,166	9.3%	3,150	9.3%	0.047	0.002
2017	3,543	10.4%	3,454	10.2%	0.262	0.009
2018	2,951	8.7%	2,911	8.6%	0.118	0.004
2019	2,572	7.6%	2,557	7.5%	0.044	0.002
2020	2,624	7.7%	2,542	7.5%	0.241	0.009
2021	2,805	8.2%	2,833	8.3%	-0.082	-0.003
2022	1,938	5.7%	1,967	5.8%	-0.085	-0.004
2023	1,669	4.9%	1,704	5.0%	-0.103	-0.005
2024	82	0.2%	73	0.2%	0.026	0.006
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI)*, ³	4.8	2.1	4.9	2.3	-0.029	-0.013
Combined comorbidity score* ⁴	5.0	2.6	5.0	3.2	0.029	0.010
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA)*	4,358	12.8%	4,527	13.3%	-0.497	-0.015
Overweight/Obesity*	7,939	23.3%	7,953	23.4%	-0.041	-0.001
Hypertension*	30,876	90.8%	31,746	93.4%	-2.559	-0.095
Hyperlipidemia*	26,787	78.8%	27,222	80.1%	-1.279	-0.032
Tobacco Smoking*	10,428	30.7%	10,692	31.4%	-0.776	-0.017
Alcohol Use*	1,791	5.3%	1,961	5.8%	-0.500	-0.022

Table 1b. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	28,310	83.3%	28,342	83.4%	-0.094	-0.003
Long/Intermediate-Acting Insulin*	23,764	69.9%	23,780	69.9%	-0.047	-0.001
Combination Insulin*	1,559	4.60%	1,562	4.6%	-0.009	-0.000
Insulin Pump*	3,804	11.2%	3,773	11.1%	0.091	0.003
Metformin*	2,848	8.4%	3,041	8.9%	-0.568	-0.020
Continuous Glucose Monitoring*	6,906	20.3%	6,834	20.1%	0.212	0.005
Lipid Lowering Medications*	25,325	74.5%	25,776	75.8%	-1.326	-0.031
Alpha Blockers*	3,097	9.1%	2,994	8.8%	0.303	0.011
Angiotensin II Receptor Blockers (ARBs)*	8,552	25.2%	8,675	25.5%	-0.362	-0.008
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	14,979	44.1%	15,475	45.5%	-1.459	-0.029
Beta Blockers*	17,004	50.0%	17,291	50.9%	-0.844	-0.017
Calcium Channel Blockers*	12,148	35.7%	12,067	35.5%	0.238	0.005
Diuretics*	15,481	45.5%	15,495	45.6%	-0.041	-0.001
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	47	0.1%	48	0.1%	-0.003	-0.001
Other Anti-Hypertensives*	2,580	7.6%	2,264	6.7%	0.929	0.036
Combination Anti-Hypertensives*	3,200	9.4%	3,303	9.7%	-0.303	-0.010

Table 1b. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	27.4	21.7	27.5	21.1	-0.146	-0.007
Mean number of emergency room encounters*	1.3	3.0	1.3	2.6	-0.031	-0.011
Mean number of inpatient hospital encounters*	0.9	2.0	0.9	1.6	-0.018	-0.010
Mean number of non-acute institutional encounters*	0.2	0.7	0.2	0.6	0.002	0.003
Mean number of other ambulatory encounters*	19.4	35.5	19.8	32.4	-0.361	-0.011
Mean number of filled prescriptions*	63.5	48.6	64.5	49.1	-0.971	-0.020
Mean number of generics dispensed*	14.7	7.2	14.8	7.0	-0.172	-0.024
Mean number of unique drug classes dispensed*	12.7	6.2	12.9	6.0	-0.155	-0.026

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1c. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	17,562	100.0%	17,638	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	62.5	14.2	63.5	13.8	-1.020	-0.073
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	17	0.1%	26	0.1%	-0.051	-0.014
12-18 years	62	0.4%	50	0.3%	0.070	0.012
19-24 years	172	1.0%	168	1.0%	0.027	0.003
25-44 years	2,747	15.6%	2,190	12.4%	3.225	0.093
45-64 years	5,205	29.6%	5,644	32.0%	-2.361	-0.051
≥ 65 years	9,359	53.3%	9,560	54.2%	-0.910	-0.018
Sex [*]						
Female	17,562	100.0%	17,638	100.0%	0.000	NaN
Male	0	0.0%	0	0.0%	NaN	NaN
Race ^{*,2}						
American Indian or Alaska Native	113	0.6%	89	0.5%	0.139	0.018
Asian	158	0.9%	161	0.9%	-0.013	-0.001
Black or African American	2,085	11.9%	2,329	13.2%	-1.332	-0.040
Multi-racial	30	0.2%	29	0.2%	0.006	0.002
Native Hawaiian or Other Pacific Islander	27	0.2%	25	0.1%	0.012	0.003
Unknown	2,497	14.2%	2,503	14.2%	0.027	0.001
White	12,652	72.0%	12,502	70.9%	1.161	0.026
Hispanic origin						
Yes	547	3.1%	551	3.1%	-0.009	-0.001
No	14,388	81.9%	14,463	82.0%	-0.072	-0.002
Unknown	2,627	15.0%	2,624	14.9%	0.081	0.002

Table 1c. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	3,040	17.3%	3,242	18.4%	-1.071	-0.028
2014	1,864	10.6%	1,926	10.9%	-0.306	-0.010
2015	1,545	8.8%	1,713	9.7%	-0.915	-0.032
2016	1,665	9.5%	1,658	9.4%	0.081	0.003
2017	1,828	10.4%	1,776	10.1%	0.340	0.011
2018	1,521	8.7%	1,485	8.4%	0.241	0.009
2019	1,301	7.4%	1,264	7.2%	0.242	0.009
2020	1,346	7.7%	1,291	7.3%	0.345	0.013
2021	1,457	8.3%	1,420	8.1%	0.246	0.009
2022	1,036	5.9%	976	5.5%	0.366	0.016
2023	911	5.2%	851	4.8%	0.363	0.017
2024	48	0.3%	36	0.2%	0.069	0.014
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.8	2.1	4.8	2.3	-0.011	-0.005
Combined comorbidity score ^{*,4}	5.1	2.7	5.2	3.2	-0.008	-0.003
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	2,317	13.2%	2,433	13.8%	-0.601	-0.018
Overweight/Obesity [*]	4,666	26.6%	4,687	26.6%	-0.005	-0.000
Hypertension [*]	15,843	90.2%	16,423	93.1%	-2.900	-0.105
Hyperlipidemia [*]	13,764	78.4%	14,025	79.5%	-1.142	-0.028
Tobacco Smoking [*]	5,043	28.7%	5,074	28.8%	-0.052	-0.001
Alcohol Use [*]	699	4.0%	743	4.2%	-0.232	-0.012

Table 1c. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	14,578	83.0%	14,704	83.4%	-0.357	-0.010
Long/Intermediate-Acting Insulin*	12,153	69.2%	12,319	69.8%	-0.643	-0.014
Combination Insulin*	806	4.6%	842	4.8%	-0.184	-0.009
Insulin Pump*	2,112	12.0%	1,990	11.3%	0.744	0.023
Metformin*	1,519	8.6%	1,628	9.2%	-0.581	-0.020
Continuous Glucose Monitoring*	3,728	21.2%	3,509	19.9%	1.333	0.033
Lipid Lowering Medications*	12,846	73.1%	13,166	74.6%	-1.499	-0.034
Alpha Blockers*	1,357	7.7%	1,412	8.0%	-0.279	-0.010
Angiotensin II Receptor Blockers (ARBs)*	4,747	27.0%	4,857	27.5%	-0.507	-0.011
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	7,240	41.2%	7,466	42.3%	-1.104	-0.022
Beta Blockers*	8,672	49.4%	8,970	50.9%	-1.477	-0.030
Calcium Channel Blockers*	5,932	33.8%	6,363	36.1%	-2.298	-0.048
Diuretics*	8,551	48.7%	8,794	49.9%	-1.168	-0.023
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	27	0.2%	27	0.2%	0.001	0.000
Other Anti-Hypertensives*	1,271	7.2%	1,191	6.8%	0.485	0.019
Combination Anti-Hypertensives*	1,657	9.4%	1,690	9.6%	-0.146	-0.005

Table 1c. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	28.5	22.0	28.4	21.3	0.156	0.007
Mean number of emergency room encounters*	1.3	2.9	1.4	2.8	-0.046	-0.016
Mean number of inpatient hospital encounters*	0.9	2.0	0.9	1.6	-0.016	-0.009
Mean number of non-acute institutional encounters*	0.2	0.7	0.2	0.7	-0.006	-0.008
Mean number of other ambulatory encounters*	21.2	37.7	21.5	34.0	-0.305	-0.008
Mean number of filled prescriptions*	67.8	51.1	69.5	51.4	-1.711	-0.033
Mean number of generics dispensed*	15.7	7.6	15.9	7.3	-0.147	-0.020
Mean number of unique drug classes dispensed*	13.7	6.5	13.8	6.2	-0.131	-0.021

*Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1d. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	16,403	93.4%	16,403	93.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	63.3	14.1	63.4	13.8	-0.094	-0.007
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	*****	*****	*****	*****	-0.091	-0.028
12-18 years	*****	*****	*****	*****	-0.049	-0.009
19-24 years	136	0.8%	164	1.0%	-0.171	-0.018
25-44 years	2,338	14.3%	2,077	12.7%	1.591	0.047
45-64 years	4,869	29.7%	5,144	31.4%	-1.677	-0.036
≥ 65 years	9,010	54.9%	8,945	54.5%	0.396	0.008
Sex [*]						
Female	16,403	100.0%	16,403	100.0%	0.000	NaN
Male	0	0.0%	0	0.0%	NaN	NaN
Race ^{*,2}						
American Indian or Alaska Native	83	0.5%	83	0.5%	0.000	0.000
Asian	147	0.9%	142	0.9%	0.030	0.003
Black or African American	2,002	12.2%	2,014	12.3%	-0.073	-0.002
Multi-racial	24	0.1%	27	0.2%	-0.018	-0.005
Native Hawaiian or Other Pacific Islander	20	0.1%	21	0.1%	-0.006	-0.002
Unknown	2,190	13.4%	2,182	13.3%	0.049	0.001
White	11,937	72.8%	11,934	72.8%	0.018	0.000
Hispanic origin						
Yes	487	3.0%	496	3.0%	-0.055	-0.003
No	13,609	83.0%	13,616	83.0%	-0.043	-0.001
Unknown	2,307	14.1%	2,291	14.0%	0.098	0.003

Table 1d. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Demographic Characteristics						
Year*						
2013	2,959	18.0%	2,980	18.2%	-0.128	-0.003
2014	1,807	11.0%	1,810	11.0%	-0.018	-0.001
2015	1,497	9.1%	1,522	9.3%	-0.152	-0.005
2016	1,549	9.4%	1,552	9.5%	-0.018	-0.001
2017	1,657	10.1%	1,649	10.1%	0.049	0.002
2018	1,389	8.5%	1,377	8.4%	0.073	0.003
2019	1,186	7.2%	1,188	7.2%	-0.012	-0.000
2020	1,224	7.5%	1,206	7.4%	0.110	0.004
2021	1,334	8.1%	1,336	8.1%	-0.012	-0.000
2022	948	5.8%	941	5.7%	0.043	0.002
2023	815	5.0%	806	4.9%	0.055	0.003
2024	38	0.2%	36	0.2%	0.012	0.003
Health Characteristics		Standard Deviation		Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI)*, ³	4.8	2.1	4.8	2.3	-0.014	-0.006
Combined comorbidity score* ⁴	5.2	2.7	5.2	3.2	-0.003	-0.001
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA)*	2,170	13.2%	2,189	13.3%	-0.116	-0.003
Overweight/Obesity*	4,403	26.8%	4,375	26.7%	0.171	0.004
Hypertension*	15,129	92.2%	15,202	92.7%	-0.445	-0.017
Hyperlipidemia*	13,062	79.6%	13,074	79.7%	-0.073	-0.002
Tobacco Smoking*	4,715	28.7%	4,736	28.9%	-0.128	-0.003
Alcohol Use*	664	4.0%	658	4.0%	0.037	0.002

Table 1d. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	13,638	83.1%	13,655	83.2%	-0.104	-0.003
Long/Intermediate-Acting Insulin*	11,413	69.6%	11,438	69.7%	-0.152	-0.003
Combination Insulin*	766	4.7%	777	4.7%	-0.067	-0.003
Insulin Pump*	1,804	11.0%	1,824	11.1%	-0.122	-0.004
Metformin*	1,469	9.0%	1,454	8.9%	0.091	0.003
Continuous Glucose Monitoring*	3,345	20.4%	3,298	20.1%	0.287	0.007
Lipid Lowering Medications*	12,177	74.2%	12,190	74.3%	-0.079	-0.002
Alpha Blockers*	1,284	7.8%	1,271	7.7%	0.079	0.003
Angiotensin II Receptor Blockers (ARBs)*	4,499	27.4%	4,485	27.3%	0.085	0.002
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	6,831	41.6%	6,835	41.7%	-0.024	-0.000
Beta Blockers*	8,273	50.4%	8,294	50.6%	-0.128	-0.003
Calcium Channel Blockers*	5,730	34.9%	5,720	34.9%	0.061	0.001
Diuretics*	8,143	49.6%	8,179	49.9%	-0.219	-0.004
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	25	0.2%	23	0.1%	0.012	0.003
Other Anti-Hypertensives*	1,167	7.1%	1,132	6.9%	0.213	0.008
Combination Anti-Hypertensives*	1,579	9.6%	1,564	9.5%	0.091	0.003

Table 1d. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	28.5	21.7	28.5	21.3	-0.009	-0.000
Mean number of emergency room encounters*	1.3	2.9	1.3	2.6	-0.002	-0.001
Mean number of inpatient hospital encounters*	0.9	1.9	0.9	1.6	-0.007	-0.004
Mean number of non-acute institutional encounters*	0.2	0.7	0.2	0.7	-0.002	-0.003
Mean number of other ambulatory encounters*	21.3	37.8	21.2	33.8	0.064	0.002
Mean number of filled prescriptions*	68.8	51.6	68.9	51.0	-0.174	-0.003
Mean number of generics dispensed*	15.8	7.6	15.8	7.3	-0.012	-0.002
Mean number of unique drug classes dispensed*	13.7	6.4	13.8	6.2	-0.010	-0.002

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1e. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	16,440	100.0%	16,364	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	60.6	13.9	61.4	13.4	-0.751	-0.055
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	13	0.1%	15	0.1%	-0.013	-0.004
12-18 years	48	0.3%	62	0.4%	-0.087	-0.015
19-24 years	146	0.9%	131	0.8%	0.088	0.010
25-44 years	2,844	17.3%	2,378	14.5%	2.767	0.076
45-64 years	5,659	34.4%	5,845	35.7%	-1.297	-0.027
≥ 65 years	7,730	47.0%	7,933	48.5%	-1.459	-0.029
Sex [*]						
Female	0	0.0%	0	0.0%	NaN	NaN
Male	16,440	100.0%	16,364	100.0%	0.000	NaN
Race ^{*,2}						
American Indian or Alaska Native	90	0.5%	91	0.6%	-0.009	-0.001
Asian	169	1.0%	160	1.0%	0.050	0.005
Black or African American	1,822	11.1%	1,635	10.0%	1.091	0.036
Multi-racial	42	0.3%	50	0.3%	-0.050	-0.009
Native Hawaiian or Other Pacific Islander	28	0.2%	39	0.2%	-0.068	-0.015
Unknown	2,898	17.6%	2,793	17.1%	0.560	0.015
White	11,391	69.3%	11,596	70.9%	-1.575	-0.034
Hispanic origin						
Yes	506	3.1%	468	2.9%	0.218	0.013
No	12,885	78.4%	12,886	78.7%	-0.370	-0.009
Unknown	3,049	18.5%	3,010	18.4%	0.152	0.004

Table 1e. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	2,777	16.9%	2,710	16.6%	0.331	0.009
2014	1,808	11.0%	1,790	10.9%	0.059	0.002
2015	1,618	9.8%	1,430	8.7%	1.103	0.038
2016	1,501	9.1%	1,492	9.1%	0.013	0.000
2017	1,715	10.4%	1,678	10.3%	0.178	0.006
2018	1,430	8.7%	1,426	8.7%	-0.016	-0.001
2019	1,271	7.7%	1,293	7.9%	-0.170	-0.006
2020	1,278	7.8%	1,251	7.6%	0.129	0.005
2021	1,348	8.2%	1,413	8.6%	-0.435	-0.016
2022	902	5.5%	991	6.1%	-0.569	-0.024
2023	758	4.6%	853	5.2%	-0.602	-0.028
2024	34	0.2%	37	0.2%	-0.019	-0.004
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.9	2.1	5.0	2.3	-0.048	-0.022
Combined comorbidity score ^{*,4}	4.9	2.6	4.8	3.2	0.070	0.024
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	2,041	12.4%	2,094	12.8%	-0.382	-0.011
Overweight/Obesity [*]	3,273	19.9%	3,266	20.0%	-0.050	-0.001
Hypertension [*]	15,033	91.4%	15,323	93.6%	-2.197	-0.084
Hyperlipidemia [*]	13,023	79.2%	13,197	80.6%	-1.431	-0.036
Tobacco Smoking [*]	5,385	32.8%	5,618	34.3%	-1.576	-0.033
Alcohol Use [*]	1,092	6.6%	1,218	7.4%	-0.801	-0.031

Table 1e. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	13,732	83.5%	13,638	83.3%	0.186	0.005
Long/Intermediate-Acting Insulin*	11,611	70.6%	11,461	70.0%	0.589	0.013
Combination Insulin*	753	4.6%	720	4.4%	0.180	0.009
Insulin Pump*	1,692	10.3%	1,783	10.9%	-0.604	-0.020
Metformin*	1,329	8.1%	1,413	8.6%	-0.551	-0.020
Continuous Glucose Monitoring*	3,178	19.3%	3,325	20.3%	-0.988	-0.025
Lipid Lowering Medications*	12,479	75.9%	12,610	77.1%	-1.153	-0.027
Alpha Blockers*	1,740	10.6%	1,582	9.7%	0.916	0.030
Angiotensin II Receptor Blockers (ARBs)*	3,805	23.1%	3,818	23.3%	-0.187	-0.004
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	7,739	47.1%	8,009	48.9%	-1.869	-0.037
Beta Blockers*	8,332	50.7%	8,321	50.8%	-0.168	-0.003
Calcium Channel Blockers*	6,216	37.8%	5,704	34.9%	2.953	0.061
Diuretics*	6,930	42.2%	6,701	40.9%	1.204	0.024
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	20	0.1%	21	0.1%	-0.007	-0.002
Other Anti-Hypertensives*	1,309	8.0%	1,073	6.6%	1.405	0.054
Combination Anti-Hypertensives*	1,543	9.4%	1,613	9.9%	-0.471	-0.016

Table 1e. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	26.2	21.2	26.6	20.9	-0.461	-0.022
Mean number of emergency room encounters*	1.2	3.1	1.2	2.4	-0.013	-0.005
Mean number of inpatient hospital encounters*	0.9	1.9	0.9	1.5	-0.021	-0.012
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.6	0.010	0.015
Mean number of other ambulatory encounters*	17.6	33.0	18.0	30.4	-0.405	-0.013
Mean number of filled prescriptions*	58.9	45.3	59.0	45.9	-0.132	-0.003
Mean number of generics dispensed*	13.5	6.6	13.7	6.4	-0.190	-0.029
Mean number of unique drug classes dispensed*	11.7	5.7	11.9	5.5	-0.173	-0.031

*Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1f. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number	Percent	Number	Percent		
Unique patients	14,981	91.1%	14,981	91.5%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	61.4	13.7	61.4	13.6	0.009	0.001
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	*****	*****	*****	*****	-0.033	-0.012
12-18 years	*****	*****	*****	*****	-0.207	-0.037
19-24 years	101	0.7%	128	0.9%	-0.180	-0.021
25-44 years	2,399	16.0%	2,221	14.8%	1.188	0.033
45-64 years	5,144	34.3%	5,247	35.0%	-0.688	-0.014
≥ 65 years	7,296	48.7%	7,308	48.8%	-0.080	-0.002
Sex [*]						
Female	0	0.0%	0	0.0%	NaN	NaN
Male	14,981	100.0%	14,981	100.0%	0.000	NaN
Race ^{*,2}						
American Indian or Alaska Native	70	0.5%	73	0.5%	-0.020	-0.003
Asian	141	0.9%	149	1.0%	-0.053	-0.005
Black or African American	1,560	10.4%	1,560	10.4%	0.000	0.000
Multi-racial	39	0.3%	40	0.3%	-0.007	-0.001
Native Hawaiian or Other Pacific Islander	26	0.2%	26	0.2%	0.000	0.000
Unknown	2,480	16.6%	2,452	16.4%	0.187	0.005
White	10,665	71.2%	10,681	71.3%	-0.107	-0.002
Hispanic origin						
Yes	438	2.9%	427	2.9%	0.073	0.004
No	11,912	79.5%	11,934	79.7%	-0.147	-0.004
Unknown	2,631	17.6%	2,620	17.5%	0.073	0.002

Table 1f. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Demographic Characteristics						
Year*						
2013	2,573	17.2%	2,578	17.2%	-0.033	-0.001
2014	1,670	11.1%	1,684	11.2%	-0.093	-0.003
2015	1,387	9.3%	1,361	9.1%	0.174	0.006
2016	1,370	9.1%	1,374	9.2%	-0.027	-0.001
2017	1,544	10.3%	1,530	10.2%	0.093	0.003
2018	1,294	8.6%	1,286	8.6%	0.053	0.002
2019	1,169	7.8%	1,186	7.9%	-0.113	-0.004
2020	1,136	7.6%	1,144	7.6%	-0.053	-0.002
2021	1,241	8.3%	1,235	8.2%	0.040	0.001
2022	848	5.7%	845	5.6%	0.020	0.001
2023	722	4.8%	729	4.9%	-0.047	-0.002
2024	27	0.2%	29	0.2%	-0.013	-0.003
Health Characteristics						
	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI)*, ³	4.9	2.1	4.9	2.3	0.008	0.003
Combined comorbidity score* ⁴	4.9	2.6	4.8	3.2	0.027	0.009
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA)*	1,830	12.2%	1,853	12.4%	-0.154	-0.005
Overweight/Obesity*	3,006	20.1%	3,019	20.2%	-0.087	-0.002
Hypertension*	13,931	93.0%	13,954	93.1%	-0.154	-0.006
Hyperlipidemia*	12,077	80.6%	12,070	80.6%	0.047	0.001
Tobacco Smoking*	5,057	33.8%	5,039	33.6%	0.120	0.003
Alcohol Use*	1,040	6.9%	1,032	6.9%	0.053	0.002

Table 1f. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	12,492	83.4%	12,487	83.4%	0.033	0.001
Long/Intermediate-Acting Insulin*	10,552	70.4%	10,519	70.2%	0.220	0.005
Combination Insulin*	668	4.5%	676	4.5%	-0.053	-0.003
Insulin Pump*	1,505	10.0%	1,508	10.1%	-0.020	-0.001
Metformin*	1,251	8.4%	1,259	8.4%	-0.053	-0.002
Continuous Glucose Monitoring*	2,915	19.5%	2,925	19.5%	-0.067	-0.002
Lipid Lowering Medications*	11,492	76.7%	11,507	76.8%	-0.100	-0.002
Alpha Blockers*	1,494	10.0%	1,505	10.0%	-0.073	-0.002
Angiotensin II Receptor Blockers (ARBs)*	3,457	23.1%	3,461	23.1%	-0.027	-0.001
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	7,193	48.0%	7,203	48.1%	-0.067	-0.001
Beta Blockers*	7,600	50.7%	7,620	50.9%	-0.134	-0.003
Calcium Channel Blockers*	5,445	36.3%	5,443	36.3%	0.013	0.000
Diuretics*	6,259	41.8%	6,253	41.7%	0.040	0.001
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	19	0.1%	19	0.1%	0.000	0.000
Other Anti-Hypertensives*	1,047	7.0%	1,047	7.0%	0.000	0.000
Combination Anti-Hypertensives*	1,440	9.6%	1,438	9.6%	0.013	0.000

Table 1f. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	26.5	21.4	26.4	20.9	0.164	0.008
Mean number of emergency room encounters*	1.2	3.1	1.2	2.3	0.021	0.008
Mean number of inpatient hospital encounters*	0.9	1.9	0.9	1.5	0.004	0.002
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.6	0.003	0.004
Mean number of other ambulatory encounters*	17.7	33.2	17.6	29.3	0.084	0.003
Mean number of filled prescriptions*	59.2	45.2	59.1	46.0	0.077	0.002
Mean number of generics dispensed*	13.6	6.6	13.6	6.4	0.021	0.003
Mean number of unique drug classes dispensed*	11.8	5.7	11.8	5.5	0.014	0.002

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1g. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics ¹	Number	Percent	Number	Percent		
Unique patients	30	100.0%	41	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	8.5	2.8	8.1	2.7	0.345	0.125
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	30	100.0%	41	100.0%	0.000	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	17	56.7%	26	63.4%	-6.748	-0.138
Male	13	43.3%	15	36.6%	6.748	0.138
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	*****	*****	0.894	0.053
Asian	0	0.0%	*****	*****	NaN	NaN
Black or African American	*****	*****	*****	*****	-11.301	-0.403
Multi-racial	0	0.0%	0	0.0%	NaN	NaN
Native Hawaiian or Other Pacific Islander	0	0.0%	0	0.0%	NaN	NaN
Unknown	*****	*****	*****	*****	5.854	0.121
White	16	53.3%	17	41.5%	11.870	0.239
Hispanic origin						
Yes	*****	*****	*****	*****	6.911	0.205
No	18	60.0%	28	68.3%	-8.293	-0.174
Unknown	*****	*****	*****	*****	1.382	0.033

Table 1g. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Demographic Characteristics						
Year*						
2013	*****	*****	0	0.0%	NaN	NaN
2014	*****	*****	0	0.0%	NaN	NaN
2015	*****	*****	*****	*****	7.561	0.317
2016	*****	*****	*****	*****	-10.407	-0.326
2017	*****	*****	*****	*****	-4.634	-0.141
2018	*****	*****	*****	*****	-7.073	-0.208
2019	*****	*****	*****	*****	6.911	0.205
2020	*****	*****	*****	*****	-14.390	-0.388
2021	*****	*****	*****	*****	5.366	0.142
2022	*****	*****	0	0.0%	NaN	NaN
2023	0	0.0%	0	0.0%	NaN	NaN
2024	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
	Mean	Standard Deviation	Men	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI)*, ³	2.3	1.2	2.9	2.2	-0.611	-0.348
Combined comorbidity score* ⁴	4.0	2.0	5.4	3.9	-1.333	-0.426
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA)*	*****	*****	*****	*****	-16.585	-0.375
Overweight/Obesity*	*****	*****	*****	*****	5.122	0.196
Hypertension*	*****	*****	*****	*****	-5.041	-0.111
Hyperlipidemia*	*****	*****	0	0.0%	NaN	NaN
Tobacco Smoking*	0	0.0%	0	0.0%	NaN	NaN
Alcohol Use*	*****	*****	0	0.0%	NaN	NaN

Table 1g. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	27	90.0%	29	70.7%	19.268	0.500
Long/Intermediate-Acting Insulin*	24	80.0%	31	75.6%	4.390	0.106
Combination Insulin*	0	0.0%	0	0.0%	NaN	NaN
Insulin Pump*	*****	*****	*****	*****	-3.740	-0.104
Metformin*	0	0.0%	0	0.0%	NaN	NaN
Continuous Glucose Monitoring*	*****	*****	*****	*****	-6.829	-0.162
Lipid Lowering Medications*	*****	*****	*****	*****	1.789	0.077
Alpha Blockers*	*****	*****	*****	*****	4.228	0.204
Angiotensin II Receptor Blockers (ARBs)*	*****	*****	0	0.0%	NaN	NaN
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	*****	*****	*****	*****	-5.935	-0.135
Beta Blockers*	*****	*****	*****	*****	1.789	0.077
Calcium Channel Blockers*	*****	*****	*****	*****	1.138	0.034
Diuretics*	*****	*****	*****	*****	-3.089	-0.113
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	0	0.0%	0	0.0%	NaN	NaN
Combination Anti-Hypertensives*	0	0.0%	0	0.0%	NaN	NaN

Table 1g. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	29.7	28.7	28.9	41.4	0.789	0.022
Mean number of emergency room encounters*	1.3	1.7	1.7	2.3	-0.416	-0.207
Mean number of inpatient hospital encounters*	1.1	1.6	1.6	2.0	-0.567	-0.318
Mean number of non-acute institutional encounters*	0.0	0.2	0.1	0.8	-0.089	-0.150
Mean number of other ambulatory encounters*	76.3	97.1	48.4	78.0	27.876	0.317
Mean number of filled prescriptions*	55.5	52.6	30.2	37.8	25.256	0.551
Mean number of generics dispensed*	13.3	7.6	11.0	9.3	2.291	0.270
Mean number of unique drug classes dispensed*	10.7	6.1	9.2	8.0	1.538	0.217

* Covariate included in the propensity score logistic regression model.

¹ Covariates in blue show a standardized difference greater than 0.1.

² Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³ Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴ Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1h. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	0 [†]	NaN	0 [†]	NaN		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years
12-18 years
19-24 years
25-44 years
45-64 years
≥ 65 years
Sex [*]						
Female
Male
Race ^{*,2}						
American Indian or Alaska Native
Asian
Black or African American
Multi-racial
Native Hawaiian or Other Pacific Islander
Unknown
White
Hispanic origin						
Yes
No
Unknown

Table 1h. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI)*, ³
Combined comorbidity score* ⁴
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA)*
Overweight/Obesity*
Hypertension*
Hyperlipidemia*
Tobacco Smoking*
Alcohol Use*

Table 1h. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*
Long/Intermediate-Acting Insulin*
Combination Insulin*
Insulin Pump*
Metformin*
Continuous Glucose Monitoring*
Lipid Lowering Medications*
Alpha Blockers*
Angiotensin II Receptor Blockers (ARBs)*
Angiotensin-Converting Enzyme Inhibitors (ACEis)*
Beta Blockers*
Calcium Channel Blockers*
Diuretics*
Peripheral Vasodilators*
Renin Inhibitors*
Other Anti-Hypertensives*
Combination Anti-Hypertensives*

Table 1h. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*
Mean number of emergency room encounters*
Mean number of inpatient hospital encounters*
Mean number of non-acute institutional encounters*
Mean number of other ambulatory encounters*
Mean number of filled prescriptions*
Mean number of generics dispensed*
Mean number of unique drug classes dispensed*

[†]As there are 0 matched patients, no data are presented throughout the rest of the table.

*Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1i. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	110	100.0%	112	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	16.4	1.9	15.9	1.9	0.594	0.311
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	110	100.0%	112	100.0%	0.000	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	62	56.4%	50	44.6%	11.721	0.236
Male	48	43.6%	62	55.4%	-11.721	-0.236
Race ^{*,2}						
American Indian or Alaska Native	0	0.0%	*****	*****	NaN	NaN
Asian	*****	*****	*****	*****	-0.860	-0.058
Black or African American	*****	*****	*****	*****	-0.601	-0.016
Multi-racial	0	0.0%	0	0.0%	NaN	NaN
Native Hawaiian or Other Pacific Islander	0	0.0%	*****	*****	NaN	NaN
Unknown	56	50.9%	55	49.1%	1.802	0.036
White	34	30.9%	33	29.5%	1.445	0.031
Hispanic origin						
Yes	21	19.1%	21	18.8%	0.341	0.009
No	51	46.4%	57	50.9%	-4.529	-0.091
Unknown	38	34.5%	34	30.4%	4.188	0.090

Table 1i. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	*****	*****	*****	*****	4.578	0.233
2014	*****	*****	*****	*****	0.032	0.002
2015	*****	*****	*****	*****	1.071	0.037
2016	12	10.9%	13	11.6%	-0.698	-0.022
2017	18	16.4%	27	24.1%	-7.744	-0.194
2018	16	14.5%	13	11.6%	2.938	0.087
2019	*****	*****	*****	*****	9.172	0.324
2020	14	12.7%	14	12.5%	0.227	0.007
2021	11	10.0%	21	18.8%	-8.750	-0.251
2022	*****	*****	*****	*****	0.925	0.080
2023	*****	*****	*****	*****	-1.753	-0.108
2024	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	2.8	1.3	2.9	2.2	-0.039	-0.022
Combined comorbidity score ^{*,4}	4.1	1.8	4.5	3.1	-0.346	-0.137
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	26	23.6%	41	36.6%	-12.971	-0.286
Overweight/Obesity [*]	13	11.8%	11	9.8%	1.997	0.064
Hypertension [*]	44	40.0%	55	49.1%	-9.107	-0.184
Hyperlipidemia [*]	17	15.5%	15	13.4%	2.062	0.059
Tobacco Smoking [*]	*****	*****	*****	*****	0.065	0.003
Alcohol Use [*]	*****	*****	*****	*****	0.032	0.002

Table 1i. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	96	87.3%	97	86.6%	0.666	0.020
Long/Intermediate-Acting Insulin*	85	77.3%	88	78.6%	-1.299	-0.031
Combination Insulin*	*****	*****	*****	*****	-2.614	-0.121
Insulin Pump*	24	21.8%	27	24.1%	-2.289	-0.054
Metformin*	*****	*****	*****	*****	4.594	0.212
Continuous Glucose Monitoring*	22	20.0%	37	33.0%	-13.036	-0.299
Lipid Lowering Medications*	16	14.5%	15	13.4%	1.153	0.033
Alpha Blockers*	*****	*****	*****	*****	-4.367	-0.165
Angiotensin II Receptor Blockers (ARBs)*	*****	*****	*****	*****	7.419	0.232
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	53	48.2%	32	28.6%	19.610	0.412
Beta Blockers*	*****	*****	*****	*****	-1.640	-0.057
Calcium Channel Blockers*	19	17.3%	21	18.8%	-1.477	-0.038
Diuretics*	*****	*****	*****	*****	-3.409	-0.110
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	*****	*****	*****	*****	-0.877	-0.076
Combination Anti-Hypertensives*	*****	*****	*****	*****	3.653	0.226

Table 1i. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	22.8	20.5	20.1	20.3	2.738	0.134
Mean number of emergency room encounters*	1.3	1.9	1.6	2.1	-0.226	-0.114
Mean number of inpatient hospital encounters*	1.2	2.4	1.2	1.6	0.094	0.046
Mean number of non-acute institutional encounters*	0.0	0.1	0.0	0.2	-0.027	-0.149
Mean number of other ambulatory encounters*	30.2	64.3	25.2	44.6	4.976	0.090
Mean number of filled prescriptions*	47.9	48.7	38.6	40.5	9.292	0.207
Mean number of generics dispensed*	11.7	8.1	10.3	7.8	1.379	0.174
Mean number of unique drug classes dispensed*	9.8	6.9	8.7	6.9	1.121	0.163

* Covariate included in the propensity score logistic regression model.

¹ Covariates in blue show a standardized difference greater than 0.1.

² Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³ Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴ Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1j. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number	Percent	Number	Percent		
Unique patients	33	30.0%	33	29.5%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	16.3	2.2	16.5	1.6	-0.216	-0.111
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	33	100.0%	33	100.0%	0.000	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	16	48.5%	17	51.5%	-3.030	-0.061
Male	17	51.5%	16	48.5%	3.030	0.061
Race ^{*,2}						
American Indian or Alaska Native	0	0.0%	0	0.0%	NaN	NaN
Asian	0	0.0%	0	0.0%	NaN	NaN
Black or African American	*****	*****	*****	*****	6.061	0.136
Multi-racial	0	0.0%	0	0.0%	NaN	NaN
Native Hawaiian or Other Pacific Islander	0	0.0%	0	0.0%	NaN	NaN
Unknown	11	33.3%	17	51.5%	-18.182	-0.374
White	*****	*****	*****	*****	12.121	0.266
Hispanic origin						
Yes	*****	*****	*****	*****	-9.091	-0.209
No	22	66.7%	16	48.5%	18.182	0.374
Unknown	*****	*****	*****	*****	-9.091	-0.246

Table 1j. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	0	0.0%	0	0.0%	NaN	NaN
2014	0	0.0%	0	0.0%	NaN	NaN
2015	*****	*****	*****	*****	0.000	0.000
2016	*****	*****	*****	*****	3.030	0.099
2017	*****	*****	*****	*****	-6.061	-0.136
2018	*****	*****	*****	*****	-6.061	-0.170
2019	*****	*****	*****	*****	3.030	0.099
2020	*****	*****	*****	*****	9.091	0.267
2021	*****	*****	*****	*****	-3.030	-0.081
2022	0	0.0%	0	0.0%	NaN	NaN
2023	0	0.0%	0	0.0%	NaN	NaN
2024	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI)*, ³	3.2	1.3	3.0	2.2	0.182	0.103
Combined comorbidity score* ⁴	4.5	1.6	4.2	2.9	0.303	0.130
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA)*	15	45.5%	16	48.5%	-3.030	-0.061
Overweight/Obesity*	*****	*****	*****	*****	-6.061	-0.212
Hypertension*	17	51.5%	19	57.6%	-6.061	-0.122
Hyperlipidemia*	*****	*****	*****	*****	-6.061	-0.170
Tobacco Smoking*	*****	*****	*****	*****	3.030	0.115
Alcohol Use*	*****	*****	*****	*****	-3.030	-0.146

Table 1j. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	28	84.8%	29	87.9%	-3.030	-0.088
Long/Intermediate-Acting Insulin*	29	87.9%	28	84.8%	3.030	0.088
Combination Insulin*	*****	*****	*****	*****	3.030	0.146
Insulin Pump*	*****	*****	*****	*****	-3.030	-0.081
Metformin*	0	0.0%	*****	*****	NaN	NaN
Continuous Glucose Monitoring*	*****	*****	*****	*****	3.030	0.081
Lipid Lowering Medications*	*****	*****	*****	*****	-6.061	-0.187
Alpha Blockers*	*****	*****	*****	*****	6.061	0.212
Angiotensin II Receptor Blockers (ARBs)*	*****	*****	*****	*****	6.061	0.212
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	*****	*****	*****	*****	-9.091	-0.192
Beta Blockers*	*****	*****	*****	*****	-3.030	-0.115
Calcium Channel Blockers*	*****	*****	*****	*****	9.091	0.230
Diuretics*	*****	*****	*****	*****	6.061	0.256
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	0	0.0%	0	0.0%	NaN	NaN
Combination Anti-Hypertensives*	0	0.0%	0	0.0%	NaN	NaN

Table 1j. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	22.9	16.0	22.6	27.2	0.273	0.012
Mean number of emergency room encounters*	1.8	2.0	2.0	2.6	-0.182	-0.079
Mean number of inpatient hospital encounters*	1.3	2.0	1.3	1.7	0.000	0.000
Mean number of non-acute institutional encounters*	0.0	0.2	0.0	0.2	0.000	0.000
Mean number of other ambulatory encounters*	27.7	41.0	40.5	68.3	-12.758	-0.226
Mean number of filled prescriptions*	48.1	46.6	48.8	52.9	-0.727	-0.015
Mean number of generics dispensed*	11.9	7.0	11.7	8.5	0.242	0.031
Mean number of unique drug classes dispensed*	10.0	6.2	9.8	7.8	0.273	0.039

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1k. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	318	100.0%	299	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	22.6	1.7	22.9	1.5	-0.298	-0.181
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	318	100.0%	299	100.0%	0.000	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	172	54.1%	168	56.2%	-2.099	-0.042
Male	146	45.9%	131	43.8%	2.099	0.042
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	*****	*****	0.549	0.044
Asian	*****	*****	*****	*****	-0.100	-0.008
Black or African American	74	23.3%	79	26.4%	-3.151	-0.073
Multi-racial	0	0.0%	*****	*****	NaN	NaN
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	-0.354	-0.051
Unknown	113	35.5%	81	27.1%	8.444	0.183
White	119	37.4%	126	42.1%	-4.719	-0.097
Hispanic origin						
Yes	28	8.8%	25	8.4%	0.444	0.016
No	203	63.8%	216	72.2%	-8.404	-0.181
Unknown	87	27.4%	58	19.4%	7.960	0.189

Table 1k. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	21	6.6%	20	6.7%	-0.085	-0.003
2014	19	6.0%	11	3.7%	2.296	0.107
2015	38	11.9%	11	3.7%	8.271	0.312
2016	38	11.9%	32	10.7%	1.247	0.039
2017	58	18.2%	60	20.1%	-1.828	-0.046
2018	44	13.8%	44	14.7%	-0.879	-0.025
2019	32	10.1%	25	8.4%	1.702	0.059
2020	29	9.1%	28	9.4%	-0.245	-0.008
2021	25	7.9%	38	12.7%	-4.847	-0.160
2022	*****	*****	*****	*****	-1.518	-0.082
2023	*****	*****	*****	*****	-3.779	-0.208
2024	0	0.0%	*****	*****	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.0	1.9	4.3	2.5	-0.321	-0.144
Combined comorbidity score ^{*,4}	5.0	2.4	5.3	2.9	-0.236	-0.087
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	153	48.1%	143	47.8%	0.287	0.006
Overweight/Obesity [*]	38	11.9%	41	13.7%	-1.763	-0.053
Hypertension [*]	192	60.4%	202	67.6%	-7.181	-0.150
Hyperlipidemia [*]	103	32.4%	88	29.4%	2.958	0.064
Tobacco Smoking [*]	88	27.7%	89	29.8%	-2.093	-0.046
Alcohol Use [*]	22	6.9%	19	6.4%	0.564	0.023

Table 1k. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	284	89.3%	263	88.0%	1.348	0.042
Long/Intermediate-Acting Insulin*	246	77.4%	252	84.3%	-6.922	-0.177
Combination Insulin*	15	4.7%	14	4.7%	0.035	0.002
Insulin Pump*	62	19.5%	57	19.1%	0.433	0.011
Metformin*	*****	*****	*****	*****	0.784	0.045
Continuous Glucose Monitoring*	55	17.3%	51	17.1%	0.239	0.006
Lipid Lowering Medications*	68	21.4%	73	24.4%	-3.031	-0.072
Alpha Blockers*	20	6.3%	23	7.7%	-1.403	-0.055
Angiotensin II Receptor Blockers (ARBs)*	39	12.3%	30	10.0%	2.231	0.071
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	133	41.8%	115	38.5%	3.362	0.069
Beta Blockers*	69	21.7%	71	23.7%	-2.048	-0.049
Calcium Channel Blockers*	59	18.6%	49	16.4%	2.165	0.057
Diuretics*	59	18.6%	53	17.7%	0.828	0.021
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	13	4.1%	17	5.7%	-1.598	-0.074
Combination Anti-Hypertensives*	*****	*****	*****	*****	1.492	0.105

Table 1k. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	21.8	16.3	23.4	18.5	-1.666	-0.096
Mean number of emergency room encounters*	3.7	6.2	3.4	5.6	0.361	0.061
Mean number of inpatient hospital encounters*	3.1	5.4	2.6	3.2	0.450	0.102
Mean number of non-acute institutional encounters*	0.1	0.4	0.1	0.6	0.005	0.009
Mean number of other ambulatory encounters*	28.0	45.5	28.4	38.4	-0.382	-0.009
Mean number of filled prescriptions*	41.3	36.8	40.8	35.0	0.431	0.012
Mean number of generics dispensed*	13.0	8.9	13.2	8.0	-0.213	-0.025
Mean number of unique drug classes dispensed*	10.6	7.3	11.0	6.8	-0.362	-0.052

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

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Table 11. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	144	45.3%	144	48.2%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	22.7	1.7	22.6	1.6	0.074	0.045
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	144	100.0%	144	100.0%	0.000	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	84	58.3%	81	56.3%	2.083	0.042
Male	60	41.7%	63	43.8%	-2.083	-0.042
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	*****	*****	0.000	0.000
Asian	*****	*****	*****	*****	0.694	0.053
Black or African American	*****	*****	*****	*****	-1.389	-0.032
Multi-racial	0	0.0%	0	0.0%	NaN	NaN
Native Hawaiian or Other Pacific Islander	*****	*****	0	0.0%	NaN	NaN
Unknown	38	26.4%	39	27.1%	-0.694	-0.016
White	62	43.1%	61	42.4%	0.694	0.014
Hispanic origin						
Yes	18	12.5%	19	13.2%	-0.694	-0.021
No	106	73.6%	105	72.9%	0.694	0.016
Unknown	20	13.9%	20	13.9%	0.000	0.000

Table 1I. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	*****	*****	*****	*****	0.694	0.045
2014	*****	*****	*****	*****	0.694	0.040
2015	*****	*****	*****	*****	0.000	0.000
2016	18	12.5%	14	9.7%	2.778	0.088
2017	34	23.6%	37	25.7%	-2.083	-0.048
2018	28	19.4%	25	17.4%	2.083	0.054
2019	13	9.0%	16	11.1%	-2.083	-0.069
2020	15	10.4%	16	11.1%	-0.694	-0.022
2021	15	10.4%	18	12.5%	-2.083	-0.065
2022	*****	*****	*****	*****	0.694	0.068
2023	*****	*****	*****	*****	0.000	0.000
2024	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.2	2.0	4.2	2.4	-0.014	-0.006
Combined comorbidity score ^{*,4}	5.1	2.3	5.2	2.9	-0.076	-0.029
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	67	46.5%	72	50.0%	-3.472	-0.070
Overweight/Obesity [*]	17	11.8%	18	12.5%	-0.694	-0.021
Hypertension [*]	89	61.8%	92	63.9%	-2.083	-0.043
Hyperlipidemia [*]	35	24.3%	39	27.1%	-2.778	-0.064
Tobacco Smoking [*]	44	30.6%	42	29.2%	1.389	0.030
Alcohol Use [*]	*****	*****	*****	*****	2.083	0.080

Table 11. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	127	88.2%	129	89.6%	-1.389	-0.044
Long/Intermediate-Acting Insulin*	116	80.6%	121	84.0%	-3.472	-0.091
Combination Insulin*	*****	*****	*****	*****	-0.694	-0.031
Insulin Pump*	25	17.4%	23	16.0%	1.389	0.037
Metformin*	*****	*****	*****	*****	-0.694	-0.040
Continuous Glucose Monitoring*	19	13.2%	21	14.6%	-1.389	-0.040
Lipid Lowering Medications*	35	24.3%	37	25.7%	-1.389	-0.032
Alpha Blockers*	*****	*****	*****	*****	-1.389	-0.052
Angiotensin II Receptor Blockers (ARBs)*	17	11.8%	15	10.4%	1.389	0.044
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	60	41.7%	62	43.1%	-1.389	-0.028
Beta Blockers*	32	22.2%	31	21.5%	0.694	0.017
Calcium Channel Blockers*	22	15.3%	21	14.6%	0.694	0.019
Diuretics*	25	17.4%	21	14.6%	2.778	0.076
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	*****	*****	*****	*****	1.389	0.057
Combination Anti-Hypertensives*	*****	*****	*****	*****	-0.694	-0.053

Table 1I. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	22.9	16.7	23.3	16.9	-0.347	-0.021
Mean number of emergency room encounters*	3.7	5.9	3.6	5.2	0.063	0.011
Mean number of inpatient hospital encounters*	2.8	3.8	2.9	3.1	-0.111	-0.032
Mean number of non-acute institutional encounters*	0.1	0.4	0.1	0.3	0.014	0.037
Mean number of other ambulatory encounters*	31.8	48.8	33.2	40.3	-1.382	-0.031
Mean number of filled prescriptions*	44.2	39.7	43.0	36.2	1.167	0.031
Mean number of generics dispensed*	13.8	9.2	13.9	8.4	-0.056	-0.006
Mean number of unique drug classes dispensed*	11.5	7.8	11.5	6.8	0.007	0.001

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Table 1m. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	5,591	100.0%	4,568	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	36.7	5.3	36.9	5.4	-0.231	-0.043
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	5,591	100.0%	4,568	100.0%	0.000	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	2,747	49.1%	2,190	47.9%	1.190	0.024
Male	2,844	50.9%	2,378	52.1%	-1.190	-0.024
Race ^{*,2}						
American Indian or Alaska Native	74	1.3%	55	1.2%	0.120	0.011
Asian	54	1.0%	48	1.1%	-0.085	-0.009
Black or African American	1,056	18.9%	833	18.2%	0.652	0.017
Multi-racial	20	0.4%	16	0.4%	0.007	0.001
Native Hawaiian or Other Pacific Islander	12	0.2%	16	0.4%	-0.136	-0.026
Unknown	1,518	27.2%	1,202	26.3%	0.837	0.019
White	2,857	51.1%	2,398	52.5%	-1.396	-0.028
Hispanic origin						
Yes	459	8.2%	350	7.7%	0.548	0.020
No	3,918	70.1%	3,270	71.6%	-1.508	-0.033
Unknown	1,214	21.7%	948	20.8%	0.960	0.023

Table 1m. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	864	15.5%	643	14.1%	1.377	0.039
2014	398	7.1%	295	6.5%	0.661	0.026
2015	486	8.7%	348	7.6%	1.074	0.039
2016	543	9.7%	474	10.4%	-0.664	-0.022
2017	809	14.5%	662	14.5%	-0.022	-0.001
2018	604	10.8%	504	11.0%	-0.230	-0.007
2019	502	9.0%	441	9.7%	-0.675	-0.023
2020	471	8.4%	437	9.6%	-1.142	-0.040
2021	550	9.8%	422	9.2%	0.599	0.020
2022	169	3.0%	161	3.5%	-0.502	-0.028
2023	184	3.3%	168	3.7%	-0.387	-0.021
2024	11	0.2%	13	0.3%	-0.088	-0.018
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.8	2.1	4.9	2.5	-0.099	-0.042
Combined comorbidity score ^{*,4}	4.7	2.4	4.6	3.0	0.129	0.048
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,574	28.2%	1,399	30.6%	-2.474	-0.054
Overweight/Obesity [*]	1,121	20.1%	1,035	22.7%	-2.608	-0.064
Hypertension [*]	4,601	82.3%	3,876	84.9%	-2.558	-0.069
Hyperlipidemia [*]	3,161	56.5%	2,547	55.8%	0.780	0.016
Tobacco Smoking [*]	2,196	39.3%	1,909	41.8%	-2.513	-0.051
Alcohol Use [*]	458	8.2%	427	9.3%	-1.156	-0.041

Table 1m. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	4,863	87.0%	3,969	86.9%	0.092	0.003
Long/Intermediate-Acting Insulin*	4,092	73.2%	3,427	75.0%	-1.833	-0.042
Combination Insulin*	242	4.3%	215	4.7%	-0.378	-0.018
Insulin Pump*	1,016	18.2%	740	16.2%	1.972	0.052
Metformin*	252	4.5%	225	4.9%	-0.418	-0.020
Continuous Glucose Monitoring*	1,173	21.0%	852	18.7%	2.329	0.058
Lipid Lowering Medications*	2,923	52.3%	2,466	54.0%	-1.704	-0.034
Alpha Blockers*	551	9.9%	371	8.1%	1.733	0.061
Angiotensin II Receptor Blockers (ARBs)*	1,095	19.6%	770	16.9%	2.729	0.071
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	2,743	49.1%	2,304	50.4%	-1.377	-0.028
Beta Blockers*	2,148	38.4%	1,574	34.5%	3.962	0.082
Calcium Channel Blockers*	1,848	33.1%	1,237	27.1%	5.973	0.131
Diuretics*	1,923	34.4%	1,414	31.0%	3.440	0.073
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	-0.048	-0.023
Other Anti-Hypertensives*	536	9.6%	287	6.3%	3.304	0.122
Combination Anti-Hypertensives*	392	7.0%	316	6.9%	0.094	0.004

Table 1m. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	28.0	23.1	27.4	24.8	0.536	0.022
Mean number of emergency room encounters*	2.8	5.0	2.8	4.4	-0.041	-0.009
Mean number of inpatient hospital encounters*	1.8	3.2	1.8	2.5	0.001	0.000
Mean number of non-acute institutional encounters*	0.1	0.6	0.1	0.5	-0.002	-0.003
Mean number of other ambulatory encounters*	22.2	37.3	22.6	35.1	-0.362	-0.010
Mean number of filled prescriptions*	57.2	41.8	56.7	43.6	0.487	0.011
Mean number of generics dispensed*	15.3	8.1	15.3	8.2	0.071	0.009
Mean number of unique drug classes dispensed*	13.0	6.8	12.8	6.9	0.159	0.023

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

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Table 1n. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number	Percent	Number	Percent		
Unique patients	4,047	72.4%	4,047	88.6%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	36.9	5.3	36.9	5.4	0.020	0.004
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	4,047	100.0%	4,047	100.0%	0.000	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	1,968	48.6%	1,954	48.3%	0.346	0.007
Male	2,079	51.4%	2,093	51.7%	-0.346	-0.007
Race ^{*,2}						
American Indian or Alaska Native	53	1.3%	47	1.2%	0.148	0.013
Asian	38	0.9%	43	1.1%	-0.124	-0.012
Black or African American	800	19.8%	757	18.7%	1.063	0.027
Multi-racial	*****	*****	*****	*****	-0.025	-0.004
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.000	0.000
Unknown	1,037	25.6%	1,039	25.7%	-0.049	-0.001
White	2,096	51.8%	2,137	52.8%	-1.013	-0.020
Hispanic origin						
Yes	320	7.9%	327	8.1%	-0.173	-0.006
No	2,923	72.2%	2,922	72.2%	0.025	0.001
Unknown	804	19.9%	798	19.7%	0.148	0.004

Table 1n. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	589	14.6%	589	14.6%	0.000	0.000
2014	271	6.7%	272	6.7%	-0.025	-0.001
2015	317	7.8%	324	8.0%	-0.173	-0.006
2016	408	10.1%	416	10.3%	-0.198	-0.007
2017	614	15.2%	609	15.0%	0.124	0.003
2018	457	11.3%	457	11.3%	0.000	0.000
2019	382	9.4%	376	9.3%	0.148	0.005
2020	364	9.0%	371	9.2%	-0.173	-0.006
2021	387	9.6%	386	9.5%	0.025	0.001
2022	117	2.9%	110	2.7%	0.173	0.010
2023	*****	*****	*****	*****	0.099	0.006
2024	*****	*****	*****	*****	0.000	0.000
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.9	2.1	4.9	2.5	-0.003	-0.001
Combined comorbidity score ^{*,4}	4.7	2.4	4.7	3.0	0.064	0.024
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,201	29.7%	1,207	29.8%	-0.148	-0.003
Overweight/Obesity [*]	875	21.6%	859	21.2%	0.395	0.010
Hypertension [*]	3,412	84.3%	3,399	84.0%	0.321	0.009
Hyperlipidemia [*]	2,229	55.1%	2,258	55.8%	-0.717	-0.014
Tobacco Smoking [*]	1,686	41.7%	1,663	41.1%	0.568	0.012
Alcohol Use [*]	353	8.7%	360	8.9%	-0.173	-0.006

Table 1n. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	3,505	86.6%	3,519	87.0%	-0.346	-0.010
Long/Intermediate-Acting Insulin*	3,041	75.1%	3,034	75.0%	0.173	0.004
Combination Insulin*	188	4.6%	184	4.5%	0.099	0.005
Insulin Pump*	665	16.4%	656	16.2%	0.222	0.006
Metformin*	178	4.4%	188	4.6%	-0.247	-0.012
Continuous Glucose Monitoring*	757	18.7%	762	18.8%	-0.124	-0.003
Lipid Lowering Medications*	2,138	52.8%	2,173	53.7%	-0.865	-0.017
Alpha Blockers*	333	8.2%	344	8.5%	-0.272	-0.010
Angiotensin II Receptor Blockers (ARBs)*	690	17.0%	720	17.8%	-0.741	-0.020
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	2,041	50.4%	2,056	50.8%	-0.371	-0.007
Beta Blockers*	1,440	35.6%	1,464	36.2%	-0.593	-0.012
Calcium Channel Blockers*	1,166	28.8%	1,151	28.4%	0.371	0.008
Diuretics*	1,286	31.8%	1,296	32.0%	-0.247	-0.005
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	0.000	0.000
Other Anti-Hypertensives*	301	7.4%	278	6.9%	0.568	0.022
Combination Anti-Hypertensives*	269	6.6%	272	6.7%	-0.074	-0.003

Table 1n. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	27.5	22.8	27.3	23.4	0.217	0.009
Mean number of emergency room encounters*	2.8	4.5	2.7	3.9	0.067	0.016
Mean number of inpatient hospital encounters*	1.8	3.1	1.8	2.5	0.013	0.005
Mean number of non-acute institutional encounters*	0.1	0.6	0.1	0.5	0.009	0.016
Mean number of other ambulatory encounters*	23.1	37.6	22.7	35.5	0.435	0.012
Mean number of filled prescriptions*	57.1	41.8	57.3	43.8	-0.268	-0.006
Mean number of generics dispensed*	15.3	8.1	15.4	8.2	-0.067	-0.008
Mean number of unique drug classes dispensed*	12.9	6.8	12.9	6.9	-0.048	-0.007

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

*****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.

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Table 1o. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	10,864	100.0%	11,489	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	55.7	5.6	56.1	5.5	-0.394	-0.071
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	10,864	100.0%	11,489	100.0%	0.000	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	5,205	47.9%	5,644	49.1%	-1.215	-0.024
Male	5,659	52.1%	5,845	50.9%	1.215	0.024
Race ^{*,2}						
American Indian or Alaska Native	67	0.6%	76	0.7%	-0.045	-0.006
Asian	83	0.8%	81	0.7%	0.059	0.007
Black or African American	1,264	11.6%	1,445	12.6%	-0.942	-0.029
Multi-racial	39	0.4%	48	0.4%	-0.059	-0.009
Native Hawaiian or Other Pacific Islander	19	0.2%	25	0.2%	-0.043	-0.010
Unknown	2,481	22.8%	2,566	22.3%	0.502	0.012
White	6,911	63.6%	7,248	63.1%	0.527	0.011
Hispanic origin						
Yes	355	3.3%	368	3.2%	0.065	0.004
No	7,878	72.5%	8,351	72.7%	-0.172	-0.004
Unknown	2,631	24.2%	2,770	24.1%	0.108	0.003

Table 1o. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	2,044	18.8%	1,891	16.5%	2.355	0.062
2014	1,167	10.7%	1,126	9.8%	0.941	0.031
2015	966	8.9%	1,040	9.1%	-0.160	-0.006
2016	1,032	9.5%	1,140	9.9%	-0.423	-0.014
2017	1,237	11.4%	1,299	11.3%	0.080	0.003
2018	995	9.2%	1,100	9.6%	-0.416	-0.014
2019	834	7.7%	949	8.3%	-0.583	-0.022
2020	824	7.6%	921	8.0%	-0.432	-0.016
2021	855	7.9%	971	8.5%	-0.582	-0.021
2022	484	4.5%	547	4.8%	-0.306	-0.015
2023	394	3.6%	477	4.2%	-0.525	-0.027
2024	32	0.3%	28	0.2%	0.051	0.010
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	5.0	2.1	4.9	2.4	0.069	0.031
Combined comorbidity score ^{*,4}	4.8	2.5	4.7	3.1	0.117	0.041
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,552	14.3%	1,752	15.2%	-0.964	-0.027
Overweight/Obesity [*]	2,683	24.7%	2,931	25.5%	-0.815	-0.019
Hypertension [*]	9,854	90.7%	10,743	93.5%	-2.804	-0.104
Hyperlipidemia [*]	8,492	78.2%	9,173	79.8%	-1.675	-0.041
Tobacco Smoking [*]	3,730	34.3%	4,178	36.4%	-2.032	-0.043
Alcohol Use [*]	774	7.1%	912	7.9%	-0.814	-0.031

Table 1o. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	9,317	85.8%	9,834	85.6%	0.165	0.005
Long/Intermediate-Acting Insulin*	7,376	67.9%	7,861	68.4%	-0.528	-0.011
Combination Insulin*	463	4.3%	490	4.3%	-0.003	-0.000
Insulin Pump*	1,878	17.3%	2,097	18.3%	-0.966	-0.025
Metformin*	828	7.6%	1,058	9.2%	-1.587	-0.057
Continuous Glucose Monitoring*	2,308	21.2%	2,470	21.5%	-0.254	-0.006
Lipid Lowering Medications*	8,424	77.5%	8,990	78.2%	-0.708	-0.017
Alpha Blockers*	1,006	9.3%	975	8.5%	0.774	0.027
Angiotensin II Receptor Blockers (ARBs)*	2,608	24.0%	2,796	24.3%	-0.330	-0.008
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	5,125	47.2%	5,749	50.0%	-2.865	-0.057
Beta Blockers*	5,360	49.3%	5,735	49.9%	-0.580	-0.012
Calcium Channel Blockers*	3,694	34.0%	3,706	32.3%	1.745	0.037
Diuretics*	4,823	44.4%	5,018	43.7%	0.718	0.014
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	12	0.1%	11	0.1%	0.015	0.005
Other Anti-Hypertensives*	793	7.3%	764	6.6%	0.649	0.026
Combination Anti-Hypertensives*	980	9.0%	1,113	9.7%	-0.667	-0.023

Table 1o. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	28.0	22.9	27.3	20.7	0.684	0.031
Mean number of emergency room encounters*	1.4	3.0	1.5	2.7	-0.094	-0.033
Mean number of inpatient hospital encounters*	0.9	1.8	0.9	1.5	-0.036	-0.022
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.6	0.017	0.025
Mean number of other ambulatory encounters*	19.6	37.6	19.8	34.6	-0.235	-0.007
Mean number of filled prescriptions*	70.7	49.7	69.8	49.4	0.850	0.017
Mean number of generics dispensed*	15.6	7.6	15.7	7.3	-0.088	-0.012
Mean number of unique drug classes dispensed*	13.5	6.5	13.6	6.3	-0.073	-0.011

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1p. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number	Percent	Number	Percent		
Unique patients	9,802	90.2%	9,802	85.3%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	55.9	5.6	55.8	5.5	0.036	0.007
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	9,802	100.0%	9,802	100.0%	0.000	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	4,770	48.7%	4,726	48.2%	0.449	0.009
Male	5,032	51.3%	5,076	51.8%	-0.449	-0.009
Race ^{*,2}						
American Indian or Alaska Native	58	0.6%	60	0.6%	-0.020	-0.003
Asian	73	0.7%	68	0.7%	0.051	0.006
Black or African American	1,192	12.2%	1,189	12.1%	0.031	0.001
Multi-racial	34	0.3%	35	0.4%	-0.010	-0.002
Native Hawaiian or Other Pacific Islander	15	0.2%	12	0.1%	0.031	0.008
Unknown	2,145	21.9%	2,167	22.1%	-0.224	-0.005
White	6,285	64.1%	6,271	64.0%	0.143	0.003
Hispanic origin						
Yes	311	3.2%	321	3.3%	-0.102	-0.006
No	7,211	73.6%	7,197	73.4%	0.143	0.003
Unknown	2,280	23.3%	2,284	23.3%	-0.041	-0.001

Table 1p. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	1,741	17.8%	1,723	17.6%	0.184	0.005
2014	1,021	10.4%	1,027	10.5%	-0.061	-0.002
2015	872	8.9%	878	9.0%	-0.061	-0.002
2016	948	9.7%	975	9.9%	-0.275	-0.009
2017	1,113	11.4%	1,117	11.4%	-0.041	-0.001
2018	915	9.3%	911	9.3%	0.041	0.001
2019	774	7.9%	805	8.2%	-0.316	-0.012
2020	767	7.8%	746	7.6%	0.214	0.008
2021	794	8.1%	771	7.9%	0.235	0.009
2022	461	4.7%	456	4.7%	0.051	0.002
2023	371	3.8%	368	3.8%	0.031	0.002
2024	25	0.3%	25	0.3%	0.000	0.000
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.9	2.1	5.0	2.3	-0.018	-0.008
Combined comorbidity score ^{*,4}	4.8	2.5	4.8	3.1	-0.005	-0.002
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,426	14.5%	1,445	14.7%	-0.194	-0.005
Overweight/Obesity [*]	2,490	25.4%	2,443	24.9%	0.479	0.011
Hypertension [*]	9,073	92.6%	9,084	92.7%	-0.112	-0.004
Hyperlipidemia [*]	7,764	79.2%	7,781	79.4%	-0.173	-0.004
Tobacco Smoking [*]	3,449	35.2%	3,483	35.5%	-0.347	-0.007
Alcohol Use [*]	723	7.4%	747	7.6%	-0.245	-0.009

Table 1p. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	8,387	85.6%	8,387	85.6%	0.000	0.000
Long/Intermediate-Acting Insulin*	6,725	68.6%	6,669	68.0%	0.571	0.012
Combination Insulin*	418	4.3%	424	4.3%	-0.061	-0.003
Insulin Pump*	1,691	17.3%	1,698	17.3%	-0.071	-0.002
Metformin*	800	8.2%	808	8.2%	-0.082	-0.003
Continuous Glucose Monitoring*	2,070	21.1%	2,056	21.0%	0.143	0.004
Lipid Lowering Medications*	7,648	78.0%	7,669	78.2%	-0.214	-0.005
Alpha Blockers*	855	8.7%	871	8.9%	-0.163	-0.006
Angiotensin II Receptor Blockers (ARBs)*	2,349	24.0%	2,353	24.0%	-0.041	-0.001
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	4,741	48.4%	4,727	48.2%	0.143	0.003
Beta Blockers*	4,876	49.7%	4,903	50.0%	-0.275	-0.006
Calcium Channel Blockers*	3,240	33.1%	3,225	32.9%	0.153	0.003
Diuretics*	4,344	44.3%	4,349	44.4%	-0.051	-0.001
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	0.000	0.000
Other Anti-Hypertensives*	666	6.8%	687	7.0%	-0.214	-0.008
Combination Anti-Hypertensives*	911	9.3%	907	9.3%	0.041	0.001

Table 1p. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	27.6	22.0	27.6	21.1	-0.002	-0.000
Mean number of emergency room encounters*	1.4	3.1	1.4	2.5	-0.018	-0.007
Mean number of inpatient hospital encounters*	0.9	1.7	0.9	1.5	-0.023	-0.014
Mean number of non-acute institutional encounters*	0.2	0.7	0.2	0.6	-0.000	-0.000
Mean number of other ambulatory encounters*	19.5	37.2	19.5	33.9	-0.065	-0.002
Mean number of filled prescriptions*	70.3	49.2	70.6	50.4	-0.297	-0.006
Mean number of generics dispensed*	15.6	7.6	15.7	7.3	-0.072	-0.010
Mean number of unique drug classes dispensed*	13.5	6.5	13.6	6.3	-0.066	-0.010

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1q. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	17,089	100.0%	17,493	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	74.6	7.3	74.5	7.2	0.129	0.018
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	17,089	100.0%	17,493	100.0%	0.000	NaN
Sex [*]						
Female	9,359	54.8%	9,560	54.7%	0.116	0.002
Male	7,730	45.2%	7,933	45.3%	-0.116	-0.002
Race ^{*,2}						
American Indian or Alaska Native	55	0.3%	43	0.2%	0.076	0.014
Asian	183	1.1%	181	1.0%	0.036	0.004
Black or African American	1,494	8.7%	1,582	9.0%	-0.301	-0.011
Multi-racial	13	0.1%	13	0.1%	0.002	0.001
Native Hawaiian or Other Pacific Islander	23	0.1%	20	0.1%	0.020	0.006
Unknown	1,215	7.1%	1,378	7.9%	-0.768	-0.029
White	14,106	82.5%	14,276	81.6%	0.935	0.024
Hispanic origin						
Yes	185	1.1%	251	1.4%	-0.352	-0.032
No	15,205	89.0%	15,427	88.2%	0.786	0.025
Unknown	1,699	9.9%	1,815	10.4%	-0.434	-0.014

Table 1q. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	2,878	16.8%	3,396	19.4%	-2.572	-0.067
2014	2,085	12.2%	2,282	13.0%	-0.844	-0.025
2015	1,659	9.7%	1,733	9.9%	-0.199	-0.007
2016	1,539	9.0%	1,484	8.5%	0.522	0.018
2017	1,418	8.3%	1,400	8.0%	0.295	0.011
2018	1,289	7.5%	1,243	7.1%	0.437	0.017
2019	1,184	6.9%	1,133	6.5%	0.452	0.018
2020	1,283	7.5%	1,132	6.5%	1.037	0.041
2021	1,358	7.9%	1,375	7.9%	0.086	0.003
2022	1,273	7.4%	1,245	7.1%	0.332	0.013
2023	1,084	6.3%	1,039	5.9%	0.404	0.017
2024	39	0.2%	31	0.2%	0.051	0.011
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.8	2.1	4.9	2.1	-0.066	-0.031
Combined comorbidity score ^{*,4}	5.2	2.8	5.3	3.3	-0.031	-0.010
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,047	6.1%	1,177	6.7%	-0.602	-0.025
Overweight/Obesity [*]	4,081	23.9%	3,933	22.5%	1.398	0.033
Hypertension [*]	16,177	94.7%	16,857	96.4%	-1.701	-0.082
Hyperlipidemia [*]	15,010	87.8%	15,399	88.0%	-0.195	-0.006
Tobacco Smoking [*]	4,410	25.8%	4,512	25.8%	0.013	0.000
Alcohol Use [*]	534	3.1%	601	3.4%	-0.311	-0.017

Table 1q. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	13,723	80.3%	14,150	80.9%	-0.586	-0.015
Long/Intermediate-Acting Insulin*	11,941	69.9%	12,121	69.3%	0.585	0.013
Combination Insulin*	835	4.9%	836	4.8%	0.107	0.005
Insulin Pump*	820	4.8%	845	4.8%	-0.032	-0.001
Metformin*	1,749	10.2%	1,747	10.0%	0.248	0.008
Continuous Glucose Monitoring*	3,342	19.6%	3,413	19.5%	0.046	0.001
Lipid Lowering Medications*	13,892	81.3%	14,230	81.3%	-0.055	-0.001
Alpha Blockers*	1,512	8.8%	1,613	9.2%	-0.373	-0.013
Angiotensin II Receptor Blockers (ARBs)*	4,792	28.0%	5,070	29.0%	-0.942	-0.021
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	6,918	40.5%	7,263	41.5%	-1.037	-0.021
Beta Blockers*	9,416	55.1%	9,898	56.6%	-1.483	-0.030
Calcium Channel Blockers*	6,524	38.2%	7,049	40.3%	-2.120	-0.043
Diuretics*	8,664	50.7%	8,992	51.4%	-0.704	-0.014
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	34	0.2%	34	0.2%	0.005	0.001
Other Anti-Hypertensives*	1,237	7.2%	1,194	6.8%	0.413	0.016
Combination Anti-Hypertensives*	1,814	10.6%	1,869	10.7%	-0.069	-0.002

Table 1q. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	27.0	20.2	27.8	20.3	-0.880	-0.043
Mean number of emergency room encounters*	0.7	1.5	0.8	1.5	-0.091	-0.060
Mean number of inpatient hospital encounters*	0.5	1.2	0.6	1.1	-0.080	-0.071
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.7	-0.002	-0.002
Mean number of other ambulatory encounters*	18.1	32.6	18.8	29.4	-0.707	-0.023
Mean number of filled prescriptions*	61.5	48.8	63.6	49.4	-2.100	-0.043
Mean number of generics dispensed*	13.9	6.4	14.2	6.2	-0.330	-0.053
Mean number of unique drug classes dispensed*	12.2	5.5	12.5	5.3	-0.299	-0.055

*Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1r. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	15,806	92.5%	15,806	90.4%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	74.6	7.2	74.6	7.3	0.004	0.001
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	15,806	100.0%	15,806	100.0%	0.000	NaN
Sex [*]						
Female	8,632	54.6%	8,604	54.4%	0.177	0.004
Male	7,174	45.4%	7,202	45.6%	-0.177	-0.004
Race ^{*,2}						
American Indian or Alaska Native	38	0.2%	42	0.3%	-0.025	-0.005
Asian	164	1.0%	162	1.0%	0.013	0.001
Black or African American	1,411	8.9%	1,408	8.9%	0.019	0.001
Multi-racial	11	0.1%	11	0.1%	0.000	0.000
Native Hawaiian or Other Pacific Islander	15	0.1%	19	0.1%	-0.025	-0.008
Unknown	1,099	7.0%	1,103	7.0%	-0.025	-0.001
White	13,068	82.7%	13,061	82.6%	0.044	0.001
Hispanic origin						
Yes	176	1.1%	179	1.1%	-0.019	-0.002
No	14,119	89.3%	14,114	89.3%	0.032	0.001
Unknown	1,511	9.6%	1,513	9.6%	-0.013	-0.000

Table 1r. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	2,831	17.9%	2,772	17.5%	0.373	0.010
2014	2,026	12.8%	2,020	12.8%	0.038	0.001
2015	1,572	9.9%	1,584	10.0%	-0.076	-0.003
2016	1,380	8.7%	1,377	8.7%	0.019	0.001
2017	1,283	8.1%	1,299	8.2%	-0.101	-0.004
2018	1,162	7.4%	1,169	7.4%	-0.044	-0.002
2019	1,045	6.6%	1,062	6.7%	-0.108	-0.004
2020	1,085	6.9%	1,090	6.9%	-0.032	-0.001
2021	1,249	7.9%	1,264	8.0%	-0.095	-0.004
2022	1,189	7.5%	1,173	7.4%	0.101	0.004
2023	956	6.0%	967	6.1%	-0.070	-0.003
2024	28	0.2%	29	0.2%	-0.006	-0.001
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.8	2.1	4.8	2.1	-0.009	-0.004
Combined comorbidity score ^{*,4}	5.2	2.8	5.3	3.3	-0.019	-0.006
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	997	6.3%	1,025	6.5%	-0.177	-0.007
Overweight/Obesity [*]	3,645	23.1%	3,664	23.2%	-0.120	-0.003
Hypertension [*]	15,200	96.2%	15,175	96.0%	0.158	0.008
Hyperlipidemia [*]	13,914	88.0%	13,939	88.2%	-0.158	-0.005
Tobacco Smoking [*]	4,065	25.7%	4,078	25.8%	-0.082	-0.002
Alcohol Use [*]	514	3.3%	510	3.2%	0.025	0.001

Table 1r. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	12,728	80.5%	12,721	80.5%	0.044	0.001
Long/Intermediate-Acting Insulin*	10,967	69.4%	11,025	69.8%	-0.367	-0.008
Combination Insulin*	770	4.9%	749	4.7%	0.133	0.006
Insulin Pump*	736	4.7%	733	4.6%	0.019	0.001
Metformin*	1,586	10.0%	1,568	9.9%	0.114	0.004
Continuous Glucose Monitoring*	3,105	19.6%	3,103	19.6%	0.013	0.000
Lipid Lowering Medications*	12,848	81.3%	12,897	81.6%	-0.310	-0.008
Alpha Blockers*	1,424	9.0%	1,407	8.9%	0.108	0.004
Angiotensin II Receptor Blockers (ARBs)*	4,521	28.6%	4,511	28.5%	0.063	0.001
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	6,471	40.9%	6,475	41.0%	-0.025	-0.001
Beta Blockers*	8,885	56.2%	8,871	56.1%	0.089	0.002
Calcium Channel Blockers*	6,176	39.1%	6,182	39.1%	-0.038	-0.001
Diuretics*	8,106	51.3%	8,107	51.3%	-0.006	-0.000
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	24	0.2%	30	0.2%	-0.038	-0.009
Other Anti-Hypertensives*	1,107	7.0%	1,097	6.9%	0.063	0.002
Combination Anti-Hypertensives*	1,702	10.8%	1,672	10.6%	0.190	0.006

Table 1r. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	27.3	20.5	27.4	19.9	-0.121	-0.006
Mean number of emergency room encounters*	0.7	1.5	0.7	1.4	-0.031	-0.022
Mean number of inpatient hospital encounters*	0.6	1.2	0.6	1.0	-0.028	-0.025
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.7	-0.005	-0.007
Mean number of other ambulatory encounters*	18.2	32.6	18.4	28.9	-0.148	-0.005
Mean number of filled prescriptions*	62.3	49.2	62.4	48.3	-0.066	-0.001
Mean number of generics dispensed*	14.0	6.3	14.1	6.1	-0.039	-0.006
Mean number of unique drug classes dispensed*	12.3	5.5	12.3	5.3	-0.030	-0.005

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Table 1s. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	36,391	100.0%	608,462	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	53.8	15.2	39.1	16.1	14.703	0.939
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	55	0.2%	51,822	8.5%	-8.366	-0.420
12-18 years	166	0.5%	80,831	13.3%	-12.828	-0.524
19-24 years	334	0.9%	60,701	10.0%	-9.058	-0.407
25-44 years	11,465	31.5%	181,430	29.8%	1.687	0.037
45-64 years	14,116	38.8%	132,847	21.8%	16.957	0.375
≥ 65 years	10,255	28.2%	100,831	16.6%	11.609	0.281
Sex [*]						
Female	17,595	48.3%	303,219	49.8%	-1.484	-0.030
Male	18,796	51.7%	305,243	50.2%	1.484	0.030
Race ^{*,2}						
American Indian or Alaska Native	351	1.0%	3,494	0.6%	0.390	0.045
Asian	568	1.6%	6,099	1.0%	0.558	0.050
Black or African American	7,759	21.3%	54,528	9.0%	12.360	0.350
Multi-racial	68	0.2%	4,610	0.8%	-0.571	-0.083
Native Hawaiian or Other Pacific Islander	64	0.2%	922	0.2%	0.024	0.006
Unknown	5,971	16.4%	226,455	37.2%	-20.810	-0.483
White	21,610	59.4%	312,354	51.3%	8.048	0.162
Hispanic origin						
Yes	2,340	6.4%	41,638	6.8%	-0.413	-0.017
No	29,574	81.3%	356,046	58.5%	22.752	0.512
Unknown	4,477	12.3%	210,778	34.6%	-22.339	-0.546

Table 1s. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	5,830	16.0%	82,259	13.5%	2.501	0.071
2014	3,532	9.7%	48,419	8.0%	1.748	0.062
2015	3,533	9.7%	55,163	9.1%	0.642	0.022
2016	3,872	10.6%	62,460	10.3%	0.375	0.012
2017	4,000	11.0%	85,369	14.0%	-3.039	-0.092
2018	3,458	9.5%	63,186	10.4%	-0.882	-0.029
2019	2,979	8.2%	52,321	8.6%	-0.413	-0.015
2020	2,943	8.1%	52,868	8.7%	-0.602	-0.022
2021	2,807	7.7%	61,189	10.1%	-2.343	-0.082
2022	1,902	5.2%	22,513	3.7%	1.527	0.074
2023	1,473	4.0%	20,859	3.4%	0.620	0.033
2024	62	0.2%	1,856	0.3%	-0.135	-0.028
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	6.0	2.4	1.4	1.7	4.681	2.234
Combined comorbidity score ^{*,4}	6.9	3.1	1.5	1.8	5.311	2.080
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	6,937	19.1%	82,270	13.5%	5.541	0.150
Overweight/Obesity [*]	9,341	25.7%	65,690	10.8%	14.872	0.393
Hypertension [*]	34,911	95.9%	216,475	35.6%	60.356	1.648
Hyperlipidemia [*]	28,017	77.0%	237,749	39.1%	37.915	0.832
Tobacco Smoking [*]	13,394	36.8%	102,108	16.8%	20.024	0.464
Alcohol Use [*]	1,871	5.1%	21,981	3.6%	1.529	0.075

Table 1s. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	29,080	79.9%	532,275	87.5%	-7.569	-0.206
Long/Intermediate-Acting Insulin*	26,763	73.5%	424,741	69.8%	3.737	0.083
Combination Insulin*	1,653	4.5%	16,960	2.8%	1.755	0.094
Insulin Pump*	2,452	6.7%	133,583	22.0%	-15.216	-0.445
Metformin*	704	1.9%	52,286	8.6%	-6.659	-0.302
Continuous Glucose Monitoring*	5,215	14.3%	143,036	23.5%	-9.177	-0.236
Lipid Lowering Medications*	25,012	68.7%	209,669	34.5%	34.272	0.730
Alpha Blockers*	8,793	24.2%	18,049	3.0%	21.196	0.651
Angiotensin II Receptor Blockers (ARBs)*	8,876	24.4%	49,792	8.2%	16.207	0.450
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	11,908	32.7%	142,350	23.4%	9.327	0.209
Beta Blockers*	26,159	71.9%	81,134	13.3%	58.549	1.469
Calcium Channel Blockers*	21,514	59.1%	52,043	8.6%	50.566	1.264
Diuretics*	18,397	50.6%	67,027	11.0%	39.538	0.948
Peripheral Vasodilators*	0	0.0%	*****	*****	NaN	NaN
Renin Inhibitors*	63	0.2%	238	0.0%	0.134	0.041
Other Anti-Hypertensives*	10,205	28.0%	5,383	0.9%	27.158	0.837
Combination Anti-Hypertensives*	1,423	3.9%	24,137	4.0%	-0.057	-0.003

Table 1s. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	101.5	86.8	15.4	17.3	86.129	1.377
Mean number of emergency room encounters*	2.1	4.2	0.8	2.0	1.313	0.397
Mean number of inpatient hospital encounters*	1.9	2.9	0.4	1.1	1.519	0.690
Mean number of non-acute institutional encounters*	0.3	1.0	0.0	0.3	0.303	0.406
Mean number of other ambulatory encounters*	38.6	48.9	9.8	25.2	28.756	0.739
Mean number of filled prescriptions*	70.1	47.3	33.7	32.6	36.368	0.895
Mean number of generics dispensed*	17.2	7.5	8.8	5.8	8.404	1.246
Mean number of unique drug classes dispensed*	14.8	6.3	7.4	5.1	7.448	1.293

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1t. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	16,033	44.1%	16,033	2.6%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	56.9	14.7	57.9	15.3	-0.910	-0.061
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	39	0.2%	80	0.5%	-0.256	-0.042
12-18 years	141	0.9%	184	1.1%	-0.268	-0.027
19-24 years	214	1.3%	307	1.9%	-0.580	-0.046
25-44 years	3,781	23.6%	3,214	20.0%	3.536	0.086
45-64 years	5,996	37.4%	5,671	35.4%	2.027	0.042
≥ 65 years	5,862	36.6%	6,577	41.0%	-4.460	-0.092
Sex [*]						
Female	8,027	50.1%	8,078	50.4%	-0.318	-0.006
Male	8,006	49.9%	7,955	49.6%	0.318	0.006
Race ^{*,2}						
American Indian or Alaska Native	115	0.7%	119	0.7%	-0.025	-0.003
Asian	190	1.2%	197	1.2%	-0.044	-0.004
Black or African American	2,389	14.9%	2,353	14.7%	0.225	0.006
Multi-racial	50	0.3%	57	0.4%	-0.044	-0.008
Native Hawaiian or Other Pacific Islander	39	0.2%	38	0.2%	0.006	0.001
Unknown	2,852	17.8%	2,795	17.4%	0.356	0.009
White	10,398	64.9%	10,474	65.3%	-0.474	-0.010
Hispanic origin						
Yes	800	5.0%	787	4.9%	0.081	0.004
No	12,650	78.9%	12,684	79.1%	-0.212	-0.005
Unknown	2,583	16.1%	2,562	16.0%	0.131	0.004

Table 1t. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	2,412	15.0%	2,419	15.1%	-0.044	-0.001
2014	1,517	9.5%	1,453	9.1%	0.399	0.014
2015	1,410	8.8%	1,415	8.8%	-0.031	-0.001
2016	1,756	11.0%	1,810	11.3%	-0.337	-0.011
2017	1,889	11.8%	1,850	11.5%	0.243	0.008
2018	1,569	9.8%	1,597	10.0%	-0.175	-0.006
2019	1,333	8.3%	1,327	8.3%	0.037	0.001
2020	1,301	8.1%	1,324	8.3%	-0.143	-0.005
2021	1,362	8.5%	1,351	8.4%	0.069	0.002
2022	805	5.0%	804	5.0%	0.006	0.000
2023	646	4.0%	649	4.0%	-0.019	-0.001
2024	33	0.2%	34	0.2%	-0.006	-0.001
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	5.0	2.2	5.1	2.5	-0.084	-0.035
Combined comorbidity score ^{*,4}	5.4	2.7	5.5	3.5	-0.087	-0.028
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	2,693	16.8%	2,743	17.1%	-0.312	-0.008
Overweight/Obesity [*]	3,755	23.4%	3,768	23.5%	-0.081	-0.002
Hypertension [*]	14,804	92.3%	15,068	94.0%	-1.647	-0.065
Hyperlipidemia [*]	11,736	73.2%	11,833	73.8%	-0.605	-0.014
Tobacco Smoking [*]	5,052	31.5%	5,247	32.7%	-1.216	-0.026
Alcohol Use [*]	880	5.5%	932	5.8%	-0.324	-0.014

Table 1t. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	13,012	81.2%	13,016	81.2%	-0.025	-0.001
Long/Intermediate-Acting Insulin*	11,399	71.1%	11,492	71.7%	-0.580	-0.013
Combination Insulin*	694	4.3%	712	4.4%	-0.112	-0.005
Insulin Pump*	1,627	10.1%	1,519	9.5%	0.674	0.023
Metformin*	637	4.0%	690	4.3%	-0.331	-0.017
Continuous Glucose Monitoring*	2,827	17.6%	2,750	17.2%	0.480	0.013
Lipid Lowering Medications*	11,095	69.2%	11,232	70.1%	-0.854	-0.019
Alpha Blockers*	2,150	13.4%	2,083	13.0%	0.418	0.012
Angiotensin II Receptor Blockers (ARBs)*	3,687	23.0%	3,732	23.3%	-0.281	-0.007
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	5,726	35.7%	5,894	36.8%	-1.048	-0.022
Beta Blockers*	9,579	59.7%	9,527	59.4%	0.324	0.007
Calcium Channel Blockers*	7,389	46.1%	7,320	45.7%	0.430	0.009
Diuretics*	8,045	50.2%	8,009	50.0%	0.225	0.004
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	32	0.2%	25	0.2%	0.044	0.010
Other Anti-Hypertensives*	2,034	12.7%	1,871	11.7%	1.017	0.031
Combination Anti-Hypertensives*	963	6.0%	969	6.0%	-0.037	-0.002

Table 1t. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	37.5	37.9	37.0	35.8	0.576	0.016
Mean number of emergency room encounters*	1.6	4.1	1.7	3.2	-0.052	-0.014
Mean number of inpatient hospital encounters*	1.2	2.3	1.3	2.1	-0.021	-0.010
Mean number of non-acute institutional encounters*	0.2	0.9	0.3	0.7	-0.008	-0.010
Mean number of other ambulatory encounters*	26.3	42.8	26.2	42.8	0.092	0.002
Mean number of filled prescriptions*	66.0	48.0	66.6	49.6	-0.575	-0.012
Mean number of generics dispensed*	15.6	7.4	15.8	7.4	-0.173	-0.023
Mean number of unique drug classes dispensed*	13.5	6.3	13.7	6.4	-0.142	-0.022

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1u. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	8,027	100.0%	8,078	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	57.7	15.1	58.5	15.5	-0.827	-0.054
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	24	0.3%	40	0.5%	-0.196	-0.031
12-18 years	62	0.8%	84	1.0%	-0.267	-0.028
19-24 years	122	1.5%	173	2.1%	-0.622	-0.046
25-44 years	1,904	23.7%	1,570	19.4%	4.284	0.104
45-64 years	2,731	34.0%	2,710	33.5%	0.475	0.010
≥ 65 years	3,184	39.7%	3,501	43.3%	-3.674	-0.075
Sex [*]						
Female	8,027	100.0%	8,078	100.0%	0.000	NaN
Male	0	0.0%	0	0.0%	NaN	NaN
Race ^{*,2}						
American Indian or Alaska Native	69	0.9%	58	0.7%	0.142	0.016
Asian	91	1.1%	112	1.4%	-0.253	-0.023
Black or African American	1,227	15.3%	1,343	16.6%	-1.339	-0.037
Multi-racial	22	0.3%	25	0.3%	-0.035	-0.007
Native Hawaiian or Other Pacific Islander	14	0.2%	17	0.2%	-0.036	-0.008
Unknown	1,353	16.9%	1,298	16.1%	0.787	0.021
White	5,251	65.4%	5,225	64.7%	0.735	0.015
Hispanic origin						
Yes	423	5.3%	399	4.9%	0.330	0.015
No	6,427	80.1%	6,504	80.5%	-0.448	-0.011
Unknown	1,177	14.7%	1,175	14.5%	0.117	0.003

Table 1u. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	1,245	15.5%	1,258	15.6%	-0.063	-0.002
2014	803	10.0%	713	8.8%	1.177	0.040
2015	713	8.9%	755	9.3%	-0.464	-0.016
2016	885	11.0%	941	11.6%	-0.624	-0.020
2017	936	11.7%	956	11.8%	-0.174	-0.005
2018	782	9.7%	801	9.9%	-0.174	-0.006
2019	620	7.7%	647	8.0%	-0.285	-0.011
2020	638	7.9%	616	7.6%	0.323	0.012
2021	678	8.4%	662	8.2%	0.251	0.009
2022	402	5.0%	394	4.9%	0.131	0.006
2023	312	3.9%	320	4.0%	-0.074	-0.004
2024	13	0.2%	15	0.2%	-0.024	-0.006
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	5.0	2.1	5.0	2.6	0.003	0.001
Combined comorbidity score ^{*,4}	5.6	2.7	5.7	3.5	-0.068	-0.021
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,386	17.3%	1,432	17.7%	-0.460	-0.012
Overweight/Obesity [*]	2,232	27.8%	2,211	27.4%	0.436	0.010
Hypertension [*]	7,402	92.2%	7,595	94.0%	-1.807	-0.071
Hyperlipidemia [*]	5,863	73.0%	5,929	73.4%	-0.356	-0.008
Tobacco Smoking [*]	2,344	29.2%	2,420	30.0%	-0.756	-0.017
Alcohol Use [*]	366	4.6%	326	4.0%	0.524	0.026

Table 1u. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	6,572	81.9%	6,573	81.4%	0.505	0.013
Long/Intermediate-Acting Insulin*	5,718	71.2%	5,756	71.3%	-0.021	-0.000
Combination Insulin*	363	4.5%	339	4.2%	0.326	0.016
Insulin Pump*	845	10.5%	799	9.9%	0.636	0.021
Metformin*	355	4.4%	338	4.2%	0.238	0.012
Continuous Glucose Monitoring*	1,447	18.0%	1,395	17.3%	0.758	0.020
Lipid Lowering Medications*	5,514	68.7%	5,576	69.0%	-0.334	-0.007
Alpha Blockers*	907	11.3%	942	11.7%	-0.362	-0.011
Angiotensin II Receptor Blockers (ARBs)*	1,951	24.3%	2,074	25.7%	-1.369	-0.032
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	2,760	34.4%	2,682	33.2%	1.183	0.025
Beta Blockers*	4,687	58.4%	4,809	59.5%	-1.142	-0.023
Calcium Channel Blockers*	3,488	43.5%	3,703	45.8%	-2.387	-0.048
Diuretics*	4,410	54.9%	4,386	54.3%	0.644	0.013
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	0.088	0.022
Other Anti-Hypertensives*	962	12.0%	931	11.5%	0.459	0.014
Combination Anti-Hypertensives*	479	6.0%	468	5.8%	0.174	0.007

Table 1u. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	38.9	37.8	38.3	35.3	0.615	0.017
Mean number of emergency room encounters*	1.8	4.7	1.8	3.1	0.013	0.003
Mean number of inpatient hospital encounters*	1.3	2.4	1.3	2.1	0.020	0.009
Mean number of non-acute institutional encounters*	0.3	0.9	0.3	0.8	-0.001	-0.002
Mean number of other ambulatory encounters*	28.9	45.6	28.0	44.7	0.932	0.021
Mean number of filled prescriptions*	71.9	51.9	70.7	51.5	1.150	0.022
Mean number of generics dispensed*	17.0	7.8	16.9	7.8	0.011	0.001
Mean number of unique drug classes dispensed*	14.7	6.6	14.7	6.6	-0.012	-0.002

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1v. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	7,361	91.7%	7,361	91.1%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	58.3	15.1	58.3	15.5	-0.034	-0.002
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	19	0.3%	38	0.5%	-0.258	-0.042
12-18 years	48	0.7%	83	1.1%	-0.475	-0.051
19-24 years	96	1.3%	161	2.2%	-0.883	-0.067
25-44 years	1,681	22.8%	1,447	19.7%	3.179	0.078
45-64 years	2,497	33.9%	2,440	33.1%	0.774	0.016
≥ 65 years	3,020	41.0%	3,192	43.4%	-2.337	-0.047
Sex [*]						
Female	7,361	100.0%	7,361	100.0%	0.000	NaN
Male	0	0.0%	0	0.0%	NaN	NaN
Race ^{*,2}						
American Indian or Alaska Native	52	0.7%	53	0.7%	-0.014	-0.002
Asian	89	1.2%	94	1.3%	-0.068	-0.006
Black or African American	1,170	15.9%	1,180	16.0%	-0.136	-0.004
Multi-racial	17	0.2%	20	0.3%	-0.041	-0.008
Native Hawaiian or Other Pacific Islander	14	0.2%	12	0.2%	0.027	0.006
Unknown	1,172	15.9%	1,139	15.5%	0.448	0.012
White	4,847	65.8%	4,863	66.1%	-0.217	-0.005
Hispanic origin						
Yes	366	5.0%	372	5.1%	-0.082	-0.004
No	5,980	81.2%	5,999	81.5%	-0.258	-0.007
Unknown	1,015	13.8%	990	13.4%	0.340	0.010

Table 1v. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	1,173	15.9%	1,165	15.8%	0.109	0.003
2014	694	9.4%	678	9.2%	0.217	0.007
2015	679	9.2%	679	9.2%	0.000	0.000
2016	804	10.9%	830	11.3%	-0.353	-0.011
2017	854	11.6%	864	11.7%	-0.136	-0.004
2018	726	9.9%	728	9.9%	-0.027	-0.001
2019	571	7.8%	587	8.0%	-0.217	-0.008
2020	588	8.0%	567	7.7%	0.285	0.011
2021	620	8.4%	599	8.1%	0.285	0.010
2022	365	5.0%	368	5.0%	-0.041	-0.002
2023	*****	*****	*****	*****	-0.109	-0.006
2024	*****	*****	*****	*****	-0.014	-0.004
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	5.1	2.1	5.1	2.6	0.000	0.000
Combined comorbidity score ^{*,4}	5.6	2.7	5.6	3.5	-0.007	-0.002
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,245	16.9%	1,265	17.2%	-0.272	-0.007
Overweight/Obesity [*]	2,024	27.5%	2,025	27.5%	-0.014	-0.000
Hypertension [*]	6,871	93.3%	6,893	93.6%	-0.299	-0.012
Hyperlipidemia [*]	5,421	73.6%	5,418	73.6%	0.041	0.001
Tobacco Smoking [*]	2,159	29.3%	2,165	29.4%	-0.082	-0.002
Alcohol Use [*]	299	4.1%	308	4.2%	-0.122	-0.006

Table 1v. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	6,010	81.6%	6,005	81.6%	0.068	0.002
Long/Intermediate-Acting Insulin*	5,253	71.4%	5,254	71.4%	-0.014	-0.000
Combination Insulin*	319	4.3%	312	4.2%	0.095	0.005
Insulin Pump*	711	9.7%	711	9.7%	0.000	0.000
Metformin*	304	4.1%	310	4.2%	-0.082	-0.004
Continuous Glucose Monitoring*	1,266	17.2%	1,264	17.2%	0.027	0.001
Lipid Lowering Medications*	5,082	69.0%	5,082	69.0%	0.000	0.000
Alpha Blockers*	847	11.5%	835	11.3%	0.163	0.005
Angiotensin II Recepting Blockers (ARBs)*	1,828	24.8%	1,839	25.0%	-0.149	-0.003
Angiotensin-Converting Enzyme Inhibitors (ACEis)*	2,487	33.8%	2,509	34.1%	-0.299	-0.006
Beta Blockers*	4,360	59.2%	4,366	59.3%	-0.082	-0.002
Calcium Channel Blockers*	3,287	44.7%	3,281	44.6%	0.082	0.002
Diuretics*	4,045	55.0%	4,039	54.9%	0.082	0.002
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	-0.014	-0.004
Other Anti-Hypertensives*	870	11.8%	871	11.8%	-0.014	-0.000
Combination Anti-Hypertensives*	421	5.7%	411	5.6%	0.136	0.006

Table 1v. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	38.5	36.9	38.3	35.3	0.181	0.005
Mean number of emergency room encounters*	1.7	4.7	1.7	3.1	-0.022	-0.006
Mean number of inpatient hospital encounters*	1.3	2.3	1.3	2.1	-0.003	-0.001
Mean number of non-acute institutional encounters*	0.3	0.9	0.3	0.8	0.000	0.000
Mean number of other ambulatory encounters*	28.4	44.9	28.3	45.4	0.136	0.003
Mean number of filled prescriptions*	71.2	49.1	71.3	52.1	-0.060	-0.001
Mean number of generics dispensed*	16.9	7.7	16.9	7.8	0.001	0.000
Mean number of unique drug classes dispensed*	14.7	6.5	14.7	6.6	0.001	0.000

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

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⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1w. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	8,006	100.0%	7,955	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	56.2	14.1	57.2	15.1	-0.985	-0.067
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	15	0.2%	40	0.5%	-0.315	-0.054
12-18 years	79	1.0%	100	1.3%	-0.270	-0.026
19-24 years	92	1.1%	134	1.7%	-0.535	-0.045
25-44 years	1,877	23.4%	1,644	20.7%	2.779	0.067
45-64 years	3,265	40.8%	2,961	37.2%	3.560	0.073
≥ 65 years	2,678	33.4%	3,076	38.7%	-5.218	-0.109
Sex [*]						
Female	0	0.0%	0	0.0%	NaN	NaN
Male	8,006	100.0%	7,955	100.0%	0.000	NaN
Race ^{*,2}						
American Indian or Alaska Native	46	0.6%	61	0.8%	-0.192	-0.024
Asian	99	1.2%	85	1.1%	0.168	0.016
Black or African American	1,162	14.5%	1,010	12.7%	1.818	0.053
Multi-racial	28	0.3%	32	0.4%	-0.053	-0.009
Native Hawaiian or Other Pacific Islander	25	0.3%	21	0.3%	0.048	0.009
Unknown	1,499	18.7%	1,497	18.8%	-0.095	-0.002
White	5,147	64.3%	5,249	66.0%	-1.694	-0.036
Hispanic origin						
Yes	377	4.7%	388	4.9%	-0.168	-0.008
No	6,223	77.7%	6,180	77.7%	0.042	0.001
Unknown	1,406	17.6%	1,387	17.4%	0.126	0.003

Table 1w. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	1,167	14.6%	1,161	14.6%	-0.018	-0.001
2014	714	8.9%	740	9.3%	-0.384	-0.013
2015	697	8.7%	660	8.3%	0.409	0.015
2016	871	10.9%	869	10.9%	-0.045	-0.001
2017	953	11.9%	894	11.2%	0.665	0.021
2018	787	9.8%	796	10.0%	-0.176	-0.006
2019	713	8.9%	680	8.5%	0.358	0.013
2020	663	8.3%	708	8.9%	-0.619	-0.022
2021	684	8.5%	689	8.7%	-0.118	-0.004
2022	403	5.0%	410	5.2%	-0.120	-0.005
2023	334	4.2%	329	4.1%	0.036	0.002
2024	20	0.2%	19	0.2%	0.011	0.002
Health Characteristics						
	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	5.0	2.2	5.2	2.5	-0.171	-0.072
Combined comorbidity score ^{*,4}	5.2	2.7	5.3	3.5	-0.104	-0.034
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,307	16.3%	1,311	16.5%	-0.155	-0.004
Overweight/Obesity [*]	1,523	19.0%	1,557	19.6%	-0.549	-0.014
Hypertension [*]	7,402	92.5%	7,473	93.9%	-1.485	-0.059
Hyperlipidemia [*]	5,873	73.4%	5,904	74.2%	-0.860	-0.020
Tobacco Smoking [*]	2,708	33.8%	2,827	35.5%	-1.713	-0.036
Alcohol Use [*]	514	6.4%	606	7.6%	-1.198	-0.047

Table 1w. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	6,440	80.4%	6,443	81.0%	-0.553	-0.014
Long/Intermediate-Acting Insulin*	5,681	71.0%	5,736	72.1%	-1.146	-0.025
Combination Insulin*	331	4.1%	373	4.7%	-0.554	-0.027
Insulin Pump*	782	9.8%	720	9.1%	0.717	0.025
Metformin*	282	3.5%	352	4.4%	-0.903	-0.046
Continuous Glucose Monitoring*	1,380	17.2%	1,355	17.0%	0.204	0.005
Lipid Lowering Medications*	5,581	69.7%	5,656	71.1%	-1.390	-0.030
Alpha Blockers*	1,243	15.5%	1,141	14.3%	1.183	0.033
Angiotensin II Receptor Blockers (ARBs)*	1,736	21.7%	1,658	20.8%	0.841	0.021
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	2,966	37.0%	3,212	40.4%	-3.330	-0.068
Beta Blockers*	4,892	61.1%	4,718	59.3%	1.796	0.037
Calcium Channel Blockers*	3,901	48.7%	3,617	45.5%	3.258	0.065
Diuretics*	3,635	45.4%	3,623	45.5%	-0.140	-0.003
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	15	0.2%	15	0.2%	-0.001	-0.000
Other Anti-Hypertensives*	1,072	13.4%	940	11.8%	1.573	0.047
Combination Anti-Hypertensives*	484	6.0%	501	6.3%	-0.252	-0.010

Table 1w. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	36.1	38.0	35.6	36.2	0.556	0.015
Mean number of emergency room encounters*	1.4	3.2	1.5	3.2	-0.117	-0.036
Mean number of inpatient hospital encounters*	1.2	2.2	1.2	2.0	-0.062	-0.029
Mean number of non-acute institutional encounters*	0.2	0.9	0.2	0.7	-0.015	-0.018
Mean number of other ambulatory encounters*	23.7	39.7	24.4	40.8	-0.728	-0.018
Mean number of filled prescriptions*	60.1	43.0	62.3	47.3	-2.252	-0.050
Mean number of generics dispensed*	14.3	6.8	14.6	6.9	-0.344	-0.050
Mean number of unique drug classes dispensed*	12.4	5.8	12.6	5.9	-0.258	-0.044

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1x. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	7,149	89.3%	7,149	89.9%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	57.1	14.0	57.0	15.2	0.055	0.004
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	*****	*****	*****	*****	-0.406	-0.071
12-18 years	*****	*****	*****	*****	-0.574	-0.055
19-24 years	68	1.0%	131	1.8%	-0.881	-0.075
25-44 years	1,569	21.9%	1,499	21.0%	0.979	0.024
45-64 years	2,915	40.8%	2,591	36.2%	4.532	0.093
≥ 65 years	2,529	35.4%	2,790	39.0%	-3.651	-0.076
Sex [*]						
Female	0	0.0%	0	0.0%	NaN	NaN
Male	7,149	100.0%	7,149	100.0%	0.000	NaN
Race ^{*,2}						
American Indian or Alaska Native	42	0.6%	54	0.8%	-0.168	-0.021
Asian	78	1.1%	81	1.1%	-0.042	-0.004
Black or African American	943	13.2%	962	13.5%	-0.266	-0.008
Multi-racial	24	0.3%	26	0.4%	-0.028	-0.005
Native Hawaiian or Other Pacific Islander	24	0.3%	19	0.3%	0.070	0.013
Unknown	1,269	17.8%	1,285	18.0%	-0.224	-0.006
White	4,769	66.7%	4,722	66.1%	0.657	0.014
Hispanic origin						
Yes	329	4.6%	334	4.7%	-0.070	-0.003
No	5,635	78.8%	5,626	78.7%	0.126	0.003
Unknown	1,185	16.6%	1,189	16.6%	-0.056	-0.002

Table 1x. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	1,056	14.8%	1,057	14.8%	-0.014	-0.000
2014	665	9.3%	679	9.5%	-0.196	-0.007
2015	612	8.6%	615	8.6%	-0.042	-0.001
2016	761	10.6%	778	10.9%	-0.238	-0.008
2017	825	11.5%	819	11.5%	0.084	0.003
2018	702	9.8%	706	9.9%	-0.056	-0.002
2019	625	8.7%	603	8.4%	0.308	0.011
2020	600	8.4%	609	8.5%	-0.126	-0.005
2021	614	8.6%	615	8.6%	-0.014	-0.000
2022	374	5.2%	361	5.0%	0.182	0.008
2023	299	4.2%	291	4.1%	0.112	0.006
2024	16	0.2%	16	0.2%	0.000	0.000
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	5.1	2.2	5.1	2.5	0.010	0.004
Combined comorbidity score ^{*,4}	5.3	2.7	5.3	3.5	0.016	0.005
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,158	16.2%	1,154	16.1%	0.056	0.002
Overweight/Obesity [*]	1,394	19.5%	1,394	19.5%	0.000	0.000
Hypertension [*]	6,687	93.5%	6,689	93.6%	-0.028	-0.001
Hyperlipidemia [*]	5,314	74.3%	5,303	74.2%	0.154	0.004
Tobacco Smoking [*]	2,490	34.8%	2,491	34.8%	-0.014	-0.000
Alcohol Use [*]	484	6.8%	499	7.0%	-0.210	-0.008

Table 1x. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	5,768	80.7%	5,782	80.9%	-0.196	-0.005
Long/Intermediate-Acting Insulin*	5,142	71.9%	5,127	71.7%	0.210	0.005
Combination Insulin*	311	4.4%	312	4.4%	-0.014	-0.001
Insulin Pump*	629	8.8%	641	9.0%	-0.168	-0.006
Metformin*	270	3.8%	290	4.1%	-0.280	-0.014
Continuous Glucose Monitoring*	1,215	17.0%	1,191	16.7%	0.336	0.009
Lipid Lowering Medications*	5,071	70.9%	5,049	70.6%	0.308	0.007
Alpha Blockers*	1,039	14.5%	1,061	14.8%	-0.308	-0.009
Angiotensin II Receptor Blockers (ARBs)*	1,536	21.5%	1,513	21.2%	0.322	0.008
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	2,759	38.6%	2,761	38.6%	-0.028	-0.001
Beta Blockers*	4,296	60.1%	4,289	60.0%	0.098	0.002
Calcium Channel Blockers*	3,340	46.7%	3,355	46.9%	-0.210	-0.004
Diuretics*	3,266	45.7%	3,250	45.5%	0.224	0.004
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	-0.056	-0.014
Other Anti-Hypertensives*	897	12.5%	880	12.3%	0.238	0.007
Combination Anti-Hypertensives*	439	6.1%	437	6.1%	0.028	0.001

Table 1x. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	35.4	36.5	35.5	36.5	-0.130	-0.004
Mean number of emergency room encounters*	1.5	3.3	1.5	3.2	-0.014	-0.004
Mean number of inpatient hospital encounters*	1.2	2.2	1.2	2.0	-0.026	-0.012
Mean number of non-acute institutional encounters*	0.2	0.9	0.2	0.7	-0.002	-0.002
Mean number of other ambulatory encounters*	23.6	39.1	23.9	40.1	-0.304	-0.008
Mean number of filled prescriptions*	60.8	43.0	61.3	45.2	-0.417	-0.009
Mean number of generics dispensed*	14.4	6.8	14.5	6.8	-0.029	-0.004
Mean number of unique drug classes dispensed*	12.5	5.8	12.5	5.8	-0.019	-0.003

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1y. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics ¹	Number	Percent	Number	Percent		
Unique patients	39	100.0%	80	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	8.6	3.0	7.7	3.0	0.934	0.307
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	39	100.0%	80	100.0%	0.000	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	24	61.5%	40	50.0%	11.538	0.234
Male	15	38.5%	40	50.0%	-11.538	-0.234
Race ^{*,2}						
American Indian or Alaska Native	0	0.0%	0	0.0%	NaN	NaN
Asian	*****	*****	*****	*****	-1.186	-0.068
Black or African American	*****	*****	*****	*****	13.013	0.382
Multi-racial	0	0.0%	0	0.0%	NaN	NaN
Native Hawaiian or Other Pacific Islander	*****	*****	0	0.0%	NaN	NaN
Unknown	*****	*****	*****	*****	-28.109	-0.600
White	19	48.7%	28	35.0%	13.718	0.281
Hispanic origin						
Yes	*****	*****	*****	*****	-8.429	-0.226
No	*****	*****	*****	*****	26.859	0.573
Unknown	*****	*****	*****	*****	-18.429	-0.456

Table 1y. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	0	0.0%	*****	*****	NaN	NaN
2014	0	0.0%	0	0.0%	NaN	NaN
2015	*****	*****	*****	*****	1.378	0.067
2016	*****	*****	*****	*****	-4.808	-0.160
2017	*****	*****	*****	*****	-3.494	-0.108
2018	*****	*****	*****	*****	1.699	0.045
2019	*****	*****	*****	*****	2.885	0.083
2020	13	33.3%	15	18.8%	14.583	0.337
2021	*****	*****	*****	*****	-5.994	-0.177
2022	0	0.0%	*****	*****	NaN	NaN
2023	0	0.0%	0	0.0%	NaN	NaN
2024	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	2.3	2.1	2.4	2.1	-0.017	-0.008
Combined comorbidity score ^{*,4}	4.4	3.1	4.3	3.5	0.148	0.045
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	*****	*****	*****	*****	-20.801	-0.474
Overweight/Obesity [*]	*****	*****	*****	*****	-3.558	-0.122
Hypertension [*]	14	35.9%	27	33.8%	2.147	0.045
Hyperlipidemia [*]	*****	*****	*****	*****	2.692	0.111
Tobacco Smoking [*]	0	0.0%	0	0.0%	NaN	NaN
Alcohol Use [*]	*****	*****	0	0.0%	NaN	NaN

Table 1y. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	31	79.5%	60	75.0%	4.487	0.107
Long/Intermediate-Acting Insulin*	30	76.9%	61	76.3%	0.673	0.016
Combination Insulin*	*****	*****	*****	*****	NaN	NaN
Insulin Pump*	*****	*****	*****	*****	-4.872	-0.185
Metformin*	*****	*****	0	0.0%	NaN	NaN
Continuous Glucose Monitoring*	*****	*****	*****	*****	-5.673	-0.130
Lipid Lowering Medications*	*****	*****	*****	*****	1.378	0.067
Alpha Blockers*	*****	*****	*****	*****	-4.808	-0.160
Angiotensin II Receptor Blockers (ARBs)*	0	0.0%	0	0.0%	NaN	NaN
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	*****	*****	*****	*****	4.135	0.122
Beta Blockers*	*****	*****	*****	*****	2.692	0.111
Calcium Channel Blockers*	*****	*****	*****	*****	18.205	0.476
Diuretics*	*****	*****	*****	*****	-3.558	-0.122
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	*****	*****	0	0.0%	NaN	NaN
Combination Anti-Hypertensives*	0	0.0%	0	0.0%	NaN	NaN

Table 1y. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	35.5	34.0	35.7	46.5	-0.188	-0.005
Mean number of emergency room encounters*	1.9	4.6	1.1	1.4	0.797	0.233
Mean number of inpatient hospital encounters*	1.8	2.5	1.2	1.9	0.532	0.244
Mean number of non-acute institutional encounters*	0.1	0.4	0.1	0.6	0.014	0.030
Mean number of other ambulatory encounters*	90.7	115.8	41.9	75.2	48.844	0.500
Mean number of filled prescriptions*	58.1	53.3	33.9	38.6	24.228	0.521
Mean number of generics dispensed*	14.4	8.4	10.4	8.1	3.998	0.486
Mean number of unique drug classes dispensed*	12.2	7.3	8.5	6.7	3.667	0.524

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1z. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	0 [†]	NaN	0 [†]	NaN		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years
12-18 years
19-24 years
25-44 years
45-64 years
≥ 65 years
Sex [*]						
Female
Male
Race ^{*,2}						
American Indian or Alaska Native
Asian
Black or African American
Multi-racial
Native Hawaiian or Other Pacific Islander
Unknown
White
Hispanic origin						
Yes
No
Unknown

Table 1z. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}
Combined comorbidity score ^{*,4}
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]
Overweight/Obesity [*]
Hypertension [*]
Hyperlipidemia [*]
Tobacco Smoking [*]
Alcohol Use [*]

Table 1z. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*
Long/Intermediate-Acting Insulin*
Combination Insulin*
Insulin Pump*
Metformin*
Continuous Glucose Monitoring*
Lipid Lowering Medications*
Alpha Blockers*
Angiotensin II Receptor Blockers (ARBs)*
Angiotensin-Converting Enzyme Inhibitors (ACEis)*
Beta Blockers*
Calcium Channel Blockers*
Diuretics*
Peripheral Vasodilators*
Renin Inhibitors*
Other Anti-Hypertensives*
Combination Anti-Hypertensives*

Table 1z. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*
Mean number of emergency room encounters*
Mean number of inpatient hospital encounters*
Mean number of non-acute institutional encounters*
Mean number of other ambulatory encounters*
Mean number of filled prescriptions*
Mean number of generics dispensed*
Mean number of unique drug classes dispensed*

[†]As there are 0 matched patients, no data are presented throughout the rest of the table.

*Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1aa. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	141	100.0%	184	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	16.1	1.9	15.6	2.1	0.439	0.220
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	141	100.0%	184	100.0%	0.000	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	62	44.0%	84	45.7%	-1.681	-0.034
Male	79	56.0%	100	54.3%	1.681	0.034
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	*****	*****	-0.424	-0.025
Asian	*****	*****	*****	*****	-0.212	-0.017
Black or African American	17	12.1%	36	19.6%	-7.508	-0.207
Multi-racial	0	0.0%	*****	*****	NaN	NaN
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.166	0.021
Unknown	70	49.6%	86	46.7%	2.906	0.058
White	*****	*****	*****	*****	5.616	0.122
Hispanic origin						
Yes	29	20.6%	46	25.0%	-4.433	-0.106
No	70	49.6%	93	50.5%	-0.898	-0.018
Unknown	42	29.8%	45	24.5%	5.331	0.120

Table 1aa. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	*****	*****	*****	*****	-2.054	-0.107
2014	*****	*****	0	0.0%	NaN	NaN
2015	*****	*****	*****	*****	-0.470	-0.021
2016	16	11.3%	19	10.3%	1.021	0.033
2017	21	14.9%	48	26.1%	-11.193	-0.280
2018	21	14.9%	35	19.0%	-4.128	-0.110
2019	19	13.5%	16	8.7%	4.780	0.153
2020	25	17.7%	19	10.3%	7.404	0.214
2021	17	12.1%	21	11.4%	0.644	0.020
2022	*****	*****	*****	*****	0.875	0.089
2023	*****	*****	*****	*****	-0.424	-0.025
2024	*****	*****	0	0.0%	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	2.5	1.9	2.4	2.1	0.126	0.062
Combined comorbidity score ^{*,4}	4.0	2.2	4.0	3.0	-0.006	-0.002
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	42	29.8%	72	39.1%	-9.343	-0.198
Overweight/Obesity [*]	30	21.3%	19	10.3%	10.951	0.304
Hypertension [*]	71	50.4%	83	45.1%	5.246	0.105
Hyperlipidemia [*]	13	9.2%	16	8.7%	0.524	0.018
Tobacco Smoking [*]	*****	*****	*****	*****	3.168	0.197
Alcohol Use [*]	*****	*****	*****	*****	0.331	0.030

Table 1aa. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	116	82.3%	151	82.1%	0.204	0.005
Long/Intermediate-Acting Insulin*	113	80.1%	143	77.7%	2.424	0.059
Combination Insulin*	*****	*****	*****	*****	-2.764	-0.151
Insulin Pump*	23	16.3%	25	13.6%	2.725	0.076
Metformin*	*****	*****	*****	*****	2.791	0.151
Continuous Glucose Monitoring*	26	18.4%	37	20.1%	-1.669	-0.042
Lipid Lowering Medications*	15	10.6%	14	7.6%	3.030	0.105
Alpha Blockers*	11	7.8%	26	14.1%	-6.329	-0.204
Angiotensin II Receptor Blockers (ARBs)*	*****	*****	*****	*****	2.791	0.151
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	31	22.0%	23	12.5%	9.486	0.253
Beta Blockers*	19	13.5%	26	14.1%	-0.655	-0.019
Calcium Channel Blockers*	44	31.2%	41	22.3%	8.923	0.203
Diuretics*	11	7.8%	19	10.3%	-2.525	-0.088
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	*****	*****	*****	*****	-0.212	-0.017
Combination Anti-Hypertensives*	*****	*****	0	0.0%	NaN	NaN

Table 1aa. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	27.0	27.6	36.1	51.0	-9.168	-0.224
Mean number of emergency room encounters*	1.2	1.6	1.6	2.7	-0.451	-0.203
Mean number of inpatient hospital encounters*	1.2	1.8	1.5	2.1	-0.291	-0.149
Mean number of non-acute institutional encounters*	0.0	0.2	0.1	0.5	-0.064	-0.185
Mean number of other ambulatory encounters*	43.4	64.5	38.7	69.9	4.632	0.069
Mean number of filled prescriptions*	53.5	51.0	44.2	49.4	9.367	0.187
Mean number of generics dispensed*	12.4	8.1	11.6	9.1	0.799	0.092
Mean number of unique drug classes dispensed*	10.5	7.2	9.8	8.1	0.742	0.097

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

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Table 1ab. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Patient Characteristics ¹	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Unique patients	55	39.0%	55	29.9%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	15.7	1.9	15.7	2.0	-0.015	-0.008
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	55	100.0%	55	100.0%	0.000	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	23	41.8%	27	49.1%	-7.273	-0.146
Male	32	58.2%	28	50.9%	7.273	0.146
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	*****	*****	0.000	0.000
Asian	*****	*****	*****	*****	-1.818	-0.112
Black or African American	*****	*****	*****	*****	-1.818	-0.048
Multi-racial	0	0.0%	0	0.0%	NaN	NaN
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.000	0.000
Unknown	27	49.1%	24	43.6%	5.455	0.110
White	15	27.3%	16	29.1%	-1.818	-0.040
Hispanic origin						
Yes	*****	*****	*****	*****	1.818	0.038
No	28	50.9%	31	56.4%	-5.455	-0.110
Unknown	*****	*****	*****	*****	3.636	0.117

Table 1ab. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	0	0.0%	0	0.0%	NaN	NaN
2014	0	0.0%	0	0.0%	NaN	NaN
2015	*****	*****	*****	*****	1.818	0.087
2016	*****	*****	*****	*****	3.636	0.117
2017	11	20.0%	11	20.0%	0.000	0.000
2018	*****	*****	*****	*****	0.000	0.000
2019	*****	*****	*****	*****	-7.273	-0.198
2020	11	20.0%	11	20.0%	0.000	0.000
2021	*****	*****	*****	*****	1.818	0.053
2022	0	0.0%	0	0.0%	NaN	NaN
2023	0	0.0%	0	0.0%	NaN	NaN
2024	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	2.4	1.9	2.4	2.0	0.036	0.018
Combined comorbidity score ^{*,4}	3.9	2.0	3.8	2.7	0.109	0.046
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	18	32.7%	17	30.9%	1.818	0.039
Overweight/Obesity [*]	*****	*****	*****	*****	1.818	0.048
Hypertension [*]	29	52.7%	30	54.5%	-1.818	-0.036
Hyperlipidemia [*]	*****	*****	*****	*****	0.000	0.000
Tobacco Smoking [*]	*****	*****	*****	*****	0.000	0.000
Alcohol Use [*]	0	0.0%	0	0.0%	NaN	NaN

Table 1ab. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	43	78.2%	44	80.0%	-1.818	-0.045
Long/Intermediate-Acting Insulin*	43	78.2%	44	80.0%	-1.818	-0.045
Combination Insulin*	*****	*****	0	0.0%	NaN	NaN
Insulin Pump*	*****	*****	*****	*****	-5.455	-0.170
Metformin*	*****	*****	*****	*****	1.818	0.075
Continuous Glucose Monitoring*	*****	*****	*****	*****	-5.455	-0.145
Lipid Lowering Medications*	*****	*****	*****	*****	1.818	0.053
Alpha Blockers*	*****	*****	*****	*****	1.818	0.056
Angiotensin II Receptor Blockers (ARBs)*	*****	*****	*****	*****	0.000	0.000
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	*****	*****	*****	*****	-5.455	-0.145
Beta Blockers*	*****	*****	*****	*****	5.455	0.183
Calcium Channel Blockers*	16	29.1%	17	30.9%	-1.818	-0.040
Diuretics*	*****	*****	*****	*****	-1.818	-0.066
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	0	0.0%	0	0.0%	NaN	NaN
Combination Anti-Hypertensives*	0	0.0%	0	0.0%	NaN	NaN

Table 1ab. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters [*]	30.7	32.5	32.2	43.9	-1.564	-0.040
Mean number of emergency room encounters [*]	0.9	1.4	1.3	1.6	-0.400	-0.264
Mean number of inpatient hospital encounters [*]	1.2	1.8	1.3	1.6	-0.036	-0.022
Mean number of non-acute institutional encounters [*]	0.0	0.1	0.0	0.1	0.000	0.000
Mean number of other ambulatory encounters [*]	48.5	62.3	53.2	96.8	-4.636	-0.057
Mean number of filled prescriptions [*]	54.7	59.6	57.7	65.9	-2.964	-0.047
Mean number of generics dispensed [*]	12.1	8.6	13.3	10.3	-1.200	-0.127
Mean number of unique drug classes dispensed [*]	10.2	7.7	11.4	9.1	-1.182	-0.140

^{*} Covariate included in the propensity score logistic regression model.

¹ Covariates in blue show a standardized difference greater than 0.1.

² Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³ Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴ Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1ac. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	214	100.0%	307	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	22.2	1.7	22.8	1.6	-0.574	-0.346
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	214	100.0%	307	100.0%	0.000	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	122	57.0%	173	56.4%	0.658	0.013
Male	92	43.0%	134	43.6%	-0.658	-0.013
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	*****	*****	-0.836	-0.089
Asian	*****	*****	*****	*****	1.359	0.107
Black or African American	*****	*****	*****	*****	-3.685	-0.089
Multi-racial	*****	*****	*****	*****	-0.836	-0.089
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.750	0.074
Unknown	84	39.3%	111	36.2%	3.096	0.064
White	77	36.0%	110	35.8%	0.151	0.003
Hispanic origin						
Yes	32	15.0%	41	13.4%	1.598	0.046
No	127	59.3%	185	60.3%	-0.915	-0.019
Unknown	55	25.7%	81	26.4%	-0.683	-0.016

Table 1ac. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	14	6.5%	19	6.2%	0.353	0.014
2014	*****	*****	*****	*****	-1.898	-0.107
2015	13	6.1%	19	6.2%	-0.114	-0.005
2016	27	12.6%	38	12.4%	0.239	0.007
2017	37	17.3%	52	16.9%	0.352	0.009
2018	31	14.5%	42	13.7%	0.805	0.023
2019	25	11.7%	31	10.1%	1.585	0.051
2020	19	8.9%	34	11.1%	-2.196	-0.073
2021	31	14.5%	34	11.1%	3.411	0.102
2022	*****	*****	*****	*****	-1.572	-0.090
2023	*****	*****	*****	*****	-0.638	-0.034
2024	0	0.0%	*****	*****	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	3.7	2.1	3.6	2.6	0.103	0.044
Combined comorbidity score ^{*,4}	5.0	2.7	4.5	3.1	0.447	0.153
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	104	48.6%	133	43.3%	5.276	0.106
Overweight/Obesity [*]	36	16.8%	49	16.0%	0.862	0.023
Hypertension [*]	126	58.9%	211	68.7%	-9.851	-0.206
Hyperlipidemia [*]	61	28.5%	74	24.1%	4.400	0.100
Tobacco Smoking [*]	53	24.8%	78	25.4%	-0.641	-0.015
Alcohol Use [*]	14	6.5%	15	4.9%	1.656	0.071

Table 1ac. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	171	79.9%	251	81.8%	-1.852	-0.047
Long/Intermediate-Acting Insulin*	167	78.0%	234	76.2%	1.816	0.043
Combination Insulin*	*****	*****	*****	*****	-1.148	-0.057
Insulin Pump*	32	15.0%	46	15.0%	-0.030	-0.001
Metformin*	*****	*****	*****	*****	2.860	0.152
Continuous Glucose Monitoring*	39	18.2%	50	16.3%	1.938	0.051
Lipid Lowering Medications*	42	19.6%	57	18.6%	1.059	0.027
Alpha Blockers*	22	10.3%	35	11.4%	-1.120	-0.036
Angiotensin II Receptor Blockers (ARBs)*	15	7.0%	15	4.9%	2.123	0.090
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	64	29.9%	69	22.5%	7.431	0.170
Beta Blockers*	53	24.8%	92	30.0%	-5.201	-0.117
Calcium Channel Blockers*	71	33.2%	77	25.1%	8.096	0.179
Diuretics*	36	16.8%	55	17.9%	-1.093	-0.029
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	13	6.1%	17	5.5%	0.537	0.023
Combination Anti-Hypertensives*	*****	*****	0	0.0%	NaN	NaN

Table 1ac. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	27.5	27.6	30.2	35.9	-2.706	-0.084
Mean number of emergency room encounters*	2.7	4.4	3.1	4.6	-0.436	-0.097
Mean number of inpatient hospital encounters*	2.6	4.2	2.7	4.6	-0.159	-0.036
Mean number of non-acute institutional encounters*	0.1	0.7	0.1	0.6	0.026	0.039
Mean number of other ambulatory encounters*	40.1	62.8	35.9	63.0	4.188	0.067
Mean number of filled prescriptions*	46.2	36.2	40.0	38.4	6.190	0.166
Mean number of generics dispensed*	14.1	7.9	12.8	8.7	1.314	0.157
Mean number of unique drug classes dispensed*	11.9	6.8	10.8	7.4	1.128	0.158

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Table 1ad. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	96	44.9%	96	31.3%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	22.5	1.7	22.8	1.7	-0.259	-0.153
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	96	100.0%	96	100.0%	0.000	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	55	57.3%	57	59.4%	-2.083	-0.042
Male	41	42.7%	39	40.6%	2.083	0.042
Race ^{*,2}						
American Indian or Alaska Native	0	0.0%	*****	*****	NaN	NaN
Asian	*****	*****	*****	*****	0.000	0.000
Black or African American	*****	*****	*****	*****	4.167	0.098
Multi-racial	*****	*****	0	0.0%	NaN	NaN
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	-1.042	-0.084
Unknown	32	33.3%	38	39.6%	-6.250	-0.130
White	35	36.5%	32	33.3%	3.125	0.066
Hispanic origin						
Yes	21	21.9%	27	28.1%	-6.250	-0.145
No	64	66.7%	58	60.4%	6.250	0.130
Unknown	11	11.5%	11	11.5%	0.000	0.000

Table 1ad. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	*****	*****	*****	*****	0.000	0.000
2014	0	0.0%	0	0.0%	NaN	NaN
2015	*****	*****	*****	*****	-1.042	-0.041
2016	13	13.5%	11	11.5%	2.083	0.063
2017	19	19.8%	23	24.0%	-4.167	-0.101
2018	20	20.8%	19	19.8%	1.042	0.026
2019	*****	*****	*****	*****	-1.042	-0.033
2020	11	11.5%	13	13.5%	-2.083	-0.063
2021	*****	*****	*****	*****	3.125	0.096
2022	0	0.0%	0	0.0%	NaN	NaN
2023	*****	*****	0	0.0%	NaN	NaN
2024	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	3.9	2.2	4.3	2.8	-0.396	-0.159
Combined comorbidity score ^{*,4}	4.9	2.9	5.2	2.8	-0.292	-0.103
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	50	52.1%	55	57.3%	-5.208	-0.105
Overweight/Obesity [*]	*****	*****	*****	*****	1.042	0.033
Hypertension [*]	60	62.5%	64	66.7%	-4.167	-0.087
Hyperlipidemia [*]	21	21.9%	22	22.9%	-1.042	-0.025
Tobacco Smoking [*]	25	26.0%	29	30.2%	-4.167	-0.093
Alcohol Use [*]	*****	*****	*****	*****	-1.042	-0.056

Table 1ad. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	80	83.3%	83	86.5%	-3.125	-0.087
Long/Intermediate-Acting Insulin*	75	78.1%	76	79.2%	-1.042	-0.025
Combination Insulin*	*****	*****	*****	*****	1.042	0.049
Insulin Pump*	12	12.5%	13	13.5%	-1.042	-0.031
Metformin*	*****	*****	*****	*****	-3.125	-0.197
Continuous Glucose Monitoring*	*****	*****	*****	*****	0.000	0.000
Lipid Lowering Medications*	23	24.0%	21	21.9%	2.083	0.050
Alpha Blockers*	11	11.5%	13	13.5%	-2.083	-0.063
Angiotensin II Receptor Blockers (ARBs)*	*****	*****	*****	*****	0.000	0.000
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	27	28.1%	30	31.3%	-3.125	-0.068
Beta Blockers*	28	29.2%	32	33.3%	-4.167	-0.090
Calcium Channel Blockers*	32	33.3%	33	34.4%	-1.042	-0.022
Diuretics*	20	20.8%	15	15.6%	5.208	0.135
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	*****	*****	*****	*****	-1.042	-0.039
Combination Anti-Hypertensives*	0	0.0%	0	0.0%	NaN	NaN

Table 1ad. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	27.8	27.9	30.6	27.3	-2.708	-0.098
Mean number of emergency room encounters*	3.0	5.2	3.2	4.2	-0.177	-0.038
Mean number of inpatient hospital encounters*	3.1	5.4	3.5	4.3	-0.427	-0.087
Mean number of non-acute institutional encounters*	0.1	0.2	0.0	0.2	0.021	0.092
Mean number of other ambulatory encounters*	46.3	68.3	50.0	74.3	-3.760	-0.053
Mean number of filled prescriptions*	48.4	35.8	50.3	51.9	-1.917	-0.043
Mean number of generics dispensed*	14.7	7.7	15.2	11.0	-0.531	-0.056
Mean number of unique drug classes dispensed*	12.4	6.3	12.9	9.2	-0.500	-0.063

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

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Table 1ae. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	3,781	100.0%	3,214	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	36.8	5.1	36.2	5.6	0.637	0.119
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	3,781	100.0%	3,214	100.0%	0.000	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	1,904	50.4%	1,570	48.8%	1.508	0.030
Male	1,877	49.6%	1,644	51.2%	-1.508	-0.030
Race ^{*,2}						
American Indian or Alaska Native	35	0.9%	37	1.2%	-0.226	-0.022
Asian	55	1.5%	50	1.6%	-0.101	-0.008
Black or African American	864	22.9%	675	21.0%	1.849	0.045
Multi-racial	*****	*****	*****	*****	0.106	0.014
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	-0.215	-0.042
Unknown	1,012	26.8%	844	26.3%	0.505	0.011
White	1,785	47.2%	1,579	49.1%	-1.919	-0.038
Hispanic origin						
Yes	386	10.2%	319	9.9%	0.284	0.009
No	2,682	70.9%	2,295	71.4%	-0.473	-0.010
Unknown	713	18.9%	600	18.7%	0.189	0.005

Table 1ae. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	440	11.6%	434	13.5%	-1.866	-0.056
2014	246	6.5%	209	6.5%	0.003	0.000
2015	293	7.7%	230	7.2%	0.593	0.023
2016	401	10.6%	345	10.7%	-0.129	-0.004
2017	579	15.3%	468	14.6%	0.752	0.021
2018	439	11.6%	369	11.5%	0.130	0.004
2019	370	9.8%	317	9.9%	-0.077	-0.003
2020	355	9.4%	314	9.8%	-0.381	-0.013
2021	389	10.3%	308	9.6%	0.705	0.024
2022	147	3.9%	119	3.7%	0.185	0.010
2023	*****	*****	*****	*****	0.059	0.003
2024	*****	*****	*****	*****	0.025	0.006
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.9	2.3	4.9	2.7	0.032	0.013
Combined comorbidity score ^{*,4}	5.1	2.5	4.7	3.2	0.371	0.129
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,205	31.9%	1,039	32.3%	-0.457	-0.010
Overweight/Obesity [*]	752	19.9%	720	22.4%	-2.513	-0.062
Hypertension [*]	3,364	89.0%	2,821	87.8%	1.199	0.037
Hyperlipidemia [*]	2,076	54.9%	1,669	51.9%	2.977	0.060
Tobacco Smoking [*]	1,458	38.6%	1,269	39.5%	-0.922	-0.019
Alcohol Use [*]	291	7.7%	262	8.2%	-0.455	-0.017

Table 1ae. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	3,053	80.7%	2,706	84.2%	-3.448	-0.091
Long/Intermediate-Acting Insulin*	2,790	73.8%	2,459	76.5%	-2.719	-0.063
Combination Insulin*	153	4.0%	140	4.4%	-0.309	-0.015
Insulin Pump*	527	13.9%	399	12.4%	1.524	0.045
Metformin*	109	2.9%	85	2.6%	0.238	0.015
Continuous Glucose Monitoring*	680	18.0%	506	15.7%	2.241	0.060
Lipid Lowering Medications*	1,880	49.7%	1,530	47.6%	2.118	0.042
Alpha Blockers*	561	14.8%	384	11.9%	2.890	0.085
Angiotensin II Receptor Blockers (ARBs)*	723	19.1%	470	14.6%	4.498	0.120
Angiotensin-Converting Enzyme Inhibitors (ACEis)*	1,482	39.2%	1,231	38.3%	0.895	0.018
Beta Blockers*	2,013	53.2%	1,401	43.6%	9.649	0.194
Calcium Channel Blockers*	1,740	46.0%	1,174	36.5%	9.492	0.194
Diuretics*	1,518	40.1%	1,088	33.9%	6.296	0.131
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	0.128	0.041
Other Anti-Hypertensives*	585	15.5%	340	10.6%	4.893	0.146
Combination Anti-Hypertensives*	191	5.1%	150	4.7%	0.384	0.018

Table 1ae. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	40.8	41.9	38.0	47.9	2.795	0.062
Mean number of emergency room encounters*	3.1	6.6	3.0	4.4	0.062	0.011
Mean number of inpatient hospital encounters*	2.1	3.3	2.1	3.1	0.017	0.005
Mean number of non-acute institutional encounters*	0.2	0.7	0.2	0.7	-0.026	-0.037
Mean number of other ambulatory encounters*	32.5	48.2	28.7	44.9	3.836	0.082
Mean number of filled prescriptions*	59.8	45.8	57.7	44.1	2.108	0.047
Mean number of generics dispensed*	16.1	8.5	15.6	8.5	0.469	0.055
Mean number of unique drug classes dispensed*	13.7	7.1	13.2	7.1	0.483	0.068

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

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⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Table 1af. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	2,650	70.1%	2,650	82.5%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	36.6	5.1	36.6	5.5	-0.065	-0.012
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	2,650	100.0%	2,650	100.0%	0.000	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	1,333	50.3%	1,322	49.9%	0.415	0.008
Male	1,317	49.7%	1,328	50.1%	-0.415	-0.008
Race ^{*,2}						
American Indian or Alaska Native	27	1.0%	27	1.0%	0.000	0.000
Asian	38	1.4%	39	1.5%	-0.038	-0.003
Black or African American	583	22.0%	586	22.1%	-0.113	-0.003
Multi-racial	*****	*****	*****	*****	0.038	0.006
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.000	0.000
Unknown	683	25.8%	690	26.0%	-0.264	-0.006
White	1,300	49.1%	1,290	48.7%	0.377	0.008
Hispanic origin						
Yes	274	10.3%	276	10.4%	-0.075	-0.002
No	1,922	72.5%	1,914	72.2%	0.302	0.007
Unknown	454	17.1%	460	17.4%	-0.226	-0.006

Table 1af. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	331	12.5%	325	12.3%	0.226	0.007
2014	158	6.0%	165	6.2%	-0.264	-0.011
2015	189	7.1%	193	7.3%	-0.151	-0.006
2016	287	10.8%	293	11.1%	-0.226	-0.007
2017	387	14.6%	405	15.3%	-0.679	-0.019
2018	310	11.7%	308	11.6%	0.075	0.002
2019	270	10.2%	262	9.9%	0.302	0.010
2020	265	10.0%	259	9.8%	0.226	0.008
2021	277	10.5%	272	10.3%	0.189	0.006
2022	102	3.8%	94	3.5%	0.302	0.016
2023	*****	*****	*****	*****	-0.038	-0.002
2024	*****	*****	*****	*****	0.038	0.009
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.9	2.3	5.0	2.7	-0.045	-0.018
Combined comorbidity score ^{*,4}	5.0	2.5	5.0	3.2	0.008	0.003
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	866	32.7%	872	32.9%	-0.226	-0.005
Overweight/Obesity [*]	560	21.1%	552	20.8%	0.302	0.007
Hypertension [*]	2,350	88.7%	2,354	88.8%	-0.151	-0.005
Hyperlipidemia [*]	1,369	51.7%	1,386	52.3%	-0.642	-0.013
Tobacco Smoking [*]	1,041	39.3%	1,047	39.5%	-0.226	-0.005
Alcohol Use [*]	213	8.0%	223	8.4%	-0.377	-0.014

Table 1af. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	2,187	82.5%	2,193	82.8%	-0.226	-0.006
Long/Intermediate-Acting Insulin*	1,996	75.3%	2,017	76.1%	-0.792	-0.018
Combination Insulin*	116	4.4%	108	4.1%	0.302	0.015
Insulin Pump*	343	12.9%	331	12.5%	0.453	0.014
Metformin*	73	2.8%	70	2.6%	0.113	0.007
Continuous Glucose Monitoring*	429	16.2%	426	16.1%	0.113	0.003
Lipid Lowering Medications*	1,292	48.8%	1,303	49.2%	-0.415	-0.008
Alpha Blockers*	355	13.4%	343	12.9%	0.453	0.013
Angiotensin II Receptor Blockers (ARBs)*	432	16.3%	428	16.2%	0.151	0.004
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	1,033	39.0%	1,048	39.5%	-0.566	-0.012
Beta Blockers*	1,265	47.7%	1,265	47.7%	0.000	0.000
Calcium Channel Blockers*	1,054	39.8%	1,069	40.3%	-0.566	-0.012
Diuretics*	973	36.7%	978	36.9%	-0.189	-0.004
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	332	12.5%	325	12.3%	0.264	0.008
Combination Anti-Hypertensives*	131	4.9%	131	4.9%	0.000	0.000

Table 1af. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	38.2	39.3	39.6	50.7	-1.383	-0.030
Mean number of emergency room encounters*	3.0	6.8	3.0	4.3	0.026	0.005
Mean number of inpatient hospital encounters*	2.1	3.5	2.1	3.1	-0.009	-0.003
Mean number of non-acute institutional encounters*	0.2	0.7	0.2	0.6	-0.001	-0.002
Mean number of other ambulatory encounters*	30.6	45.5	31.0	47.9	-0.405	-0.009
Mean number of filled prescriptions*	58.3	45.1	59.0	44.4	-0.686	-0.015
Mean number of generics dispensed*	15.9	8.5	16.0	8.5	-0.126	-0.015
Mean number of unique drug classes dispensed*	13.4	7.1	13.6	7.1	-0.135	-0.019

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1ag. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	5,996	100.0%	5,671	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	55.1	5.6	55.6	5.5	-0.526	-0.095
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	5,996	100.0%	5,671	100.0%	0.000	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	2,731	45.5%	2,710	47.8%	-2.240	-0.045
Male	3,265	54.5%	2,961	52.2%	2.240	0.045
Race ^{*,2}						
American Indian or Alaska Native	48	0.8%	51	0.9%	-0.099	-0.011
Asian	57	1.0%	52	0.9%	0.034	0.004
Black or African American	867	14.5%	881	15.5%	-1.076	-0.030
Multi-racial	22	0.4%	30	0.5%	-0.162	-0.024
Native Hawaiian or Other Pacific Islander	14	0.2%	14	0.2%	-0.013	-0.003
Unknown	1,193	19.9%	1,133	20.0%	-0.082	-0.002
White	3,795	63.3%	3,510	61.9%	1.398	0.029
Hispanic origin						
Yes	257	4.3%	241	4.2%	0.036	0.002
No	4,536	75.7%	4,299	75.8%	-0.156	-0.004
Unknown	1,203	20.1%	1,131	19.9%	0.120	0.003

Table 1ag. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Demographic Characteristics						
Year*						
2013	938	15.6%	843	14.9%	0.779	0.022
2014	519	8.7%	479	8.4%	0.209	0.007
2015	481	8.0%	490	8.6%	-0.618	-0.022
2016	718	12.0%	656	11.6%	0.407	0.013
2017	752	12.5%	688	12.1%	0.410	0.012
2018	572	9.5%	597	10.5%	-0.988	-0.033
2019	504	8.4%	490	8.6%	-0.235	-0.008
2020	479	8.0%	499	8.8%	-0.810	-0.029
2021	497	8.3%	483	8.5%	-0.228	-0.008
2022	291	4.9%	243	4.3%	0.568	0.027
2023	230	3.8%	189	3.3%	0.503	0.027
2024	15	0.3%	14	0.2%	0.003	0.001
Health Characteristics						
	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI)*,3	5.0	2.2	5.2	2.5	-0.253	-0.106
Combined comorbidity score*,4	5.1	2.6	5.3	3.3	-0.230	-0.077
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA)*	901	15.0%	949	16.7%	-1.708	-0.047
Overweight/Obesity*	1,405	23.4%	1,477	26.0%	-2.613	-0.061
Hypertension*	5,559	92.7%	5,465	96.4%	-3.656	-0.161
Hyperlipidemia*	4,519	75.4%	4,370	77.1%	-1.692	-0.040
Tobacco Smoking*	1,973	32.9%	2,075	36.6%	-3.684	-0.077
Alcohol Use*	354	5.9%	419	7.4%	-1.485	-0.060

Table 1ag. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	4,938	82.4%	4,700	82.9%	-0.523	-0.014
Long/Intermediate-Acting Insulin*	4,073	67.9%	4,023	70.9%	-3.011	-0.065
Combination Insulin*	214	3.6%	254	4.5%	-0.910	-0.046
Insulin Pump*	814	13.6%	777	13.7%	-0.126	-0.004
Metformin*	244	4.1%	318	5.6%	-1.538	-0.072
Continuous Glucose Monitoring*	1,125	18.8%	1,020	18.0%	0.776	0.020
Lipid Lowering Medications*	4,403	73.4%	4,340	76.5%	-3.097	-0.072
Alpha Blockers*	760	12.7%	726	12.8%	-0.127	-0.004
Angiotensin II Receptor Blockers (ARBs)*	1,383	23.1%	1,295	22.8%	0.230	0.005
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	2,193	36.6%	2,353	41.5%	-4.917	-0.101
Beta Blockers*	3,660	61.0%	3,538	62.4%	-1.347	-0.028
Calcium Channel Blockers*	2,744	45.8%	2,556	45.1%	0.692	0.014
Diuretics*	2,817	47.0%	2,905	51.2%	-4.244	-0.085
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	0.107	0.022
Other Anti-Hypertensives*	687	11.5%	695	12.3%	-0.798	-0.025
Combination Anti-Hypertensives*	315	5.3%	374	6.6%	-1.341	-0.057

Table 1ag. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	37.8	39.9	36.1	34.3	1.740	0.047
Mean number of emergency room encounters*	1.4	3.4	1.7	3.4	-0.276	-0.082
Mean number of inpatient hospital encounters*	1.1	2.0	1.2	1.8	-0.119	-0.061
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.7	-0.016	-0.021
Mean number of other ambulatory encounters*	24.6	43.3	28.3	46.8	-3.702	-0.082
Mean number of filled prescriptions*	68.4	46.0	76.4	53.2	-8.058	-0.162
Mean number of generics dispensed*	15.7	7.4	17.0	7.6	-1.237	-0.165
Mean number of unique drug classes dispensed*	13.7	6.3	14.7	6.5	-1.019	-0.159

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1ah. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	4,831	80.6%	4,831	85.2%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	55.4	5.6	55.4	5.5	-0.029	-0.005
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	4,831	100.0%	4,831	100.0%	0.000	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	2,287	47.3%	2,283	47.3%	0.083	0.002
Male	2,544	52.7%	2,548	52.7%	-0.083	-0.002
Race ^{*,2}						
American Indian or Alaska Native	43	0.9%	43	0.9%	0.000	0.000
Asian	43	0.9%	46	1.0%	-0.062	-0.007
Black or African American	725	15.0%	710	14.7%	0.310	0.009
Multi-racial	*****	*****	*****	*****	-0.021	-0.003
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	-0.041	-0.009
Unknown	911	18.9%	931	19.3%	-0.414	-0.011
White	3,077	63.7%	3,066	63.5%	0.228	0.005
Hispanic origin						
Yes	187	3.9%	198	4.1%	-0.228	-0.012
No	3,709	76.8%	3,691	76.4%	0.373	0.009
Unknown	935	19.4%	942	19.5%	-0.145	-0.004

Table 1ah. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	766	15.9%	763	15.8%	0.062	0.002
2014	437	9.0%	426	8.8%	0.228	0.008
2015	427	8.8%	419	8.7%	0.166	0.006
2016	570	11.8%	568	11.8%	0.041	0.001
2017	589	12.2%	596	12.3%	-0.145	-0.004
2018	473	9.8%	467	9.7%	0.124	0.004
2019	389	8.1%	404	8.4%	-0.310	-0.011
2020	406	8.4%	404	8.4%	0.041	0.001
2021	384	7.9%	388	8.0%	-0.083	-0.003
2022	215	4.5%	214	4.4%	0.021	0.001
2023	*****	*****	*****	*****	-0.103	-0.006
2024	*****	*****	*****	*****	-0.041	-0.009
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	5.1	2.2	5.1	2.5	-0.031	-0.013
Combined comorbidity score ^{*,4}	5.1	2.6	5.2	3.3	-0.027	-0.009
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	764	15.8%	771	16.0%	-0.145	-0.004
Overweight/Obesity [*]	1,220	25.3%	1,235	25.6%	-0.310	-0.007
Hypertension [*]	4,634	95.9%	4,626	95.8%	0.166	0.008
Hyperlipidemia [*]	3,721	77.0%	3,734	77.3%	-0.269	-0.006
Tobacco Smoking [*]	1,693	35.0%	1,687	34.9%	0.124	0.003
Alcohol Use [*]	301	6.2%	302	6.3%	-0.021	-0.001

Table 1ah. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	4,021	83.2%	4,009	83.0%	0.248	0.007
Long/Intermediate-Acting Insulin*	3,354	69.4%	3,367	69.7%	-0.269	-0.006
Combination Insulin*	192	4.0%	203	4.2%	-0.228	-0.011
Insulin Pump*	678	14.0%	661	13.7%	0.352	0.010
Metformin*	215	4.5%	229	4.7%	-0.290	-0.014
Continuous Glucose Monitoring*	880	18.2%	881	18.2%	-0.021	-0.001
Lipid Lowering Medications*	3,665	75.9%	3,641	75.4%	0.497	0.012
Alpha Blockers*	619	12.8%	596	12.3%	0.476	0.014
Angiotensin II Receptor Blockers (ARBs)*	1,085	22.5%	1,081	22.4%	0.083	0.002
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	1,904	39.4%	1,920	39.7%	-0.331	-0.007
Beta Blockers*	2,968	61.4%	2,975	61.6%	-0.145	-0.003
Calcium Channel Blockers*	2,122	43.9%	2,129	44.1%	-0.145	-0.003
Diuretics*	2,383	49.3%	2,394	49.6%	-0.228	-0.005
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	0.000	0.000
Other Anti-Hypertensives*	558	11.6%	548	11.3%	0.207	0.007
Combination Anti-Hypertensives*	285	5.9%	285	5.9%	0.000	0.000

Table 1ah. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	35.4	35.1	36.4	35.1	-0.933	-0.027
Mean number of emergency room encounters*	1.5	3.0	1.6	2.7	-0.030	-0.011
Mean number of inpatient hospital encounters*	1.1	2.0	1.1	1.8	-0.014	-0.007
Mean number of non-acute institutional encounters*	0.2	0.9	0.2	0.7	0.000	0.001
Mean number of other ambulatory encounters*	26.0	45.1	25.6	43.9	0.450	0.010
Mean number of filled prescriptions*	72.1	47.0	72.7	50.9	-0.658	-0.013
Mean number of generics dispensed*	16.4	7.5	16.4	7.4	-0.063	-0.008
Mean number of unique drug classes dispensed*	14.2	6.4	14.3	6.3	-0.038	-0.006

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

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⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Table 1ai. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	5,862	100.0%	6,577	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	74.4	7.3	73.8	6.9	0.586	0.083
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	5,862	100.0%	6,577	100.0%	0.000	NaN
Sex [*]						
Female	3,184	54.3%	3,501	53.2%	1.085	0.022
Male	2,678	45.7%	3,076	46.8%	-1.085	-0.022
Race ^{*,2}						
American Indian or Alaska Native	27	0.5%	21	0.3%	0.141	0.023
Asian	70	1.2%	86	1.3%	-0.113	-0.010
Black or African American	590	10.1%	682	10.4%	-0.305	-0.010
Multi-racial	*****	*****	*****	*****	-0.025	-0.010
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.102	0.024
Unknown	483	8.2%	578	8.8%	-0.549	-0.020
White	4,675	79.8%	5,196	79.0%	0.748	0.018
Hispanic origin						
Yes	91	1.6%	123	1.9%	-0.318	-0.025
No	5,206	88.8%	5,774	87.8%	1.018	0.032
Unknown	565	9.6%	680	10.3%	-0.701	-0.023

Table 1ai. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	1,016	17.3%	1,110	16.9%	0.455	0.012
2014	744	12.7%	752	11.4%	1.258	0.039
2015	614	10.5%	663	10.1%	0.394	0.013
2016	591	10.1%	742	11.3%	-1.200	-0.039
2017	496	8.5%	583	8.9%	-0.403	-0.014
2018	499	8.5%	541	8.2%	0.287	0.010
2019	409	7.0%	463	7.0%	-0.063	-0.002
2020	410	7.0%	443	6.7%	0.259	0.010
2021	424	7.2%	492	7.5%	-0.248	-0.009
2022	360	6.1%	428	6.5%	-0.366	-0.015
2023	*****	*****	*****	*****	-0.312	-0.014
2024	*****	*****	*****	*****	-0.061	-0.015
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	5.3	2.0	5.3	2.4	-0.019	-0.009
Combined comorbidity score ^{*,4}	6.0	2.9	6.1	3.7	-0.135	-0.041
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	434	7.4%	519	7.9%	-0.488	-0.018
Overweight/Obesity [*]	1,529	26.1%	1,494	22.7%	3.368	0.078
Hypertension [*]	5,670	96.7%	6,461	98.2%	-1.512	-0.097
Hyperlipidemia [*]	5,064	86.4%	5,700	86.7%	-0.279	-0.008
Tobacco Smoking [*]	1,562	26.6%	1,823	27.7%	-1.072	-0.024
Alcohol Use [*]	218	3.7%	234	3.6%	0.161	0.009

Table 1ai. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	4,703	80.2%	5,148	78.3%	1.956	0.048
Long/Intermediate-Acting Insulin*	4,226	72.1%	4,572	69.5%	2.576	0.057
Combination Insulin*	313	5.3%	294	4.5%	0.869	0.040
Insulin Pump*	229	3.9%	264	4.0%	-0.107	-0.006
Metformin*	264	4.5%	276	4.2%	0.307	0.015
Continuous Glucose Monitoring*	948	16.2%	1,114	16.9%	-0.766	-0.021
Lipid Lowering Medications*	4,753	81.1%	5,288	80.4%	0.680	0.017
Alpha Blockers*	793	13.5%	902	13.7%	-0.187	-0.005
Angiotensin II Receptor Blockers (ARBs)*	1,559	26.6%	1,948	29.6%	-3.023	-0.067
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	1,950	33.3%	2,209	33.6%	-0.322	-0.007
Beta Blockers*	3,831	65.4%	4,466	67.9%	-2.550	-0.054
Calcium Channel Blockers*	2,779	47.4%	3,464	52.7%	-5.261	-0.105
Diuretics*	3,660	62.4%	3,933	59.8%	2.637	0.054
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	-0.059	-0.014
Other Anti-Hypertensives*	746	12.7%	816	12.4%	0.319	0.010
Combination Anti-Hypertensives*	450	7.7%	445	6.8%	0.911	0.035

Table 1ai. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	35.7	33.3	37.5	28.6	-1.790	-0.058
Mean number of emergency room encounters*	0.8	1.6	0.9	1.7	-0.087	-0.053
Mean number of inpatient hospital encounters*	0.8	1.4	0.8	1.2	-0.040	-0.031
Mean number of non-acute institutional encounters*	0.3	1.0	0.3	0.8	0.023	0.025
Mean number of other ambulatory encounters*	22.7	35.6	22.2	34.3	0.487	0.014
Mean number of filled prescriptions*	68.7	50.5	64.7	46.7	3.968	0.082
Mean number of generics dispensed*	15.3	6.6	15.2	6.3	0.152	0.024
Mean number of unique drug classes dispensed*	13.4	5.6	13.3	5.4	0.092	0.017

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Table 1aj. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	5,230	89.2%	5,230	79.5%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	74.0	7.1	74.0	7.0	-0.040	-0.006
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	5,230	100.0%	5,230	100.0%	0.000	NaN
Sex [*]						
Female	2,780	53.2%	2,780	53.2%	0.000	0.000
Male	2,450	46.8%	2,450	46.8%	0.000	0.000
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	*****	*****	0.019	0.003
Asian	67	1.3%	61	1.2%	0.115	0.010
Black or African American	532	10.2%	524	10.0%	0.153	0.005
Multi-racial	*****	*****	*****	*****	0.000	0.000
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.019	0.005
Unknown	381	7.3%	375	7.2%	0.115	0.004
White	4,219	80.7%	4,241	81.1%	-0.421	-0.011
Hispanic origin						
Yes	77	1.5%	68	1.3%	0.172	0.015
No	4,715	90.2%	4,719	90.2%	-0.076	-0.003
Unknown	438	8.4%	443	8.5%	-0.096	-0.003

Table 1aj. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Demographic Characteristics						
Year*						
2013	894	17.1%	898	17.2%	-0.076	-0.002
2014	638	12.2%	640	12.2%	-0.038	-0.001
2015	547	10.5%	544	10.4%	0.057	0.002
2016	555	10.6%	552	10.6%	0.057	0.002
2017	444	8.5%	449	8.6%	-0.096	-0.003
2018	431	8.2%	452	8.6%	-0.402	-0.014
2019	368	7.0%	371	7.1%	-0.057	-0.002
2020	360	6.9%	345	6.6%	0.287	0.011
2021	382	7.3%	384	7.3%	-0.038	-0.001
2022	334	6.4%	325	6.2%	0.172	0.007
2023	*****	*****	*****	*****	0.191	0.009
2024	*****	*****	*****	*****	-0.057	-0.015
Health Characteristics		Standard		Standard	Absolute	Standardized
	Mean	Deviation	Mean	Deviation	Difference	Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	5.3	2.1	5.3	2.4	-0.003	-0.001
Combined comorbidity score ^{*,4}	6.0	2.9	6.0	3.7	0.002	0.001
	Number	Percent	Number	Percent	Absolute	Standardized
					Difference	Difference
History of Diabetic Ketoacidosis (DKA) [*]	396	7.6%	392	7.5%	0.076	0.003
Overweight/Obesity [*]	1,280	24.5%	1,279	24.5%	0.019	0.000
Hypertension [*]	5,128	98.0%	5,116	97.8%	0.229	0.016
Hyperlipidemia [*]	4,566	87.3%	4,535	86.7%	0.593	0.018
Tobacco Smoking [*]	1,434	27.4%	1,433	27.4%	0.019	0.000
Alcohol Use [*]	187	3.6%	183	3.5%	0.076	0.004

Table 1aj. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	4,166	79.7%	4,148	79.3%	0.344	0.009
Long/Intermediate-Acting Insulin*	3,736	71.4%	3,717	71.1%	0.363	0.008
Combination Insulin*	230	4.4%	244	4.7%	-0.268	-0.013
Insulin Pump*	184	3.5%	176	3.4%	0.153	0.008
Metformin*	211	4.0%	226	4.3%	-0.287	-0.014
Continuous Glucose Monitoring*	873	16.7%	855	16.3%	0.344	0.009
Lipid Lowering Medications*	4,253	81.3%	4,226	80.8%	0.516	0.013
Alpha Blockers*	730	14.0%	700	13.4%	0.574	0.017
Angiotensin II Receptor Blockers (ARBs)*	1,456	27.8%	1,478	28.3%	-0.421	-0.009
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	1,758	33.6%	1,756	33.6%	0.038	0.001
Beta Blockers*	3,510	67.1%	3,497	66.9%	0.249	0.005
Calcium Channel Blockers*	2,597	49.7%	2,605	49.8%	-0.153	-0.003
Diuretics*	3,213	61.4%	3,201	61.2%	0.229	0.005
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	-0.038	-0.009
Other Anti-Hypertensives*	662	12.7%	647	12.4%	0.287	0.009
Combination Anti-Hypertensives*	379	7.2%	369	7.1%	0.191	0.007

Table 1aj. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	36.4	33.4	37.0	28.0	-0.628	-0.020
Mean number of emergency room encounters*	0.8	1.6	0.8	1.5	-0.008	-0.005
Mean number of inpatient hospital encounters*	0.8	1.4	0.8	1.2	-0.011	-0.009
Mean number of non-acute institutional encounters*	0.3	0.9	0.3	0.8	-0.011	-0.013
Mean number of other ambulatory encounters*	21.7	34.7	21.9	33.2	-0.208	-0.006
Mean number of filled prescriptions*	65.1	44.4	65.6	48.0	-0.448	-0.010
Mean number of generics dispensed*	15.1	6.4	15.1	6.3	-0.014	-0.002
Mean number of unique drug classes dispensed*	13.2	5.5	13.3	5.4	-0.016	-0.003

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

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Table 1ak. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	74,974	100.0%	608,462	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	58.2	15.3	39.1	16.1	19.041	1.212
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	85	0.1%	51,822	8.5%	-8.404	-0.423
12-18 years	276	0.4%	80,831	13.3%	-12.916	-0.530
19-24 years	654	0.9%	60,701	10.0%	-9.104	-0.410
25-44 years	17,412	23.2%	181,430	29.8%	-6.594	-0.150
45-64 years	26,282	35.1%	132,847	21.8%	13.222	0.296
≥ 65 years	30,265	40.4%	100,831	16.6%	23.796	0.547
Sex [*]						
Female	37,464	50.0%	303,219	49.8%	0.136	0.003
Male	37,510	50.0%	305,243	50.2%	-0.136	-0.003
Race ^{*,2}						
American Indian or Alaska Native	572	0.8%	3,494	0.6%	0.189	0.023
Asian	936	1.2%	6,099	1.0%	0.246	0.023
Black or African American	12,244	16.3%	54,528	9.0%	7.369	0.223
Multi-racial	145	0.2%	4,610	0.8%	-0.564	-0.082
Native Hawaiian or Other Pacific Islander	131	0.2%	922	0.2%	0.023	0.006
Unknown	11,797	15.7%	226,455	37.2%	-21.483	-0.502
White	49,149	65.6%	312,354	51.3%	14.220	0.292
Hispanic origin						
Yes	3,483	4.6%	41,638	6.8%	-2.198	-0.095
No	60,832	81.1%	356,046	58.5%	22.622	0.509
Unknown	10,659	14.2%	210,778	34.6%	-20.424	-0.489

Table 1ak. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	12,321	16.4%	82,259	13.5%	2.915	0.082
2014	7,653	10.2%	48,419	8.0%	2.250	0.078
2015	7,092	9.5%	55,163	9.1%	0.393	0.014
2016	7,432	9.9%	62,460	10.3%	-0.352	-0.012
2017	7,995	10.7%	85,369	14.0%	-3.367	-0.102
2018	6,828	9.1%	63,186	10.4%	-1.277	-0.043
2019	5,903	7.9%	52,321	8.6%	-0.725	-0.026
2020	5,975	8.0%	52,868	8.7%	-0.719	-0.026
2021	6,022	8.0%	61,189	10.1%	-2.024	-0.071
2022	4,198	5.6%	22,513	3.7%	1.899	0.090
2023	3,402	4.5%	20,859	3.4%	1.109	0.057
2024	153	0.2%	1,856	0.3%	-0.101	-0.020
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	5.6	2.4	1.4	1.7	4.222	2.043
Combined comorbidity score ^{*,4}	6.1	3.1	1.5	1.8	4.584	1.807
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	11,861	15.8%	82,270	13.5%	2.299	0.065
Overweight/Obesity [*]	18,872	25.2%	65,690	10.8%	14.375	0.381
Hypertension [*]	70,337	93.8%	216,475	35.6%	58.238	1.537
Hyperlipidemia [*]	58,980	78.7%	237,749	39.1%	39.594	0.879
Tobacco Smoking [*]	25,506	34.0%	102,108	16.8%	17.238	0.404
Alcohol Use [*]	3,893	5.2%	21,981	3.6%	1.580	0.077

Table 1ak. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	61,137	81.5%	532,275	87.5%	-5.934	-0.165
Long/Intermediate-Acting Insulin*	53,774	71.7%	424,741	69.8%	1.918	0.042
Combination Insulin*	3,452	4.6%	16,960	2.8%	1.817	0.096
Insulin Pump*	6,631	8.8%	133,583	22.0%	-13.110	-0.369
Metformin*	3,766	5.0%	52,286	8.6%	-3.570	-0.142
Continuous Glucose Monitoring*	13,094	17.5%	143,036	23.5%	-6.043	-0.150
Lipid Lowering Medications*	54,261	72.4%	209,669	34.5%	37.914	0.822
Alpha Blockers*	12,564	16.8%	18,049	3.0%	13.791	0.475
Angiotensin II Receptor Blockers (ARBs)*	18,989	25.3%	49,792	8.2%	17.144	0.472
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	28,783	38.4%	142,350	23.4%	14.996	0.329
Beta Blockers*	46,453	62.0%	81,134	13.3%	48.625	1.160
Calcium Channel Blockers*	36,017	48.0%	52,043	8.6%	39.486	0.975
Diuretics*	37,064	49.4%	67,027	11.0%	38.420	0.921
Peripheral Vasodilators*	0	0.0%	*****	*****	NaN	NaN
Renin Inhibitors*	122	0.2%	238	0.0%	0.124	0.039
Other Anti-Hypertensives*	13,709	18.3%	5,383	0.9%	17.400	0.619
Combination Anti-Hypertensives*	5,046	6.7%	24,137	4.0%	2.763	0.123

Table 1ak. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	63.9	72.7	15.4	17.3	48.502	0.918
Mean number of emergency room encounters*	1.7	3.7	0.8	2.0	0.884	0.299
Mean number of inpatient hospital encounters*	1.4	2.5	0.4	1.1	1.026	0.532
Mean number of non-acute institutional encounters*	0.3	0.9	0.0	0.3	0.244	0.365
Mean number of other ambulatory encounters*	29.1	43.5	9.8	25.2	19.289	0.542
Mean number of filled prescriptions*	67.3	48.3	33.7	32.6	33.636	0.816
Mean number of generics dispensed*	16.0	7.4	8.8	5.8	7.282	1.089
Mean number of unique drug classes dispensed*	13.9	6.3	7.4	5.1	6.510	1.134

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1a. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	42,925	57.3%	42,925	7.1%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	59.5	14.5	60.5	14.4	-1.007	-0.070
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	69	0.2%	102	0.2%	-0.077	-0.017
12-18 years	252	0.6%	274	0.6%	-0.051	-0.007
19-24 years	507	1.2%	652	1.5%	-0.338	-0.029
25-44 years	8,609	20.1%	6,952	16.2%	3.860	0.100
45-64 years	14,380	33.5%	14,651	34.1%	-0.631	-0.013
≥ 65 years	19,108	44.5%	20,294	47.3%	-2.763	-0.055
Sex [*]						
Female	21,877	51.0%	22,195	51.7%	-0.741	-0.015
Male	21,048	49.0%	20,730	48.3%	0.741	0.015
Race ^{*,2}						
American Indian or Alaska Native	256	0.6%	266	0.6%	-0.023	-0.003
Asian	452	1.1%	440	1.0%	0.028	0.003
Black or African American	5,428	12.6%	5,396	12.6%	0.075	0.002
Multi-racial	119	0.3%	104	0.2%	0.035	0.007
Native Hawaiian or Other Pacific Islander	80	0.2%	77	0.2%	0.007	0.002
Unknown	7,339	17.1%	7,039	16.4%	0.699	0.019
White	29,251	68.1%	29,603	69.0%	-0.820	-0.018
Hispanic origin						
Yes	1,642	3.8%	1,552	3.6%	0.210	0.011
No	33,960	79.1%	34,232	79.7%	-0.634	-0.016
Unknown	7,323	17.1%	7,141	16.6%	0.424	0.011

Table 1a. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Demographic Characteristics	Number	Percent	Number	Percent		
Year*						
2013	7,116	16.6%	7,083	16.5%	0.077	0.002
2014	4,463	10.4%	4,446	10.4%	0.040	0.001
2015	3,951	9.2%	3,908	9.1%	0.100	0.003
2016	4,247	9.9%	4,245	9.9%	0.005	0.000
2017	4,673	10.9%	4,554	10.6%	0.277	0.009
2018	3,934	9.2%	3,926	9.1%	0.019	0.001
2019	3,333	7.8%	3,406	7.9%	-0.170	-0.006
2020	3,307	7.7%	3,373	7.9%	-0.154	-0.006
2021	3,546	8.3%	3,537	8.2%	0.021	0.001
2022	2,298	5.4%	2,336	5.4%	-0.089	-0.004
2023	1,967	4.6%	2,018	4.7%	-0.119	-0.006
2024	90	0.2%	93	0.2%	-0.007	-0.002
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.6	2.1	4.7	2.3	-0.059	-0.027
Combined comorbidity score ^{*,4}	4.8	2.5	4.8	3.1	-0.007	-0.002
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	6,058	14.1%	6,221	14.5%	-0.380	-0.011
Overweight/Obesity [*]	9,455	22.0%	9,704	22.6%	-0.580	-0.014
Hypertension [*]	38,640	90.0%	39,656	92.4%	-2.367	-0.084
Hyperlipidemia [*]	32,428	75.5%	33,038	77.0%	-1.421	-0.033
Tobacco Smoking [*]	13,016	30.3%	13,335	31.1%	-0.743	-0.016
Alcohol Use [*]	2,327	5.4%	2,510	5.8%	-0.426	-0.018

Table 1a. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	35,508	82.7%	35,503	82.7%	0.012	0.000
Long/Intermediate-Acting Insulin*	30,164	70.3%	30,110	70.1%	0.126	0.003
Combination Insulin*	1,887	4.4%	1,973	4.6%	-0.200	-0.010
Insulin Pump*	4,737	11.0%	4,802	11.2%	-0.151	-0.005
Metformin*	3,143	7.3%	3,467	8.1%	-0.755	-0.028
Continuous Glucose Monitoring*	8,264	19.3%	8,308	19.4%	-0.103	-0.003
Lipid Lowering Medications*	30,531	71.1%	31,249	72.8%	-1.673	-0.037
Alpha Blockers*	4,300	10.0%	3,969	9.2%	0.771	0.026
Angiotensin II Receptor Blockers (ARBs)*	10,107	23.5%	10,307	24.0%	-0.466	-0.011
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	17,713	41.3%	18,319	42.7%	-1.412	-0.029
Beta Blockers*	21,714	50.6%	21,979	51.2%	-0.617	-0.012
Calcium Channel Blockers*	16,023	37.3%	15,748	36.7%	0.641	0.013
Diuretics*	18,826	43.9%	18,855	43.9%	-0.068	-0.001
Peripheral Vasodilators*	0	0.0%	*****	*****	NaN	NaN
Renin Inhibitors*	63	0.1%	57	0.1%	0.014	0.004
Other Anti-Hypertensives*	3,453	8.0%	2,983	6.9%	1.095	0.042
Combination Anti-Hypertensives*	3,544	8.3%	3,689	8.6%	-0.338	-0.012

Table 1a. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	31.7	34.7	30.8	27.1	0.956	0.031
Mean number of emergency room encounters*	1.4	3.5	1.4	2.8	-0.012	-0.004
Mean number of inpatient hospital encounters*	1.0	2.2	1.0	1.8	-0.006	-0.003
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.6	0.005	0.007
Mean number of other ambulatory encounters*	21.1	38.5	21.1	35.9	-0.000	-0.000
Mean number of filled prescriptions*	62.8	47.6	63.8	49.0	-1.021	-0.021
Mean number of generics dispensed*	14.6	7.2	14.8	7.1	-0.192	-0.027
Mean number of unique drug classes dispensed*	12.7	6.2	12.8	6.1	-0.166	-0.027

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1am. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	21,877	100.0%	22,195	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	60.4	14.7	61.4	14.6	-0.940	-0.064
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	42	0.2%	58	0.3%	-0.069	-0.015
12-18 years	123	0.6%	141	0.6%	-0.073	-0.009
19-24 years	275	1.3%	371	1.7%	-0.415	-0.035
25-44 years	4,224	19.3%	3,409	15.4%	3.949	0.104
45-64 years	6,739	30.8%	7,096	32.0%	-1.167	-0.025
≥ 65 years	10,474	47.9%	11,120	50.1%	-2.225	-0.045
Sex [*]						
Female	21,877	100.0%	22,195	100.0%	0.000	NaN
Male	0	0.0%	0	0.0%	NaN	NaN
Race ^{*,2}						
American Indian or Alaska Native	152	0.7%	133	0.6%	0.096	0.012
Asian	213	1.0%	240	1.1%	-0.108	-0.011
Black or African American	2,811	12.8%	3,125	14.1%	-1.231	-0.036
Multi-racial	51	0.2%	39	0.2%	0.057	0.013
Native Hawaiian or Other Pacific Islander	34	0.2%	27	0.1%	0.034	0.009
Unknown	3,425	15.7%	3,354	15.1%	0.544	0.015
White	15,191	69.4%	15,277	68.8%	0.607	0.013
Hispanic origin						
Yes	852	3.9%	844	3.8%	0.092	0.005
No	17,662	80.7%	18,032	81.2%	-0.510	-0.013
Unknown	3,363	15.4%	3,319	15.0%	0.418	0.012

Table 1am. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	3,699	16.9%	3,838	17.3%	-0.384	-0.010
2014	2,266	10.4%	2,277	10.3%	0.099	0.003
2015	1,963	9.0%	2,089	9.4%	-0.439	-0.015
2016	2,153	9.8%	2,191	9.9%	-0.030	-0.001
2017	2,361	10.8%	2,364	10.7%	0.141	0.005
2018	2,019	9.2%	2,016	9.1%	0.146	0.005
2019	1,627	7.4%	1,707	7.7%	-0.254	-0.010
2020	1,649	7.5%	1,737	7.8%	-0.288	-0.011
2021	1,814	8.3%	1,787	8.1%	0.240	0.009
2022	1,223	5.6%	1,154	5.2%	0.391	0.017
2023	1,052	4.8%	991	4.5%	0.344	0.016
2024	51	0.2%	44	0.2%	0.035	0.008
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.6	2.0	4.6	2.3	-0.016	-0.007
Combined comorbidity score ^{*,4}	4.9	2.5	4.9	3.2	-0.043	-0.015
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	3,143	14.4%	3,323	15.0%	-0.605	-0.017
Overweight/Obesity [*]	5,591	25.6%	5,763	26.0%	-0.409	-0.009
Hypertension [*]	19,575	89.5%	20,442	92.1%	-2.624	-0.091
Hyperlipidemia [*]	16,459	75.2%	16,999	76.6%	-1.355	-0.032
Tobacco Smoking [*]	6,198	28.3%	6,255	28.2%	0.149	0.003
Alcohol Use [*]	924	4.2%	928	4.2%	0.042	0.002

Table 1am. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	18,133	82.9%	18,344	82.6%	0.237	0.006
Long/Intermediate-Acting Insulin*	15,235	69.6%	15,447	69.6%	0.043	0.001
Combination Insulin*	986	4.5%	984	4.4%	0.074	0.004
Insulin Pump*	2,572	11.8%	2,572	11.6%	0.168	0.005
Metformin*	1,698	7.8%	1,796	8.1%	-0.330	-0.012
Continuous Glucose Monitoring*	4,388	20.1%	4,363	19.7%	0.400	0.010
Lipid Lowering Medications*	15,404	70.4%	15,912	71.7%	-1.280	-0.028
Alpha Blockers*	1,827	8.4%	1,868	8.4%	-0.065	-0.002
Angiotensin II Receptor Blockers (ARBs)*	5,496	25.1%	5,822	26.2%	-1.109	-0.025
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	8,543	39.1%	8,710	39.2%	-0.193	-0.004
Beta Blockers*	10,850	49.6%	11,330	51.0%	-1.452	-0.029
Calcium Channel Blockers*	7,618	34.8%	8,204	37.0%	-2.141	-0.045
Diuretics*	10,358	47.3%	10,667	48.1%	-0.714	-0.014
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	36	0.2%	35	0.2%	0.007	0.002
Other Anti-Hypertensives*	1,614	7.4%	1,552	7.0%	0.385	0.015
Combination Anti-Hypertensives*	1,808	8.3%	1,896	8.5%	-0.278	-0.010

Table 1am. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	32.5	33.8	32.1	26.8	0.337	0.011
Mean number of emergency room encounters*	1.5	3.7	1.5	2.9	-0.024	-0.007
Mean number of inpatient hospital encounters*	1.0	2.2	1.0	1.8	-0.015	-0.008
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.7	0.005	0.007
Mean number of other ambulatory encounters*	23.0	40.9	22.8	37.5	0.182	0.005
Mean number of filled prescriptions*	67.5	50.5	68.4	50.8	-0.823	-0.016
Mean number of generics dispensed*	15.8	7.6	15.9	7.4	-0.130	-0.017
Mean number of unique drug classes dispensed*	13.7	6.5	13.8	6.3	-0.122	-0.019

*Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1a. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	20,674	94.5%	20,674	93.1%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	61.2	14.6	61.2	14.6	-0.043	-0.003
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	29	0.1%	58	0.3%	-0.140	-0.031
12-18 years	90	0.4%	139	0.7%	-0.237	-0.032
19-24 years	223	1.1%	361	1.7%	-0.668	-0.057
25-44 years	3,750	18.1%	3,244	15.7%	2.448	0.065
45-64 years	6,373	30.8%	6,461	31.3%	-0.426	-0.009
≥ 65 years	10,209	49.4%	10,411	50.4%	-0.977	-0.020
Sex [*]						
Female	20,674	100.0%	20,674	100.0%	0.000	NaN
Male	0	0.0%	0	0.0%	NaN	NaN
Race ^{*,2}						
American Indian or Alaska Native	119	0.6%	117	0.6%	0.010	0.001
Asian	198	1.0%	197	1.0%	0.005	0.000
Black or African American	2,744	13.3%	2,760	13.4%	-0.077	-0.002
Multi-racial	39	0.2%	39	0.2%	0.000	0.000
Native Hawaiian or Other Pacific Islander	30	0.1%	27	0.1%	0.015	0.004
Unknown	3,029	14.7%	3,049	14.7%	-0.097	-0.003
White	14,515	70.2%	14,485	70.1%	0.145	0.003
Hispanic origin						
Yes	774	3.7%	792	3.8%	-0.087	-0.005
No	16,922	81.9%	16,902	81.8%	0.097	0.003
Unknown	2,978	14.4%	2,980	14.4%	-0.010	-0.000

Table 1a. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	3,580	17.3%	3,612	17.5%	-0.155	-0.004
2014	2,171	10.5%	2,176	10.5%	-0.024	-0.001
2015	1,898	9.2%	1,904	9.2%	-0.029	-0.001
2016	2,024	9.8%	2,029	9.8%	-0.024	-0.001
2017	2,211	10.7%	2,202	10.7%	0.044	0.001
2018	1,874	9.1%	1,890	9.1%	-0.077	-0.003
2019	1,550	7.5%	1,540	7.4%	0.048	0.002
2020	1,558	7.5%	1,564	7.6%	-0.029	-0.001
2021	1,677	8.1%	1,659	8.0%	0.087	0.003
2022	1,138	5.5%	1,106	5.3%	0.155	0.007
2023	949	4.6%	948	4.6%	0.005	0.000
2024	44	0.2%	44	0.2%	0.000	0.000
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.6	2.0	4.6	2.3	-0.004	-0.002
Combined comorbidity score ^{*,4}	4.9	2.5	4.9	3.2	0.007	0.003
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	2,968	14.4%	2,986	14.4%	-0.087	-0.002
Overweight/Obesity [*]	5,347	25.9%	5,377	26.0%	-0.145	-0.003
Hypertension [*]	18,952	91.7%	18,937	91.6%	0.073	0.003
Hyperlipidemia [*]	15,819	76.5%	15,815	76.5%	0.019	0.000
Tobacco Smoking [*]	5,866	28.4%	5,857	28.3%	0.044	0.001
Alcohol Use [*]	862	4.2%	856	4.1%	0.029	0.001

Table 1an. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	17,116	82.8%	17,112	82.8%	0.019	0.001
Long/Intermediate-Acting Insulin*	14,403	69.7%	14,435	69.8%	-0.155	-0.003
Combination Insulin*	937	4.5%	932	4.5%	0.024	0.001
Insulin Pump*	2,309	11.2%	2,314	11.2%	-0.024	-0.001
Metformin*	1,644	8.0%	1,635	7.9%	0.044	0.002
Continuous Glucose Monitoring*	4,068	19.7%	4,061	19.6%	0.034	0.001
Lipid Lowering Medications*	14,778	71.5%	14,769	71.4%	0.044	0.001
Alpha Blockers*	1,709	8.3%	1,723	8.3%	-0.068	-0.002
Angiotensin II Recepting Blockers (ARBs)*	5,305	25.7%	5,299	25.6%	0.029	0.001
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	8,133	39.3%	8,119	39.3%	0.068	0.001
Beta Blockers*	10,462	50.6%	10,469	50.6%	-0.034	-0.001
Calcium Channel Blockers*	7,371	35.7%	7,386	35.7%	-0.073	-0.002
Diuretics*	9,921	48.0%	9,899	47.9%	0.106	0.002
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	27	0.1%	28	0.1%	-0.005	-0.001
Other Anti-Hypertensives*	1,464	7.1%	1,466	7.1%	-0.010	-0.000
Combination Anti-Hypertensives*	1,746	8.4%	1,740	8.4%	0.029	0.001

Table 1a. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	32.1	32.3	32.1	26.8	-0.075	-0.003
Mean number of emergency room encounters*	1.4	3.7	1.4	2.8	-0.003	-0.001
Mean number of inpatient hospital encounters*	1.0	2.2	1.0	1.8	0.000	0.000
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.7	0.003	0.004
Mean number of other ambulatory encounters*	22.8	40.1	22.8	37.6	0.067	0.002
Mean number of filled prescriptions*	68.0	50.2	68.1	50.5	-0.100	-0.002
Mean number of generics dispensed*	15.8	7.6	15.8	7.4	-0.005	-0.001
Mean number of unique drug classes dispensed*	13.7	6.4	13.7	6.3	-0.007	-0.001

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1a0. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	21,048	100.0%	20,730	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	58.5	14.3	59.5	14.2	-1.048	-0.074
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	27	0.1%	44	0.2%	-0.084	-0.020
12-18 years	129	0.6%	133	0.6%	-0.029	-0.004
19-24 years	232	1.1%	281	1.4%	-0.253	-0.023
25-44 years	4,385	20.8%	3,543	17.1%	3.742	0.096
45-64 years	7,641	36.3%	7,555	36.4%	-0.142	-0.003
≥ 65 years	8,634	41.0%	9,174	44.3%	-3.234	-0.065
Sex [*]						
Female	0	0.0%	0	0.0%	NaN	NaN
Male	21,048	100.0%	20,730	100.0%	0.000	NaN
Race ^{*,2}						
American Indian or Alaska Native	104	0.5%	133	0.6%	-0.147	-0.020
Asian	239	1.1%	200	1.0%	0.171	0.017
Black or African American	2,617	12.4%	2,271	11.0%	1.478	0.046
Multi-racial	68	0.3%	65	0.3%	0.010	0.002
Native Hawaiian or Other Pacific Islander	46	0.2%	50	0.2%	-0.023	-0.005
Unknown	3,914	18.6%	3,685	17.8%	0.819	0.021
White	14,060	66.8%	14,326	69.1%	-2.308	-0.049
Hispanic origin						
Yes	790	3.8%	708	3.4%	0.338	0.018
No	16,298	77.4%	16,200	78.1%	-0.715	-0.017
Unknown	3,960	18.8%	3,822	18.4%	0.377	0.010

Table 1ao. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	3,417	16.2%	3,245	15.7%	0.581	0.016
2014	2,197	10.4%	2,169	10.5%	-0.025	-0.001
2015	1,988	9.4%	1,819	8.8%	0.670	0.023
2016	2,094	9.9%	2,054	9.9%	0.040	0.001
2017	2,312	11.0%	2,190	10.6%	0.420	0.014
2018	1,915	9.1%	1,910	9.2%	-0.115	-0.004
2019	1,706	8.1%	1,699	8.2%	-0.091	-0.003
2020	1,658	7.9%	1,636	7.9%	-0.015	-0.001
2021	1,732	8.2%	1,750	8.4%	-0.213	-0.008
2022	1,075	5.1%	1,182	5.7%	-0.595	-0.026
2023	915	4.3%	1,027	5.0%	-0.607	-0.029
2024	39	0.2%	49	0.2%	-0.051	-0.011
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.6	2.1	4.8	2.3	-0.107	-0.049
Combined comorbidity score ^{*,4}	4.6	2.4	4.6	3.1	0.035	0.013
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	2,915	13.8%	2,898	14.0%	-0.130	-0.004
Overweight/Obesity [*]	3,864	18.4%	3,941	19.0%	-0.653	-0.017
Hypertension [*]	19,065	90.6%	19,214	92.7%	-2.108	-0.076
Hyperlipidemia [*]	15,969	75.9%	16,039	77.4%	-1.502	-0.035
Tobacco Smoking [*]	6,818	32.4%	7,080	34.2%	-1.761	-0.037
Alcohol Use [*]	1,403	6.7%	1,582	7.6%	-0.966	-0.037

Table 1ao. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	17,375	82.5%	17,159	82.8%	-0.224	-0.006
Long/Intermediate-Acting Insulin*	14,929	70.9%	14,663	70.7%	0.195	0.004
Combination Insulin*	901	4.3%	989	4.8%	-0.490	-0.024
Insulin Pump*	2,165	10.3%	2,230	10.8%	-0.471	-0.015
Metformin*	1,445	6.9%	1,671	8.1%	-1.196	-0.046
Continuous Glucose Monitoring*	3,876	18.4%	3,945	19.0%	-0.615	-0.016
Lipid Lowering Medications*	15,127	71.9%	15,337	74.0%	-2.116	-0.048
Alpha Blockers*	2,473	11.7%	2,101	10.1%	1.614	0.052
Angiotensin II Receptor Blockers (ARBs)*	4,611	21.9%	4,485	21.6%	0.272	0.007
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	9,170	43.6%	9,609	46.4%	-2.786	-0.056
Beta Blockers*	10,864	51.6%	10,649	51.4%	0.245	0.005
Calcium Channel Blockers*	8,405	39.9%	7,544	36.4%	3.541	0.073
Diuretics*	8,468	40.2%	8,188	39.5%	0.734	0.015
Peripheral Vasodilators*	0	0.0%	*****	*****	NaN	NaN
Renin Inhibitors*	27	0.1%	22	0.1%	0.022	0.006
Other Anti-Hypertensives*	1,839	8.7%	1,431	6.9%	1.834	0.068
Combination Anti-Hypertensives*	1,736	8.2%	1,793	8.6%	-0.401	-0.014

Table 1ao. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	31.0	35.6	29.3	27.2	1.643	0.052
Mean number of emergency room encounters*	1.3	3.3	1.3	2.6	0.003	0.001
Mean number of inpatient hospital encounters*	0.9	2.2	0.9	1.7	0.004	0.002
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.6	0.005	0.007
Mean number of other ambulatory encounters*	19.1	35.7	19.2	34.0	-0.135	-0.004
Mean number of filled prescriptions*	57.9	43.8	59.0	46.6	-1.085	-0.024
Mean number of generics dispensed*	13.4	6.6	13.6	6.5	-0.222	-0.034
Mean number of unique drug classes dispensed*	11.6	5.7	11.8	5.6	-0.181	-0.032

* Covariate included in the propensity score logistic regression model.

¹ Covariates in blue show a standardized difference greater than 0.1.

² Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³ Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴ Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1ap. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	19,118	90.8%	19,118	92.2%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	59.4	14.1	59.5	14.3	-0.026	-0.002
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	17	0.1%	44	0.2%	-0.141	-0.035
12-18 years	85	0.4%	133	0.7%	-0.251	-0.033
19-24 years	179	0.9%	276	1.4%	-0.507	-0.047
25-44 years	3,643	19.1%	3,339	17.5%	1.590	0.041
45-64 years	6,894	36.1%	6,747	35.3%	0.769	0.016
≥ 65 years	8,300	43.4%	8,579	44.9%	-1.459	-0.029
Sex [*]						
Female	0	0.0%	0	0.0%	NaN	NaN
Male	19,118	100.0%	19,118	100.0%	0.000	NaN
Race ^{*,2}						
American Indian or Alaska Native	95	0.5%	99	0.5%	-0.021	-0.003
Asian	188	1.0%	191	1.0%	-0.016	-0.002
Black or African American	2,152	11.3%	2,164	11.3%	-0.063	-0.002
Multi-racial	58	0.3%	57	0.3%	0.005	0.001
Native Hawaiian or Other Pacific Islander	40	0.2%	47	0.2%	-0.037	-0.008
Unknown	3,286	17.2%	3,286	17.2%	0.000	0.000
White	13,299	69.6%	13,274	69.4%	0.131	0.003
Hispanic origin						
Yes	656	3.4%	664	3.5%	-0.042	-0.002
No	15,081	78.9%	15,086	78.9%	-0.026	-0.001
Unknown	3,381	17.7%	3,368	17.6%	0.068	0.002

Table 1ap. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	3,115	16.3%	3,082	16.1%	0.173	0.005
2014	2,039	10.7%	2,037	10.7%	0.010	0.000
2015	1,765	9.2%	1,731	9.1%	0.178	0.006
2016	1,906	10.0%	1,910	10.0%	-0.021	-0.001
2017	2,042	10.7%	2,039	10.7%	0.016	0.001
2018	1,738	9.1%	1,727	9.0%	0.058	0.002
2019	1,558	8.1%	1,531	8.0%	0.141	0.005
2020	1,493	7.8%	1,481	7.7%	0.063	0.002
2021	1,575	8.2%	1,595	8.3%	-0.105	-0.004
2022	996	5.2%	1,051	5.5%	-0.288	-0.013
2023	853	4.5%	898	4.7%	-0.235	-0.011
2024	38	0.2%	36	0.2%	0.010	0.002
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.7	2.1	4.7	2.3	-0.002	-0.001
Combined comorbidity score ^{*,4}	4.6	2.4	4.6	3.1	0.010	0.003
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	2,598	13.6%	2,568	13.4%	0.157	0.005
Overweight/Obesity [*]	3,572	18.7%	3,617	18.9%	-0.235	-0.006
Hypertension [*]	17,602	92.1%	17,621	92.2%	-0.099	-0.004
Hyperlipidemia [*]	14,774	77.3%	14,770	77.3%	0.021	0.000
Tobacco Smoking [*]	6,298	32.9%	6,355	33.2%	-0.298	-0.006
Alcohol Use [*]	1,325	6.9%	1,348	7.1%	-0.120	-0.005

Table 1ap. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	15,816	82.7%	15,793	82.6%	0.120	0.003
Long/Intermediate-Acting Insulin*	13,553	70.9%	13,548	70.9%	0.026	0.001
Combination Insulin*	846	4.4%	883	4.6%	-0.194	-0.009
Insulin Pump*	1,901	9.9%	1,911	10.0%	-0.052	-0.002
Metformin*	1,412	7.4%	1,485	7.8%	-0.382	-0.014
Continuous Glucose Monitoring*	3,544	18.5%	3,540	18.5%	0.021	0.001
Lipid Lowering Medications*	14,066	73.6%	14,056	73.5%	0.052	0.001
Alpha Blockers*	2,014	10.5%	2,028	10.6%	-0.073	-0.002
Angiotensin II Recepting Blockers (ARBs)*	4,184	21.9%	4,160	21.8%	0.126	0.003
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	8,608	45.0%	8,655	45.3%	-0.246	-0.005
Beta Blockers*	9,820	51.4%	9,855	51.5%	-0.183	-0.004
Calcium Channel Blockers*	7,248	37.9%	7,181	37.6%	0.350	0.007
Diuretics*	7,687	40.2%	7,675	40.1%	0.063	0.001
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	19	0.1%	21	0.1%	-0.010	-0.003
Other Anti-Hypertensives*	1,353	7.1%	1,406	7.4%	-0.277	-0.011
Combination Anti-Hypertensives*	1,645	8.6%	1,628	8.5%	0.089	0.003

Table 1ap. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	28.2	28.9	29.4	27.6	-1.272	-0.045
Mean number of emergency room encounters*	1.2	3.1	1.2	2.5	-0.011	-0.004
Mean number of inpatient hospital encounters*	0.9	2.1	0.9	1.7	-0.014	-0.007
Mean number of non-acute institutional encounters*	0.2	0.7	0.2	0.6	-0.001	-0.002
Mean number of other ambulatory encounters*	18.6	35.1	18.9	33.5	-0.279	-0.008
Mean number of filled prescriptions*	58.4	44.4	58.6	46.1	-0.169	-0.004
Mean number of generics dispensed*	13.5	6.6	13.5	6.4	-0.039	-0.006
Mean number of unique drug classes dispensed*	11.6	5.6	11.7	5.5	-0.030	-0.005

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1a. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	69	100.0%	102	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	8.4	3.0	8.5	2.7	-0.101	-0.036
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	69	100.0%	102	100.0%	0.000	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	42	60.9%	58	56.9%	4.007	0.081
Male	27	39.1%	44	43.1%	-4.007	-0.081
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	0	0.0%	NaN	NaN
Asian	*****	*****	*****	*****	-3.453	-0.198
Black or African American	*****	*****	*****	*****	3.240	0.102
Multi-racial	0	0.0%	*****	*****	NaN	NaN
Native Hawaiian or Other Pacific Islander	*****	*****	0	0.0%	NaN	NaN
Unknown	20	29.0%	46	45.1%	-16.113	-0.338
White	37	53.6%	40	39.2%	14.408	0.292
Hispanic origin						
Yes	*****	*****	*****	*****	-6.564	-0.178
No	49	71.0%	56	54.9%	16.113	0.338
Unknown	*****	*****	*****	*****	-9.548	-0.237

Table 1a. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	*****	*****	*****	*****	2.387	0.137
2014	*****	*****	*****	*****	0.469	0.043
2015	*****	*****	*****	*****	2.813	0.108
2016	*****	*****	*****	*****	-7.460	-0.240
2017	*****	*****	*****	*****	-7.033	-0.197
2018	*****	*****	*****	*****	-2.643	-0.075
2019	*****	*****	*****	*****	6.138	0.184
2020	15	21.7%	16	15.7%	6.053	0.156
2021	*****	*****	*****	*****	-1.194	-0.033
2022	*****	*****	*****	*****	NaN	NaN
2023	0	0.0%	*****	*****	NaN	NaN
2024	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	2.2	1.7	2.5	2.1	-0.205	-0.107
Combined comorbidity score ^{*,4}	4.2	2.2	4.6	3.3	-0.444	-0.156
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	13	18.8%	36	35.3%	-16.454	-0.377
Overweight/Obesity [*]	*****	*****	*****	*****	0.384	0.015
Hypertension [*]	21	30.4%	37	36.3%	-5.840	-0.124
Hyperlipidemia [*]	*****	*****	*****	*****	8.184	0.348
Tobacco Smoking [*]	0	0.0%	*****	*****	NaN	NaN
Alcohol Use [*]	*****	*****	0	0.0%	NaN	NaN

Table 1a. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	57	82.6%	77	75.5%	7.118	0.176
Long/Intermediate-Acting Insulin*	53	76.8%	84	82.4%	-5.541	-0.138
Combination Insulin*	*****	*****	*****	*****	3.367	0.210
Insulin Pump*	*****	*****	*****	*****	-6.010	-0.188
Metformin*	*****	*****	*****	*****	-0.512	-0.040
Continuous Glucose Monitoring*	14	20.3%	28	27.5%	-7.161	-0.169
Lipid Lowering Medications*	*****	*****	*****	*****	-0.043	-0.003
Alpha Blockers*	*****	*****	*****	*****	-1.577	-0.058
Angiotensin II Receptor Blockers (ARBs)*	*****	*****	0	0.0%	NaN	NaN
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	11	15.9%	14	13.7%	2.217	0.062
Beta Blockers*	*****	*****	*****	*****	3.325	0.145
Calcium Channel Blockers*	16	23.2%	11	10.8%	12.404	0.335
Diuretics*	*****	*****	*****	*****	-2.515	-0.109
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	*****	*****	*****	*****	0.469	0.043
Combination Anti-Hypertensives*	0	0.0%	*****	*****	NaN	NaN

Table 1a. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	35.9	48.7	27.0	35.2	8.971	0.211
Mean number of emergency room encounters*	1.6	3.5	1.4	1.6	0.173	0.063
Mean number of inpatient hospital encounters*	1.3	1.9	1.5	2.1	-0.152	-0.076
Mean number of non-acute institutional encounters*	0.1	0.5	0.0	0.5	0.067	0.135
Mean number of other ambulatory encounters*	78.4	98.3	45.3	78.4	33.058	0.372
Mean number of filled prescriptions*	57.2	52.2	32.7	37.0	24.473	0.541
Mean number of generics dispensed*	13.8	7.8	10.6	8.5	3.126	0.383
Mean number of unique drug classes dispensed*	11.4	6.6	8.8	7.1	2.588	0.379

* Covariate included in the propensity score logistic regression model.

¹ Covariates in blue show a standardized difference greater than 0.1.

² Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³ Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴ Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

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Table 1ar. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	22	31.9%	22	21.6%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	7.8	3.0	8.8	2.4	-1.039	-0.383
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	22	100.0%	22	100.0%	0.000	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	*****	*****	*****	*****	-9.091	-0.190
Male	*****	*****	*****	*****	9.091	0.190
Race ^{*,2}						
American Indian or Alaska Native	0	0.0%	0	0.0%	NaN	NaN
Asian	*****	*****	*****	*****	0.000	0.000
Black or African American	*****	*****	*****	*****	4.545	0.144
Multi-racial	0	0.0%	0	0.0%	NaN	NaN
Native Hawaiian or Other Pacific Islander	0	0.0%	0	0.0%	NaN	NaN
Unknown	*****	*****	*****	*****	0.000	0.000
White	*****	*****	*****	*****	-4.545	-0.091
Hispanic origin						
Yes	*****	*****	*****	*****	-4.545	-0.105
No	*****	*****	*****	*****	0.000	0.000
Unknown	*****	*****	*****	*****	4.545	0.144

Table 1ar. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Demographic Characteristics						
Year*						
2013	0	0.0%	0	0.0%	NaN	NaN
2014	0	0.0%	0	0.0%	NaN	NaN
2015	*****	*****	*****	*****	-4.545	-0.181
2016	*****	*****	*****	*****	-4.545	-0.125
2017	*****	*****	*****	*****	-9.091	-0.237
2018	*****	*****	*****	*****	9.091	0.320
2019	*****	*****	*****	*****	9.091	0.237
2020	*****	*****	*****	*****	-4.545	-0.144
2021	*****	*****	*****	*****	4.545	0.113
2022	0	0.0%	0	0.0%	NaN	NaN
2023	0	0.0%	0	0.0%	NaN	NaN
2024	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	2.4	1.9	2.1	2.3	0.273	0.127
Combined comorbidity score ^{*,4}	4.2	1.9	3.7	3.0	0.500	0.199
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	*****	*****	*****	*****	0.000	0.000
Overweight/Obesity [*]	*****	*****	*****	*****	0.000	0.000
Hypertension [*]	*****	*****	*****	*****	9.091	0.186
Hyperlipidemia [*]	*****	*****	0	0.0%	NaN	NaN
Tobacco Smoking [*]	0	0.0%	0	0.0%	NaN	NaN
Alcohol Use [*]	0	0.0%	0	0.0%	NaN	NaN

Table 1ar. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	17	77.3%	18	81.8%	-4.545	-0.113
Long/Intermediate-Acting Insulin*	18	81.8%	19	86.4%	-4.545	-0.125
Combination Insulin*	0	0.0%	0	0.0%	NaN	NaN
Insulin Pump*	*****	*****	*****	*****	0.000	0.000
Metformin*	0	0.0%	0	0.0%	NaN	NaN
Continuous Glucose Monitoring*	*****	*****	*****	*****	9.091	0.218
Lipid Lowering Medications*	*****	*****	*****	*****	0.000	0.000
Alpha Blockers*	*****	*****	*****	*****	4.545	0.181
Angiotensin II Receptor Blockers (ARBs)*	0	0.0%	0	0.0%	NaN	NaN
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	*****	*****	*****	*****	-4.545	-0.113
Beta Blockers*	*****	*****	*****	*****	4.545	0.181
Calcium Channel Blockers*	*****	*****	*****	*****	9.091	0.218
Diuretics*	*****	*****	*****	*****	0.000	0.000
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	*****	*****	*****	*****	0.000	0.000
Combination Anti-Hypertensives*	0	0.0%	0	0.0%	NaN	NaN

Table 1ar. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters [*]	37.2	69.7	29.6	32.9	7.591	0.139
Mean number of emergency room encounters [*]	1.3	1.7	1.6	1.8	-0.273	-0.155
Mean number of inpatient hospital encounters [*]	1.6	1.8	1.4	1.8	0.273	0.149
Mean number of non-acute institutional encounters [*]	0.0	0.2	0.0	NaN	NaN	NaN
Mean number of other ambulatory encounters [*]	72.2	84.5	54.7	85.8	17.455	0.205
Mean number of filled prescriptions [*]	44.3	30.0	46.7	53.9	-2.409	-0.055
Mean number of generics dispensed [*]	12.8	7.1	12.4	9.4	0.364	0.043
Mean number of unique drug classes dispensed [*]	10.5	6.4	10.4	7.9	0.136	0.019

^{*} Covariate included in the propensity score logistic regression model.

¹ Covariates in blue show a standardized difference greater than 0.1.

² Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³ Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴ Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1as. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	252	100.0%	274	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	16.2	1.9	16.1	1.9	0.099	0.052
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	252	100.0%	274	100.0%	0.000	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	123	48.8%	141	51.5%	-2.650	-0.053
Male	129	51.2%	133	48.5%	2.650	0.053
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	*****	*****	-1.332	-0.090
Asian	*****	*****	*****	*****	0.921	0.067
Black or African American	36	14.3%	52	19.0%	-4.692	-0.126
Multi-racial	0	0.0%	*****	*****	NaN	NaN
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.032	0.005
Unknown	121	48.0%	107	39.1%	8.965	0.182
White	84	33.3%	100	36.5%	-3.163	-0.066
Hispanic origin						
Yes	49	19.4%	48	17.5%	1.926	0.050
No	127	50.4%	162	59.1%	-8.727	-0.176
Unknown	76	30.2%	64	23.4%	6.801	0.154

Table 1as. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	*****	*****	*****	*****	0.715	0.036
2014	*****	*****	*****	*****	0.159	0.012
2015	19	7.5%	16	5.8%	1.700	0.068
2016	29	11.5%	31	11.3%	0.194	0.006
2017	37	14.7%	52	19.0%	-4.296	-0.115
2018	36	14.3%	46	16.8%	-2.503	-0.069
2019	34	13.5%	32	11.7%	1.813	0.055
2020	41	16.3%	35	12.8%	3.496	0.099
2021	28	11.1%	35	12.8%	-1.663	-0.051
2022	*****	*****	*****	*****	0.127	0.010
2023	*****	*****	*****	*****	-0.539	-0.034
2024	*****	*****	0	0.0%	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	2.7	1.7	2.4	2.1	0.202	0.108
Combined comorbidity score ^{*,4}	4.0	2.0	4.2	2.8	-0.139	-0.057
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	69	27.4%	95	34.7%	-7.291	-0.158
Overweight/Obesity [*]	43	17.1%	25	9.1%	7.939	0.237
Hypertension [*]	116	46.0%	123	44.9%	1.141	0.023
Hyperlipidemia [*]	30	11.9%	35	12.8%	-0.869	-0.026
Tobacco Smoking [*]	*****	*****	*****	*****	1.778	0.103
Alcohol Use [*]	*****	*****	*****	*****	0.492	0.043

Table 1as. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	210	83.3%	235	85.8%	-2.433	-0.067
Long/Intermediate-Acting Insulin*	197	78.2%	212	77.4%	0.802	0.019
Combination Insulin*	*****	*****	*****	*****	-1.602	-0.086
Insulin Pump*	46	18.3%	57	20.8%	-2.549	-0.064
Metformin*	15	6.0%	11	4.0%	1.938	0.089
Continuous Glucose Monitoring*	48	19.0%	67	24.5%	-5.405	-0.131
Lipid Lowering Medications*	28	11.1%	26	9.5%	1.622	0.053
Alpha Blockers*	18	7.1%	30	10.9%	-3.806	-0.133
Angiotensin II Receptor Blockers (ARBs)*	21	8.3%	12	4.4%	3.954	0.163
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	80	31.7%	60	21.9%	9.848	0.224
Beta Blockers*	28	11.1%	27	9.9%	1.257	0.041
Calcium Channel Blockers*	64	25.4%	52	19.0%	6.419	0.155
Diuretics*	18	7.1%	29	10.6%	-3.441	-0.121
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	*****	*****	*****	*****	0.857	0.080
Combination Anti-Hypertensives*	*****	*****	*****	*****	1.222	0.125

Table 1as. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Health Service Utilization Intensity Metrics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	24.8	23.9	26.4	34.6	-1.653	-0.056
Mean number of emergency room encounters*	1.2	1.7	1.5	2.0	-0.242	-0.131
Mean number of inpatient hospital encounters*	1.2	2.1	1.3	1.9	-0.094	-0.048
Mean number of non-acute institutional encounters*	0.0	0.3	0.0	0.2	0.004	0.014
Mean number of other ambulatory encounters*	36.9	63.2	32.0	57.1	4.868	0.081
Mean number of filled prescriptions*	49.3	46.5	39.1	45.3	10.141	0.221
Mean number of generics dispensed*	12.1	8.1	10.3	8.1	1.729	0.214
Mean number of unique drug classes dispensed*	10.1	6.9	8.7	7.1	1.425	0.204

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Table 1a. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	118	46.8%	118	43.1%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	16.0	2.0	16.1	2.0	-0.019	-0.010
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	118	100.0%	118	100.0%	0.000	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	56	47.5%	59	50.0%	-2.542	-0.051
Male	62	52.5%	59	50.0%	2.542	0.051
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	*****	*****	-0.847	-0.050
Asian	*****	*****	*****	*****	0.000	0.000
Black or African American	*****	*****	*****	*****	0.847	0.021
Multi-racial	0	0.0%	0	0.0%	NaN	NaN
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.000	0.000
Unknown	41	34.7%	43	36.4%	-1.695	-0.035
White	46	39.0%	44	37.3%	1.695	0.035
Hispanic origin						
Yes	28	23.7%	28	23.7%	0.000	0.000
No	77	65.3%	75	63.6%	1.695	0.035
Unknown	13	11.0%	15	12.7%	-1.695	-0.052

Table 1at. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Demographic Characteristics						
Year*						
2013	0	0.0%	0	0.0%	NaN	NaN
2014	0	0.0%	0	0.0%	NaN	NaN
2015	*****	*****	*****	*****	-0.847	-0.033
2016	*****	*****	*****	*****	0.847	0.029
2017	21	17.8%	20	16.9%	0.847	0.022
2018	20	16.9%	19	16.1%	0.847	0.023
2019	17	14.4%	22	18.6%	-4.237	-0.114
2020	23	19.5%	22	18.6%	0.847	0.022
2021	17	14.4%	15	12.7%	1.695	0.050
2022	0	0.0%	0	0.0%	NaN	NaN
2023	0	0.0%	0	0.0%	NaN	NaN
2024	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics						
	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	2.6	1.6	2.6	2.1	0.008	0.005
Combined comorbidity score ^{*,4}	4.3	2.2	4.1	2.9	0.178	0.069
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	36	30.5%	35	29.7%	0.847	0.018
Overweight/Obesity [*]	16	13.6%	17	14.4%	-0.847	-0.024
Hypertension [*]	51	43.2%	54	45.8%	-2.542	-0.051
Hyperlipidemia [*]	12	10.2%	14	11.9%	-1.695	-0.054
Tobacco Smoking [*]	*****	*****	*****	*****	-1.695	-0.108
Alcohol Use [*]	*****	*****	*****	*****	0.000	0.000

Table 1at. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	101	85.6%	101	85.6%	0.000	0.000
Long/Intermediate-Acting Insulin*	97	82.2%	97	82.2%	0.000	0.000
Combination Insulin*	*****	*****	*****	*****	0.847	0.044
Insulin Pump*	21	17.8%	17	14.4%	3.390	0.092
Metformin*	*****	*****	*****	*****	0.000	0.000
Continuous Glucose Monitoring*	22	18.6%	22	18.6%	0.000	0.000
Lipid Lowering Medications*	13	11.0%	11	9.3%	1.695	0.056
Alpha Blockers*	13	11.0%	13	11.0%	0.000	0.000
Angiotensin II Receptor Blockers (ARBs)*	*****	*****	*****	*****	2.542	0.112
Angiotensin-Converting Enzyme Inhibitors (ACEis)*	28	23.7%	32	27.1%	-3.390	-0.078
Beta Blockers*	*****	*****	*****	*****	1.695	0.058
Calcium Channel Blockers*	28	23.7%	25	21.2%	2.542	0.061
Diuretics*	*****	*****	*****	*****	0.000	0.000
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	0	0.0%	0	0.0%	NaN	NaN
Combination Anti-Hypertensives*	*****	*****	*****	*****	0.847	0.076

Table 1at. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Health Service Utilization Intensity Metrics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	27.6	26.2	25.7	29.5	1.873	0.067
Mean number of emergency room encounters*	1.2	1.7	1.3	1.6	-0.102	-0.062
Mean number of inpatient hospital encounters*	1.5	2.4	1.5	1.9	-0.008	-0.004
Mean number of non-acute institutional encounters*	0.0	0.1	0.0	0.1	0.008	0.075
Mean number of other ambulatory encounters*	50.7	75.9	40.3	65.8	10.407	0.147
Mean number of filled prescriptions*	54.6	57.3	49.6	57.7	5.008	0.087
Mean number of generics dispensed*	12.6	9.2	12.0	9.6	0.559	0.060
Mean number of unique drug classes dispensed*	10.5	7.7	10.0	8.3	0.458	0.057

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

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Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1au. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Patient Characteristics ¹	Number	Percent	Number	Percent		
Unique patients	507	100.0%	652	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	22.4	1.7	22.6	1.7	-0.290	-0.171
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	507	100.0%	652	100.0%	0.000	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	275	54.2%	371	56.9%	-2.661	-0.054
Male	232	45.8%	281	43.1%	2.661	0.054
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	*****	*****	0.198	0.016
Asian	*****	*****	*****	*****	0.548	0.045
Black or African American	104	20.5%	169	25.9%	-5.407	-0.128
Multi-racial	*****	*****	*****	*****	-0.416	-0.066
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.329	0.042
Unknown	199	39.3%	202	31.0%	8.269	0.174
White	182	35.9%	257	39.4%	-3.520	-0.073
Hispanic origin						
Yes	62	12.2%	69	10.6%	1.646	0.052
No	303	59.8%	437	67.0%	-7.261	-0.151
Unknown	142	28.0%	146	22.4%	5.615	0.130

Table 1au. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	36	7.1%	48	7.4%	-0.261	-0.010
2014	21	4.1%	22	3.4%	0.768	0.040
2015	47	9.3%	40	6.1%	3.135	0.118
2016	57	11.2%	77	11.8%	-0.567	-0.018
2017	91	17.9%	121	18.6%	-0.610	-0.016
2018	75	14.8%	88	13.5%	1.296	0.037
2019	53	10.5%	77	11.8%	-1.356	-0.043
2020	46	9.1%	53	8.1%	0.944	0.034
2021	55	10.8%	79	12.1%	-1.268	-0.040
2022	15	3.0%	20	3.1%	-0.109	-0.006
2023	*****	*****	*****	*****	-1.665	-0.098
2024	0	0.0%	*****	*****	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	3.7	1.9	3.9	2.4	-0.135	-0.061
Combined comorbidity score ^{*,4}	4.8	2.5	4.9	2.9	-0.036	-0.013
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	240	47.3%	324	49.7%	-2.356	-0.047
Overweight/Obesity [*]	67	13.2%	99	15.2%	-1.969	-0.056
Hypertension [*]	293	57.8%	402	61.7%	-3.866	-0.079
Hyperlipidemia [*]	155	30.6%	183	28.1%	2.505	0.055
Tobacco Smoking [*]	132	26.0%	166	25.5%	0.575	0.013
Alcohol Use [*]	32	6.3%	33	5.1%	1.250	0.054

Table 1au. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	431	85.0%	551	84.5%	0.501	0.014
Long/Intermediate-Acting Insulin*	387	76.3%	495	75.9%	0.411	0.010
Combination Insulin*	21	4.1%	37	5.7%	-1.533	-0.071
Insulin Pump*	93	18.3%	117	17.9%	0.398	0.010
Metformin*	23	4.5%	21	3.2%	1.316	0.068
Continuous Glucose Monitoring*	91	17.9%	110	16.9%	1.078	0.028
Lipid Lowering Medications*	108	21.3%	133	20.4%	0.903	0.022
Alpha Blockers*	41	8.1%	47	7.2%	0.878	0.033
Angiotensin II Receptor Blockers (ARBs)*	50	9.9%	43	6.6%	3.267	0.119
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	179	35.3%	206	31.6%	3.711	0.079
Beta Blockers*	112	22.1%	141	21.6%	0.465	0.011
Calcium Channel Blockers*	122	24.1%	117	17.9%	6.118	0.151
Diuretics*	83	16.4%	93	14.3%	2.107	0.059
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	23	4.5%	29	4.4%	0.089	0.004
Combination Anti-Hypertensives*	14	2.8%	13	2.0%	0.767	0.050

Table 1au. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Health Service Utilization Intensity Metrics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	24.7	27.1	27.2	34.2	-2.494	-0.081
Mean number of emergency room encounters*	3.1	5.5	3.0	4.3	0.073	0.015
Mean number of inpatient hospital encounters*	2.8	5.0	2.8	4.1	-0.032	-0.007
Mean number of non-acute institutional encounters*	0.1	0.6	0.1	0.5	0.009	0.016
Mean number of other ambulatory encounters*	33.2	56.0	31.8	51.4	1.444	0.027
Mean number of filled prescriptions*	42.8	36.2	38.4	36.2	4.392	0.121
Mean number of generics dispensed*	13.1	8.4	12.4	8.3	0.688	0.082
Mean number of unique drug classes dispensed*	10.9	7.0	10.4	7.1	0.487	0.069

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. Am J Manag Care. 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. Med Care. 2017;55(12):1046-1051.

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Table 1av. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	339	66.9%	339	52.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	22.4	1.7	22.5	1.7	-0.037	-0.022
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	339	100.0%	339	100.0%	0.000	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	191	56.3%	195	57.5%	-1.180	-0.024
Male	148	43.7%	144	42.5%	1.180	0.024
Race ^{*,2}						
American Indian or Alaska Native	*****	*****	*****	*****	0.000	0.000
Asian	*****	*****	*****	*****	0.590	0.041
Black or African American	90	26.5%	88	26.0%	0.590	0.013
Multi-racial	*****	*****	*****	*****	0.000	0.000
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.000	0.000
Unknown	97	28.6%	101	29.8%	-1.180	-0.026
White	136	40.1%	136	40.1%	0.000	0.000
Hispanic origin						
Yes	47	13.9%	47	13.9%	0.000	0.000
No	243	71.7%	239	70.5%	1.180	0.026
Unknown	49	14.5%	53	15.6%	-1.180	-0.033

Table 1av. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	15	4.4%	17	5.0%	-0.590	-0.028
2014	*****	*****	*****	*****	0.885	0.060
2015	26	7.7%	27	8.0%	-0.295	-0.011
2016	39	11.5%	44	13.0%	-1.475	-0.045
2017	74	21.8%	72	21.2%	0.590	0.014
2018	55	16.2%	54	15.9%	0.295	0.008
2019	38	11.2%	37	10.9%	0.295	0.009
2020	30	8.8%	33	9.7%	-0.885	-0.030
2021	40	11.8%	39	11.5%	0.295	0.009
2022	*****	*****	*****	*****	0.295	0.023
2023	*****	*****	*****	*****	0.590	0.045
2024	0	0.0%	0	0.0%	NaN	NaN
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	3.9	1.9	4.0	2.3	-0.080	-0.037
Combined comorbidity score ^{*,4}	4.9	2.5	5.0	2.8	-0.094	-0.036
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	176	51.9%	184	54.3%	-2.360	-0.047
Overweight/Obesity [*]	43	12.7%	45	13.3%	-0.590	-0.018
Hypertension [*]	199	58.7%	212	62.5%	-3.835	-0.079
Hyperlipidemia [*]	89	26.3%	97	28.6%	-2.360	-0.053
Tobacco Smoking [*]	96	28.3%	99	29.2%	-0.885	-0.020
Alcohol Use [*]	17	5.0%	20	5.9%	-0.885	-0.039

Table 1av. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	288	85.0%	293	86.4%	-1.475	-0.042
Long/Intermediate-Acting Insulin*	267	78.8%	267	78.8%	0.000	0.000
Combination Insulin*	18	5.3%	18	5.3%	0.000	0.000
Insulin Pump*	52	15.3%	53	15.6%	-0.295	-0.008
Metformin*	12	3.5%	14	4.1%	-0.590	-0.031
Continuous Glucose Monitoring*	46	13.6%	49	14.5%	-0.885	-0.025
Lipid Lowering Medications*	68	20.1%	73	21.5%	-1.475	-0.036
Alpha Blockers*	26	7.7%	27	8.0%	-0.295	-0.011
Angiotensin II Receptor Blockers (ARBs)*	25	7.4%	28	8.3%	-0.885	-0.033
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	114	33.6%	125	36.9%	-3.245	-0.068
Beta Blockers*	73	21.5%	78	23.0%	-1.475	-0.035
Calcium Channel Blockers*	76	22.4%	81	23.9%	-1.475	-0.035
Diuretics*	51	15.0%	54	15.9%	-0.885	-0.024
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	0	0.0%	0	0.0%	NaN	NaN
Other Anti-Hypertensives*	16	4.7%	12	3.5%	1.180	0.059
Combination Anti-Hypertensives*	*****	*****	*****	*****	0.000	0.000

Table 1av. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	24.4	25.8	25.1	26.9	-0.717	-0.027
Mean number of emergency room encounters*	3.0	4.9	2.9	3.8	0.127	0.029
Mean number of inpatient hospital encounters*	3.0	4.8	3.0	4.1	-0.080	-0.018
Mean number of non-acute institutional encounters*	0.1	0.4	0.1	0.7	-0.029	-0.053
Mean number of other ambulatory encounters*	34.4	52.7	38.3	58.6	-3.985	-0.071
Mean number of filled prescriptions*	42.1	34.1	42.1	40.2	0.006	0.000
Mean number of generics dispensed*	13.1	7.9	13.0	8.4	0.068	0.008
Mean number of unique drug classes dispensed*	10.9	6.7	10.9	7.2	-0.035	-0.005

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Table 1aw. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	8,609	100.0%	6,952	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	36.7	5.2	36.4	5.6	0.247	0.046
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	8,609	100.0%	6,952	100.0%	0.000	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	4,224	49.1%	3,409	49.0%	0.029	0.001
Male	4,385	50.9%	3,543	51.0%	-0.029	-0.001
Race ^{*,2}						
American Indian or Alaska Native	87	1.0%	83	1.2%	-0.183	-0.018
Asian	108	1.3%	93	1.3%	-0.083	-0.007
Black or African American	1,760	20.4%	1,359	19.5%	0.895	0.022
Multi-racial	45	0.5%	25	0.4%	0.163	0.025
Native Hawaiian or Other Pacific Islander	16	0.2%	22	0.3%	-0.131	-0.026
Unknown	2,391	27.8%	1,782	25.6%	2.140	0.048
White	4,202	48.8%	3,588	51.6%	-2.802	-0.056
Hispanic origin						
Yes	769	8.9%	575	8.3%	0.662	0.024
No	5,976	69.4%	5,017	72.2%	-2.751	-0.061
Unknown	1,864	21.7%	1,360	19.6%	2.089	0.052

Table 1aw. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Demographic Characteristics						
Year*						
2013	1,199	13.9%	953	13.7%	0.219	0.006
2014	605	7.0%	469	6.7%	0.281	0.011
2015	723	8.4%	486	7.0%	1.407	0.053
2016	887	10.3%	701	10.1%	0.220	0.007
2017	1,269	14.7%	1,021	14.7%	0.054	0.002
2018	977	11.3%	811	11.7%	-0.317	-0.010
2019	782	9.1%	653	9.4%	-0.309	-0.011
2020	744	8.6%	679	9.8%	-1.125	-0.039
2021	843	9.8%	671	9.7%	0.140	0.005
2022	289	3.4%	252	3.6%	-0.268	-0.015
2023	276	3.2%	241	3.5%	-0.261	-0.015
2024	15	0.2%	15	0.2%	-0.042	-0.009
Health Characteristics						
	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.7	2.1	4.6	2.5	0.033	0.014
Combined comorbidity score ^{*,4}	4.7	2.4	4.4	3.0	0.305	0.114
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	2,566	29.8%	2,156	31.0%	-1.207	-0.026
Overweight/Obesity [*]	1,645	19.1%	1,516	21.8%	-2.699	-0.067
Hypertension [*]	7,214	83.8%	5,799	83.4%	0.381	0.010
Hyperlipidemia [*]	4,697	54.6%	3,718	53.5%	1.078	0.022
Tobacco Smoking [*]	3,335	38.7%	2,777	39.9%	-1.207	-0.025
Alcohol Use [*]	702	8.2%	625	9.0%	-0.836	-0.030

Table 1aw. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	7,238	84.1%	5,968	85.8%	-1.771	-0.050
Long/Intermediate-Acting Insulin*	6,313	73.3%	5,221	75.1%	-1.770	-0.040
Combination Insulin*	341	4.0%	330	4.7%	-0.786	-0.039
Insulin Pump*	1,405	16.3%	1,050	15.1%	1.217	0.033
Metformin*	326	3.8%	319	4.6%	-0.802	-0.040
Continuous Glucose Monitoring*	1,656	19.2%	1,272	18.3%	0.939	0.024
Lipid Lowering Medications*	4,253	49.4%	3,437	49.4%	-0.037	-0.001
Alpha Blockers*	1,026	11.9%	625	9.0%	2.928	0.096
Angiotensin II Receptor Blockers (ARBs)*	1,622	18.8%	1,070	15.4%	3.449	0.092
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	3,764	43.7%	3,141	45.2%	-1.460	-0.029
Beta Blockers*	3,780	43.9%	2,427	34.9%	8.997	0.185
Calcium Channel Blockers*	3,307	38.4%	1,974	28.4%	10.019	0.214
Diuretics*	2,991	34.7%	2,059	29.6%	5.125	0.110
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	-0.023	-0.011
Other Anti-Hypertensives*	1,020	11.8%	415	6.0%	5.879	0.207
Combination Anti-Hypertensives*	477	5.5%	409	5.9%	-0.342	-0.015

Table 1aw. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	38.0	43.5	31.7	35.2	6.322	0.160
Mean number of emergency room encounters*	2.9	5.8	2.8	4.6	0.101	0.019
Mean number of inpatient hospital encounters*	1.9	3.5	1.8	2.7	0.088	0.028
Mean number of non-acute institutional encounters*	0.1	0.7	0.1	0.5	0.007	0.011
Mean number of other ambulatory encounters*	27.0	44.1	24.5	39.3	2.564	0.061
Mean number of filled prescriptions*	57.6	43.0	55.8	43.0	1.872	0.044
Mean number of generics dispensed*	15.4	8.2	15.0	8.1	0.479	0.059
Mean number of unique drug classes dispensed*	13.1	6.9	12.6	6.8	0.494	0.072

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

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Table 1ax. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	6,151	71.4%	6,151	88.5%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	36.6	5.2	36.5	5.5	0.009	0.002
Age	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	6,151	100.0%	6,151	100.0%	0.000	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	3,078	50.0%	3,054	49.7%	0.390	0.008
Male	3,073	50.0%	3,097	50.3%	-0.390	-0.008
Race ^{*,2}						
American Indian or Alaska Native	69	1.1%	67	1.1%	0.033	0.003
Asian	76	1.2%	75	1.2%	0.016	0.001
Black or African American	1,228	20.0%	1,222	19.9%	0.098	0.002
Multi-racial	24	0.4%	23	0.4%	0.016	0.003
Native Hawaiian or Other Pacific Islander	12	0.2%	18	0.3%	-0.098	-0.020
Unknown	1,642	26.7%	1,617	26.3%	0.406	0.009
White	3,100	50.4%	3,129	50.9%	-0.471	-0.009
Hispanic origin						
Yes	546	8.9%	533	8.7%	0.211	0.007
No	4,372	71.1%	4,399	71.5%	-0.439	-0.010
Unknown	1,233	20.0%	1,219	19.8%	0.228	0.006

Table 1ax. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Demographic Characteristics						
Year*						
2013	841	13.7%	828	13.5%	0.211	0.006
2014	403	6.6%	400	6.5%	0.049	0.002
2015	434	7.1%	448	7.3%	-0.228	-0.009
2016	628	10.2%	634	10.3%	-0.098	-0.003
2017	945	15.4%	935	15.2%	0.163	0.005
2018	721	11.7%	734	11.9%	-0.211	-0.007
2019	579	9.4%	571	9.3%	0.130	0.004
2020	572	9.3%	581	9.4%	-0.146	-0.005
2021	619	10.1%	605	9.8%	0.228	0.008
2022	202	3.3%	211	3.4%	-0.146	-0.008
2023	193	3.1%	193	3.1%	0.000	0.000
2024	14	0.2%	11	0.2%	0.049	0.011
Health Characteristics						
	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.6	2.1	4.7	2.5	-0.023	-0.010
Combined comorbidity score ^{*,4}	4.6	2.3	4.6	3.0	0.010	0.004
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,881	30.6%	1,900	30.9%	-0.309	-0.007
Overweight/Obesity [*]	1,239	20.1%	1,246	20.3%	-0.114	-0.003
Hypertension [*]	5,143	83.6%	5,160	83.9%	-0.276	-0.007
Hyperlipidemia [*]	3,282	53.4%	3,303	53.7%	-0.341	-0.007
Tobacco Smoking [*]	2,454	39.9%	2,443	39.7%	0.179	0.004
Alcohol Use [*]	534	8.7%	546	8.9%	-0.195	-0.007

Table 1ax. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	5,237	85.1%	5,243	85.2%	-0.098	-0.003
Long/Intermediate-Acting Insulin*	4,561	74.2%	4,559	74.1%	0.033	0.001
Combination Insulin*	261	4.2%	266	4.3%	-0.081	-0.004
Insulin Pump*	947	15.4%	969	15.8%	-0.358	-0.010
Metformin*	269	4.4%	264	4.3%	0.081	0.004
Continuous Glucose Monitoring*	1,138	18.5%	1,135	18.5%	0.049	0.001
Lipid Lowering Medications*	3,042	49.5%	3,067	49.9%	-0.406	-0.008
Alpha Blockers*	555	9.0%	573	9.3%	-0.293	-0.010
Angiotensin II Receptor Blockers (ARBs)*	971	15.8%	1,014	16.5%	-0.699	-0.019
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	2,802	45.6%	2,789	45.3%	0.211	0.004
Beta Blockers*	2,291	37.2%	2,296	37.3%	-0.081	-0.002
Calcium Channel Blockers*	1,871	30.4%	1,896	30.8%	-0.406	-0.009
Diuretics*	1,941	31.6%	1,920	31.2%	0.341	0.007
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	*****	*****	*****	*****	0.000	0.000
Other Anti-Hypertensives*	398	6.5%	412	6.7%	-0.228	-0.009
Combination Anti-Hypertensives*	364	5.9%	363	5.9%	0.016	0.001

Table 1ax. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	31.9	34.2	32.5	36.2	-0.621	-0.018
Mean number of emergency room encounters*	2.8	5.5	2.8	4.4	-0.008	-0.002
Mean number of inpatient hospital encounters*	1.8	3.2	1.9	2.7	-0.035	-0.012
Mean number of non-acute institutional encounters*	0.1	0.6	0.1	0.5	-0.005	-0.009
Mean number of other ambulatory encounters*	24.9	40.1	25.4	40.6	-0.535	-0.013
Mean number of filled prescriptions*	56.4	42.9	56.6	43.4	-0.215	-0.005
Mean number of generics dispensed*	15.2	8.1	15.2	8.2	-0.032	-0.004
Mean number of unique drug classes dispensed*	12.8	6.8	12.8	6.9	-0.023	-0.003

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

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Table 1ay. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	14,380	100.0%	14,651	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	55.4	5.6	55.9	5.5	-0.470	-0.084
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	14,380	100.0%	14,651	100.0%	0.000	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	6,739	46.9%	7,096	48.4%	-1.570	-0.031
Male	7,641	53.1%	7,555	51.6%	1.570	0.031
Race ^{*,2}						
American Indian or Alaska Native	89	0.6%	106	0.7%	-0.105	-0.013
Asian	123	0.9%	112	0.8%	0.091	0.010
Black or African American	1,841	12.8%	1,942	13.3%	-0.453	-0.013
Multi-racial	59	0.4%	61	0.4%	-0.006	-0.001
Native Hawaiian or Other Pacific Islander	29	0.2%	25	0.2%	0.031	0.007
Unknown	3,199	22.2%	3,299	22.5%	-0.271	-0.007
White	9,040	62.9%	9,106	62.2%	0.712	0.015
Hispanic origin						
Yes	523	3.6%	533	3.6%	-0.001	-0.000
No	10,492	73.0%	10,668	72.8%	0.148	0.003
Unknown	3,365	23.4%	3,450	23.5%	-0.147	-0.003

Table 1ay. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	2,533	17.6%	2,359	16.1%	1.513	0.040
2014	1,460	10.2%	1,371	9.4%	0.795	0.027
2015	1,262	8.8%	1,298	8.9%	-0.083	-0.003
2016	1,518	10.6%	1,501	10.2%	0.311	0.010
2017	1,674	11.6%	1,652	11.3%	0.365	0.011
2018	1,372	9.5%	1,441	9.8%	-0.294	-0.010
2019	1,138	7.9%	1,269	8.7%	-0.748	-0.027
2020	1,091	7.6%	1,243	8.5%	-0.897	-0.033
2021	1,123	7.8%	1,222	8.3%	-0.531	-0.020
2022	634	4.4%	684	4.7%	-0.260	-0.012
2023	541	3.8%	575	3.9%	-0.162	-0.008
2024	34	0.2%	36	0.2%	-0.009	-0.002
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.7	2.1	4.7	2.4	-0.054	-0.024
Combined comorbidity score ^{*,4}	4.5	2.3	4.5	3.0	0.005	0.002
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	2,051	14.3%	2,246	15.3%	-1.067	-0.030
Overweight/Obesity [*]	3,258	22.7%	3,630	24.8%	-2.120	-0.050
Hypertension [*]	12,963	90.1%	13,689	93.4%	-3.288	-0.120
Hyperlipidemia [*]	10,964	76.2%	11,419	77.9%	-1.695	-0.040
Tobacco Smoking [*]	4,769	33.2%	5,249	35.8%	-2.663	-0.056
Alcohol Use [*]	978	6.8%	1,153	7.9%	-1.069	-0.041

Table 1ay. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	12,153	84.5%	12,414	84.7%	-0.218	-0.006
Long/Intermediate-Acting Insulin*	9,713	67.5%	10,053	68.6%	-1.071	-0.023
Combination Insulin*	571	4.0%	669	4.6%	-0.595	-0.029
Insulin Pump*	2,356	16.4%	2,552	17.4%	-1.035	-0.028
Metformin*	936	6.5%	1,302	8.9%	-2.378	-0.089
Continuous Glucose Monitoring*	2,931	20.4%	3,025	20.6%	-0.265	-0.007
Lipid Lowering Medications*	10,768	74.9%	11,267	76.9%	-2.021	-0.047
Alpha Blockers*	1,484	10.3%	1,314	9.0%	1.351	0.046
Angiotensin II Receptor Blockers (ARBs)*	3,253	22.6%	3,373	23.0%	-0.401	-0.010
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	6,145	42.7%	6,860	46.8%	-4.090	-0.082
Beta Blockers*	7,329	51.0%	7,585	51.8%	-0.805	-0.016
Calcium Channel Blockers*	5,211	36.2%	5,032	34.3%	1.892	0.040
Diuretics*	6,067	42.2%	6,333	43.2%	-1.035	-0.021
Peripheral Vasodilators*	0	0.0%	*****	*****	NaN	NaN
Renin Inhibitors*	23	0.2%	17	0.1%	0.044	0.012
Other Anti-Hypertensives*	1,117	7.8%	1,056	7.2%	0.560	0.021
Combination Anti-Hypertensives*	1,075	7.5%	1,274	8.7%	-1.220	-0.045

Table 1ay. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	33.4	38.0	30.4	26.8	2.917	0.089
Mean number of emergency room encounters*	1.3	3.2	1.5	2.7	-0.139	-0.047
Mean number of inpatient hospital encounters*	0.9	1.9	1.0	1.7	-0.059	-0.033
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.6	0.013	0.018
Mean number of other ambulatory encounters*	20.4	39.5	21.7	38.8	-1.235	-0.032
Mean number of filled prescriptions*	68.1	47.6	71.0	50.4	-2.947	-0.060
Mean number of generics dispensed*	15.2	7.5	15.8	7.5	-0.594	-0.080
Mean number of unique drug classes dispensed*	13.2	6.4	13.7	6.4	-0.475	-0.074

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1az. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	12,639	87.9%	12,639	86.3%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	55.7	5.6	55.7	5.6	-0.051	-0.009
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	12,639	100.0%	12,639	100.0%	0.000	NaN
≥ 65 years	0	0.0%	0	0.0%	NaN	NaN
Sex [*]						
Female	6,066	48.0%	6,060	47.9%	0.047	0.001
Male	6,573	52.0%	6,579	52.1%	-0.047	-0.001
Race ^{*,2}						
American Indian or Alaska Native	78	0.6%	74	0.6%	0.032	0.004
Asian	102	0.8%	100	0.8%	0.016	0.002
Black or African American	1,605	12.7%	1,616	12.8%	-0.087	-0.003
Multi-racial	53	0.4%	49	0.4%	0.032	0.005
Native Hawaiian or Other Pacific Islander	18	0.1%	23	0.2%	-0.040	-0.010
Unknown	2,753	21.8%	2,749	21.8%	0.032	0.001
White	8,030	63.5%	8,028	63.5%	0.016	0.000
Hispanic origin						
Yes	422	3.3%	419	3.3%	0.024	0.001
No	9,295	73.5%	9,303	73.6%	-0.063	-0.001
Unknown	2,922	23.1%	2,917	23.1%	0.040	0.001

Table 1az. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Demographic Characteristics						
Year*						
2013	2,144	17.0%	2,130	16.9%	0.111	0.003
2014	1,253	9.9%	1,257	9.9%	-0.032	-0.001
2015	1,113	8.8%	1,124	8.9%	-0.087	-0.003
2016	1,341	10.6%	1,324	10.5%	0.135	0.004
2017	1,447	11.4%	1,447	11.4%	0.000	0.000
2018	1,216	9.6%	1,189	9.4%	0.214	0.007
2019	1,043	8.3%	1,062	8.4%	-0.150	-0.005
2020	980	7.8%	978	7.7%	0.016	0.001
2021	1,000	7.9%	1,007	8.0%	-0.055	-0.002
2022	583	4.6%	587	4.6%	-0.032	-0.002
2023	489	3.9%	504	4.0%	-0.119	-0.006
2024	30	0.2%	30	0.2%	0.000	0.000
Health Characteristics		Standard Deviation		Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.7	2.1	4.7	2.3	0.007	0.003
Combined comorbidity score ^{*,4}	4.5	2.3	4.5	3.0	-0.003	-0.001
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,833	14.5%	1,836	14.5%	-0.024	-0.001
Overweight/Obesity [*]	3,025	23.9%	3,047	24.1%	-0.174	-0.004
Hypertension [*]	11,678	92.4%	11,698	92.6%	-0.158	-0.006
Hyperlipidemia [*]	9,848	77.9%	9,826	77.7%	0.174	0.004
Tobacco Smoking [*]	4,344	34.4%	4,359	34.5%	-0.119	-0.002
Alcohol Use [*]	884	7.0%	889	7.0%	-0.040	-0.002

Table 1az. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	10,721	84.8%	10,707	84.7%	0.111	0.003
Long/Intermediate-Acting Insulin*	8,587	67.9%	8,605	68.1%	-0.142	-0.003
Combination Insulin*	521	4.1%	544	4.3%	-0.182	-0.009
Insulin Pump*	2,118	16.8%	2,133	16.9%	-0.119	-0.003
Metformin*	913	7.2%	1,005	8.0%	-0.728	-0.027
Continuous Glucose Monitoring*	2,611	20.7%	2,615	20.7%	-0.032	-0.001
Lipid Lowering Medications*	9,682	76.6%	9,644	76.3%	0.301	0.007
Alpha Blockers*	1,145	9.1%	1,171	9.3%	-0.206	-0.007
Angiotensin II Receptor Blockers (ARBs)*	2,861	22.6%	2,871	22.7%	-0.079	-0.002
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	5,662	44.8%	5,685	45.0%	-0.182	-0.004
Beta Blockers*	6,400	50.6%	6,432	50.9%	-0.253	-0.005
Calcium Channel Blockers*	4,331	34.3%	4,350	34.4%	-0.150	-0.003
Diuretics*	5,417	42.9%	5,428	42.9%	-0.087	-0.002
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	11	0.1%	14	0.1%	-0.024	-0.008
Other Anti-Hypertensives*	888	7.0%	915	7.2%	-0.214	-0.008
Combination Anti-Hypertensives*	1,023	8.1%	1,022	8.1%	0.008	0.000

Table 1az. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	29.1	28.3	30.6	27.0	-1.475	-0.053
Mean number of emergency room encounters*	1.4	3.2	1.4	2.6	-0.015	-0.005
Mean number of inpatient hospital encounters*	0.9	1.9	0.9	1.6	-0.011	-0.006
Mean number of non-acute institutional encounters*	0.2	0.7	0.2	0.6	0.000	0.001
Mean number of other ambulatory encounters*	20.3	39.3	20.3	36.7	-0.047	-0.001
Mean number of filled prescriptions*	69.2	48.3	69.7	49.8	-0.549	-0.011
Mean number of generics dispensed*	15.4	7.5	15.5	7.3	-0.055	-0.007
Mean number of unique drug classes dispensed*	13.4	6.4	13.4	6.3	-0.047	-0.007

*Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1ba. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	19,108	100.0%	20,294	100.0%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	74.5	7.3	74.1	7.1	0.427	0.059
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	19,108	100.0%	20,294	100.0%	0.000	NaN
Sex [*]						
Female	10,474	54.8%	11,120	54.8%	0.020	0.000
Male	8,634	45.2%	9,174	45.2%	-0.020	-0.000
Race ^{*,2}						
American Indian or Alaska Native	67	0.4%	60	0.3%	0.055	0.010
Asian	205	1.1%	218	1.1%	-0.001	-0.000
Black or African American	1,678	8.8%	1,864	9.2%	-0.403	-0.014
Multi-racial	14	0.1%	11	0.1%	0.019	0.008
Native Hawaiian or Other Pacific Islander	29	0.2%	26	0.1%	0.024	0.006
Unknown	1,409	7.4%	1,603	7.9%	-0.525	-0.020
White	15,706	82.2%	16,512	81.4%	0.832	0.022
Hispanic origin						
Yes	230	1.2%	307	1.5%	-0.309	-0.027
No	17,013	89.0%	17,892	88.2%	0.872	0.027
Unknown	1,865	9.8%	2,095	10.3%	-0.563	-0.019

Table 1ba. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Demographic Characteristics						
Year*						
2013	3,334	17.4%	3,711	18.3%	-0.838	-0.022
2014	2,371	12.4%	2,578	12.7%	-0.295	-0.009
2015	1,894	9.9%	2,062	10.2%	-0.249	-0.008
2016	1,751	9.2%	1,920	9.5%	-0.297	-0.010
2017	1,594	8.3%	1,689	8.3%	0.019	0.001
2018	1,465	7.7%	1,524	7.5%	0.157	0.006
2019	1,315	6.9%	1,365	6.7%	0.156	0.006
2020	1,370	7.2%	1,347	6.6%	0.532	0.021
2021	1,487	7.8%	1,514	7.5%	0.322	0.012
2022	1,355	7.1%	1,376	6.8%	0.311	0.012
2023	1,133	5.9%	1,168	5.8%	0.174	0.007
2024	39	0.2%	40	0.2%	0.007	0.002
Health Characteristics						
	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.6	2.0	4.7	2.2	-0.111	-0.054
Combined comorbidity score ^{*,4}	5.0	2.6	5.1	3.3	-0.106	-0.036
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,119	5.9%	1,364	6.7%	-0.865	-0.036
Overweight/Obesity [*]	4,437	23.2%	4,427	21.8%	1.406	0.034
Hypertension [*]	18,033	94.4%	19,606	96.6%	-2.236	-0.108
Hyperlipidemia [*]	16,575	86.7%	17,681	87.1%	-0.381	-0.011
Tobacco Smoking [*]	4,770	25.0%	5,136	25.3%	-0.345	-0.008
Alcohol Use [*]	609	3.2%	696	3.4%	-0.242	-0.014

Table 1ba. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	15,419	80.7%	16,258	80.1%	0.582	0.015
Long/Intermediate-Acting Insulin*	13,501	70.7%	14,045	69.2%	1.449	0.032
Combination Insulin*	944	4.9%	924	4.6%	0.387	0.018
Insulin Pump*	831	4.3%	1,011	5.0%	-0.633	-0.030
Metformin*	1,842	9.6%	1,812	8.9%	0.711	0.025
Continuous Glucose Monitoring*	3,524	18.4%	3,806	18.8%	-0.312	-0.008
Lipid Lowering Medications*	15,372	80.4%	16,383	80.7%	-0.280	-0.007
Alpha Blockers*	1,726	9.0%	1,944	9.6%	-0.546	-0.019
Angiotensin II Receptor Blockers (ARBs)*	5,160	27.0%	5,809	28.6%	-1.620	-0.036
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	7,534	39.4%	8,038	39.6%	-0.179	-0.004
Beta Blockers*	10,460	54.7%	11,795	58.1%	-3.379	-0.068
Calcium Channel Blockers*	7,303	38.2%	8,562	42.2%	-3.970	-0.081
Diuretics*	9,664	50.6%	10,334	50.9%	-0.346	-0.007
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	37	0.2%	36	0.2%	0.016	0.004
Other Anti-Hypertensives*	1,288	6.7%	1,480	7.3%	-0.552	-0.022
Combination Anti-Hypertensives*	1,974	10.3%	1,991	9.8%	0.520	0.017

Table 1ba. Aggregated Unadjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	27.9	26.2	30.9	23.2	-2.958	-0.120
Mean number of emergency room encounters*	0.7	1.5	0.8	1.5	-0.113	-0.074
Mean number of inpatient hospital encounters*	0.5	1.2	0.6	1.1	-0.087	-0.077
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.7	0.004	0.006
Mean number of other ambulatory encounters*	18.1	33.1	18.9	30.7	-0.735	-0.023
Mean number of filled prescriptions*	61.9	48.7	62.7	48.6	-0.801	-0.016
Mean number of generics dispensed*	13.9	6.4	14.2	6.1	-0.319	-0.051
Mean number of unique drug classes dispensed*	12.1	5.5	12.4	5.3	-0.301	-0.056

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 1bb. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2			
Patient Characteristics¹	Number	Percent	Number	Percent		
Unique patients	17,135	89.7%	17,135	84.4%		
Demographic Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Age (years) [*]	74.3	7.2	74.4	7.2	-0.074	-0.010
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Age						
0-11 years	0	0.0%	0	0.0%	NaN	NaN
12-18 years	0	0.0%	0	0.0%	NaN	NaN
19-24 years	0	0.0%	0	0.0%	NaN	NaN
25-44 years	0	0.0%	0	0.0%	NaN	NaN
45-64 years	0	0.0%	0	0.0%	NaN	NaN
≥ 65 years	17,135	100.0%	17,135	100.0%	0.000	NaN
Sex [*]						
Female	9,368	54.7%	9,400	54.9%	-0.187	-0.004
Male	7,767	45.3%	7,735	45.1%	0.187	0.004
Race ^{*,2}						
American Indian or Alaska Native	51	0.3%	54	0.3%	-0.018	-0.003
Asian	186	1.1%	185	1.1%	0.006	0.001
Black or African American	1,539	9.0%	1,557	9.1%	-0.105	-0.004
Multi-racial	*****	*****	*****	*****	0.000	0.000
Native Hawaiian or Other Pacific Islander	*****	*****	*****	*****	0.000	0.000
Unknown	1,221	7.1%	1,240	7.2%	-0.111	-0.004
White	14,104	82.3%	14,065	82.1%	0.228	0.006
Hispanic origin						
Yes	212	1.2%	223	1.3%	-0.064	-0.006
No	15,293	89.3%	15,269	89.1%	0.140	0.005
Unknown	1,630	9.5%	1,643	9.6%	-0.076	-0.003

Table 1bb. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Demographic Characteristics	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Year*						
2013	3,067	17.9%	3,070	17.9%	-0.018	-0.000
2014	2,185	12.8%	2,112	12.3%	0.426	0.013
2015	1,721	10.0%	1,721	10.0%	0.000	0.000
2016	1,607	9.4%	1,614	9.4%	-0.041	-0.001
2017	1,446	8.4%	1,442	8.4%	0.023	0.001
2018	1,299	7.6%	1,311	7.7%	-0.070	-0.003
2019	1,142	6.7%	1,156	6.7%	-0.082	-0.003
2020	1,169	6.8%	1,181	6.9%	-0.070	-0.003
2021	1,283	7.5%	1,316	7.7%	-0.193	-0.007
2022	1,193	7.0%	1,189	6.9%	0.023	0.001
2023	992	5.8%	987	5.8%	0.029	0.001
2024	31	0.2%	36	0.2%	-0.029	-0.007
Health Characteristics	Mean	Standard Deviation	Mean	Standard Deviation	Absolute Difference	Standardized Difference
Adapted Diabetes Complications Severity Index (aDCSI) ^{*,3}	4.7	2.0	4.7	2.1	-0.009	-0.004
Combined comorbidity score ^{*,4}	5.0	2.6	5.0	3.3	-0.037	-0.012
	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
History of Diabetic Ketoacidosis (DKA) [*]	1,038	6.1%	1,046	6.1%	-0.047	-0.002
Overweight/Obesity [*]	3,839	22.4%	3,922	22.9%	-0.484	-0.012
Hypertension [*]	16,603	96.9%	16,465	96.1%	0.805	0.044
Hyperlipidemia [*]	14,956	87.3%	14,928	87.1%	0.163	0.005
Tobacco Smoking [*]	4,195	24.5%	4,304	25.1%	-0.636	-0.015
Alcohol Use [*]	557	3.3%	559	3.3%	-0.012	-0.001

Table 1bb. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Medical Product Use	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Short/Rapid-Acting Insulin*	13,776	80.4%	13,796	80.5%	-0.117	-0.003
Long/Intermediate-Acting Insulin*	11,991	70.0%	12,015	70.1%	-0.140	-0.003
Combination Insulin*	790	4.6%	820	4.8%	-0.175	-0.008
Insulin Pump*	756	4.4%	810	4.7%	-0.315	-0.015
Metformin*	1,553	9.1%	1,586	9.3%	-0.193	-0.007
Continuous Glucose Monitoring*	3,161	18.4%	3,153	18.4%	0.047	0.001
Lipid Lowering Medications*	13,858	80.9%	13,815	80.6%	0.251	0.006
Alpha Blockers*	1,610	9.4%	1,608	9.4%	0.012	0.000
Angiotensin II Receptor Blockers (ARBs)*	4,780	27.9%	4,713	27.5%	0.391	0.009
Angiotensin-Converting Enzyme Inhibitors (ACEIs)*	6,782	39.6%	6,796	39.7%	-0.082	-0.002
Beta Blockers*	9,774	57.0%	9,699	56.6%	0.438	0.009
Calcium Channel Blockers*	6,965	40.6%	6,804	39.7%	0.940	0.019
Diuretics*	8,793	51.3%	8,754	51.1%	0.228	0.005
Peripheral Vasodilators*	0	0.0%	0	0.0%	NaN	NaN
Renin Inhibitors*	33	0.2%	34	0.2%	-0.006	-0.001
Other Anti-Hypertensives*	1,199	7.0%	1,204	7.0%	-0.029	-0.001
Combination Anti-Hypertensives*	1,752	10.2%	1,760	10.3%	-0.047	-0.002

Table 1bb. Aggregated Adjusted Characteristics of Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 (Propensity Score Matched, Fixed Ratio 1:1, Caliper: 0.05) in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

	Chronic Kidney Disease Stage				Covariate Balance	
	Chronic Kidney Disease Stage 3 or 4/5		Chronic Kidney Disease Stage 1 or 2		Absolute Difference	Standardized Difference
Health Service Utilization Intensity Metrics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters*	28.3	25.2	29.5	22.7	-1.207	-0.050
Mean number of emergency room encounters*	0.7	1.5	0.7	1.4	-0.043	-0.029
Mean number of inpatient hospital encounters*	0.5	1.1	0.6	1.0	-0.037	-0.035
Mean number of non-acute institutional encounters*	0.2	0.8	0.2	0.7	-0.009	-0.013
Mean number of other ambulatory encounters*	18.0	32.8	18.7	30.4	-0.697	-0.022
Mean number of filled prescriptions*	61.9	48.2	62.6	49.1	-0.660	-0.014
Mean number of generics dispensed*	13.9	6.3	14.0	6.1	-0.104	-0.017
Mean number of unique drug classes dispensed*	12.2	5.4	12.3	5.3	-0.084	-0.016

* Covariate included in the propensity score logistic regression model.

¹Covariates in blue show a standardized difference greater than 0.1.

²Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

³Chang H-Y, Weiner JP, Richards TM, Bleich SN, Segal JB. Validating the adapted Diabetes Complications Severity Index in claims data. *Am J Manag Care.* 2012;18(11):721-726.

⁴Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol.* 2011;64(7):749-759. Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and validation of the combined comorbidity score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051.

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

Table 2a. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Site-Adjusted Analysis									
Chronic Kidney Disease Stage 3	38,583	9,882.13	93.55	0.26	1,381	139.75	35.79	1.56 (1.47, 1.65)	<0.001
Chronic Kidney Disease Stage 1 or 2	608,462	167,338.32	100.45	0.28	17,530	104.76	28.81		
Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05									
Chronic Kidney Disease Stage 3	34,002	4,695.71	50.44	0.14	819	174.41	24.09	0.94 (0.86, 1.04)	0.242
Chronic Kidney Disease Stage 1 or 2	34,002	4,695.71	50.44	0.14	867	184.64	25.50		
Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05									
Chronic Kidney Disease Stage 3	34,002	8,758.95	94.09	0.26	1,227	140.09	36.09	0.93 (0.86, 1.00)	0.055
Chronic Kidney Disease Stage 1 or 2	34,002	8,484.03	91.14	0.25	1,291	152.17	37.97		

Table 2b. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Sex

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3	38,583	9,882.13	93.55	0.26	1,381	139.75	35.79	1.56 (1.47, 1.65)	<0.001
Chronic Kidney Disease Stage 1 or 2	608,462	167,338.32	100.45	0.28	17,530	104.76	28.81		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	34,002	4,695.71	50.44	0.14	819	174.41	24.09	0.94 (0.86, 1.04)	0.242
Chronic Kidney Disease Stage 1 or 2	34,002	4,695.71	50.44	0.14	867	184.64	25.50		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	34,002	8,758.95	94.09	0.26	1,227	140.09	36.09	0.93 (0.86, 1.00)	0.055
Chronic Kidney Disease Stage 1 or 2	34,002	8,484.03	91.14	0.25	1,291	152.17	37.97		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2, Sex: Female									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3	17,562	4,495.90	93.50	0.26	676	150.36	38.49	0.94 (0.84, 1.04)	0.223
Chronic Kidney Disease Stage 1 or 2	17,638	4,313.19	89.32	0.24	700	162.29	39.69		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	16,403	2,242.33	49.93	0.14	405	180.62	24.69	0.95 (0.83, 1.09)	0.488
Chronic Kidney Disease Stage 1 or 2	16,403	2,242.33	49.93	0.14	425	189.53	25.91		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	16,403	4,202.37	93.58	0.26	617	146.82	37.62	0.92 (0.83, 1.03)	0.155
Chronic Kidney Disease Stage 1 or 2	16,403	4,026.08	89.65	0.25	647	160.70	39.44		

Table 2b. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Sex

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2, Sex: Male									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3	16,440	4,263.05	94.71	0.26	551	129.25	33.52	0.91 (0.81, 1.03)	0.125
Chronic Kidney Disease Stage 1 or 2	16,364	4,170.84	93.09	0.25	591	141.70	36.12		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	14,981	2,093.65	51.05	0.14	319	152.37	21.29	0.92 (0.79, 1.07)	0.278
Chronic Kidney Disease Stage 1 or 2	14,981	2,093.65	51.05	0.14	347	165.74	23.16		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	14,981	3,903.50	95.17	0.26	500	128.09	33.38	0.96 (0.85, 1.09)	0.51
Chronic Kidney Disease Stage 1 or 2	14,981	3,806.93	92.82	0.25	512	134.49	34.18		

Table 2c. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Age Group

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3	38,583	9,882.13	93.55	0.26	1,381	139.75	35.79	1.56 (1.47, 1.65)	<0.001
Chronic Kidney Disease Stage 1 or 2	608,462	167,338.32	100.45	0.28	17,530	104.76	28.81		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	34,002	4,695.71	50.44	0.14	819	174.41	24.09	0.94 (0.86, 1.04)	0.242
Chronic Kidney Disease Stage 1 or 2	34,002	4,695.71	50.44	0.14	867	184.64	25.50		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	34,002	8,758.95	94.09	0.26	1,227	140.09	36.09	0.93 (0.86, 1.00)	0.055
Chronic Kidney Disease Stage 1 or 2	34,002	8,484.03	91.14	0.25	1,291	152.17	37.97		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2, Age Group: 0-11 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3	*****	0.54	65.67	0.18	0	0.00	0.00	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	*****	0.11	39.00	0.11	0	0.00	0.00		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2, Age Group: 12-18 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		

Table 2c. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Age Group

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2, Age Group: 19-24 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2, Age Group: 25-44 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3	5,056	1,142.48	82.53	0.23	434	379.88	85.84	0.82 (0.72, 0.93)	0.003
Chronic Kidney Disease Stage 1 or 2	4,214	900.64	78.06	0.21	433	480.77	102.75		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	3,755	438.69	42.67	0.12	222	506.05	59.12	0.87 (0.73, 1.04)	0.131
Chronic Kidney Disease Stage 1 or 2	3,755	438.69	42.67	0.12	255	581.28	67.91		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	3,755	847.35	82.42	0.23	314	370.57	83.62	0.79 (0.68, 0.92)	0.002
Chronic Kidney Disease Stage 1 or 2	3,755	795.89	77.42	0.21	380	477.45	101.20		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2, Age Group: 45-64 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3	10,864	2,897.82	97.43	0.27	428	147.70	39.40	0.92 (0.81, 1.05)	0.229
Chronic Kidney Disease Stage 1 or 2	11,489	2,970.01	94.42	0.26	482	162.29	41.95		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	9,802	1,392.64	51.89	0.14	245	175.92	24.99	0.92 (0.77, 1.09)	0.331
Chronic Kidney Disease Stage 1 or 2	9,802	1,392.64	51.89	0.14	267	191.72	27.24		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	9,802	2,627.87	97.92	0.27	383	145.75	39.07	0.94 (0.82, 1.08)	0.396
Chronic Kidney Disease Stage 1 or 2	9,802	2,524.23	94.06	0.26	396	156.88	40.40		

Table 2c. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Age Group

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2, Age Group: ≥ 65 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3	16,922	4,440.64	95.85	0.26	272	61.25	16.07	0.92 (0.78, 1.09)	0.328
Chronic Kidney Disease Stage 1 or 2	17,284	4,379.34	92.55	0.25	293	66.91	16.95		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	15,703	2,232.34	51.92	0.14	146	65.40	9.30	0.84 (0.67, 1.05)	0.118
Chronic Kidney Disease Stage 1 or 2	15,703	2,232.34	51.92	0.14	174	77.95	11.08		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3	15,703	4,109.36	95.58	0.26	252	61.32	16.05	0.93 (0.78, 1.11)	0.427
Chronic Kidney Disease Stage 1 or 2	15,703	4,013.25	93.35	0.26	265	66.03	16.88		

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

N/A: Not applicable

Table 3a. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Site-Adjusted Analysis									
Chronic Kidney Disease Stage 4/5	36,391	8,687.38	87.19	0.24	2,384	274.42	65.51	2.84 (2.71, 2.97)	<0.001
Chronic Kidney Disease Stage 1 or 2	608,462	167,338.32	100.45	0.28	17,530	104.76	28.81		
Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05									
Chronic Kidney Disease Stage 4/5	16,033	2,123.78	48.38	0.13	528	248.61	32.93	0.96 (0.85, 1.09)	0.542
Chronic Kidney Disease Stage 1 or 2	16,033	2,123.78	48.38	0.13	548	258.03	34.18		
Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05									
Chronic Kidney Disease Stage 4/5	16,033	4,004.65	91.23	0.25	808	201.77	50.40	0.99 (0.89, 1.09)	0.788
Chronic Kidney Disease Stage 1 or 2	16,033	3,885.94	88.53	0.24	798	205.36	49.77		

Table 3b. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Sex

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 4/5	36,391	8,687.38	87.19	0.24	2,384	274.42	65.51	2.84 (2.71, 2.97)	<0.001
Chronic Kidney Disease Stage 1 or 2	608,462	167,338.32	100.45	0.28	17,530	104.76	28.81		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	16,033	2,123.78	48.38	0.13	528	248.61	32.93	0.96 (0.85, 1.09)	0.542
Chronic Kidney Disease Stage 1 or 2	16,033	2,123.78	48.38	0.13	548	258.03	34.18		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	16,033	4,004.65	91.23	0.25	808	201.77	50.40	0.99 (0.89, 1.09)	0.788
Chronic Kidney Disease Stage 1 or 2	16,033	3,885.94	88.53	0.24	798	205.36	49.77		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2, Sex: Female									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 4/5	8,027	1,978.81	90.04	0.25	429	216.80	53.44	0.97 (0.85, 1.11)	0.69
Chronic Kidney Disease Stage 1 or 2	8,078	1,959.93	88.62	0.24	432	220.42	53.48		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	7,361	964.65	47.87	0.13	238	246.72	32.33	0.90 (0.75, 1.07)	0.229
Chronic Kidney Disease Stage 1 or 2	7,361	964.65	47.87	0.13	265	274.71	36.00		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	7,361	1,806.58	89.64	0.25	388	214.77	52.71	0.98 (0.85, 1.12)	0.726
Chronic Kidney Disease Stage 1 or 2	7,361	1,791.33	88.89	0.24	392	218.83	53.25		

Table 3b. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Sex

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2, Sex: Male									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 4/5	8,006	2,025.84	92.42	0.25	379	187.08	47.34	1.00 (0.87, 1.16)	0.954
Chronic Kidney Disease Stage 1 or 2	7,955	1,926.01	88.43	0.24	366	190.03	46.01		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	7,149	958.70	48.98	0.13	227	236.78	31.75	1.00 (0.84, 1.21)	0.963
Chronic Kidney Disease Stage 1 or 2	7,149	958.70	48.98	0.13	226	235.74	31.61		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	7,149	1,810.96	92.52	0.25	332	183.33	46.44	0.99 (0.85, 1.16)	0.913
Chronic Kidney Disease Stage 1 or 2	7,149	1,729.48	88.36	0.24	323	186.76	45.18		

Table 3c. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Age Group

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 4/5	36,391	8,687.38	87.19	0.24	2,384	274.42	65.51	2.84 (2.71, 2.97)	<0.001
Chronic Kidney Disease Stage 1 or 2	608,462	167,338.32	100.45	0.28	17,530	104.76	28.81		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	16,033	2,123.78	48.38	0.13	528	248.61	32.93	0.96 (0.85, 1.09)	0.542
Chronic Kidney Disease Stage 1 or 2	16,033	2,123.78	48.38	0.13	548	258.03	34.18		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	16,033	4,004.65	91.23	0.25	808	201.77	50.40	0.99 (0.89, 1.09)	0.788
Chronic Kidney Disease Stage 1 or 2	16,033	3,885.94	88.53	0.24	798	205.36	49.77		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2, Age Group: 0-11 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	*****	1.33	60.63	0.17	0	0.00	0.00		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2, Age Group: 12-18 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		

Table 3c. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Age Group

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2, Age Group: 19-24 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2, Age Group: 25-44 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 4/5	3,475	789.23	82.95	0.23	394	499.22	113.38	0.97 (0.84, 1.13)	0.704
Chronic Kidney Disease Stage 1 or 2	2,973	638.88	78.49	0.21	331	518.09	111.34		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	2,471	282.17	41.71	0.11	184	652.09	74.46	0.95 (0.78, 1.16)	0.607
Chronic Kidney Disease Stage 1 or 2	2,471	282.17	41.71	0.11	194	687.53	78.51		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	2,471	566.62	83.75	0.23	286	504.75	115.74	0.99 (0.84, 1.17)	0.899
Chronic Kidney Disease Stage 1 or 2	2,471	533.23	78.82	0.22	277	519.48	112.10		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2, Age Group: 45-64 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 4/5	5,996	1,576.89	96.06	0.26	238	150.93	39.69	0.82 (0.69, 0.97)	0.024
Chronic Kidney Disease Stage 1 or 2	5,671	1,422.63	91.63	0.25	274	192.60	48.32		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	4,831	661.84	50.04	0.14	132	199.44	27.32	0.85 (0.68, 1.07)	0.175
Chronic Kidney Disease Stage 1 or 2	4,831	661.84	50.04	0.14	155	234.20	32.08		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	4,831	1,254.58	94.85	0.26	201	160.21	41.61	0.87 (0.72, 1.05)	0.147
Chronic Kidney Disease Stage 1 or 2	4,831	1,221.16	92.33	0.25	227	185.89	46.99		

Table 3c. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Age Group

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2, Age Group: ≥ 65 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 4/5	5,778	1,440.98	91.09	0.25	110	76.34	19.04	1.00 (0.78, 1.30)	0.982
Chronic Kidney Disease Stage 1 or 2	6,474	1,603.43	90.46	0.25	122	76.09	18.84		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	5,215	726.32	50.87	0.14	54	74.35	10.35	0.90 (0.62, 1.30)	0.574
Chronic Kidney Disease Stage 1 or 2	5,215	726.32	50.87	0.14	60	82.61	11.51		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 4/5	5,215	1,313.86	92.02	0.25	105	79.92	20.13	1.13 (0.85, 1.50)	0.394
Chronic Kidney Disease Stage 1 or 2	5,215	1,281.13	89.73	0.25	91	71.03	17.45		

*****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.
 Data represented by NaN (Not a Number) is due to their inability to be calculated.
 N/A: Not applicable

Table 4a. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Site-Adjusted Analysis									
Chronic Kidney Disease Stage 3 or 4/5	74,974	18,861.63	91.89	0.25	3,832	203.16	51.11	2.19 (2.11, 2.28)	<0.001
Chronic Kidney Disease Stage 1 or 2	608,462	167,338.32	100.45	0.28	17,530	104.76	28.81		
Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05									
Chronic Kidney Disease Stage 3 or 4/5	42,925	5,950.14	50.63	0.14	1,208	203.02	28.14	1.00 (0.92, 1.08)	0.919
Chronic Kidney Disease Stage 1 or 2	42,925	5,950.14	50.63	0.14	1,213	203.86	28.26		
Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05									
Chronic Kidney Disease Stage 3 or 4/5	42,925	11,188.80	95.21	0.26	1,808	161.59	42.12	0.98 (0.91, 1.04)	0.477
Chronic Kidney Disease Stage 1 or 2	42,925	10,776.99	91.70	0.25	1,793	166.37	41.77		

Table 4b. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Sex

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3 or 4/5	74,974	18,861.63	91.89	0.25	3,832	203.16	51.11	2.19 (2.11, 2.28)	<0.001
Chronic Kidney Disease Stage 1 or 2	608,462	167,338.32	100.45	0.28	17,530	104.76	28.81		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	42,925	5,950.14	50.63	0.14	1,208	203.02	28.14	1.00 (0.92, 1.08)	0.919
Chronic Kidney Disease Stage 1 or 2	42,925	5,950.14	50.63	0.14	1,213	203.86	28.26		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	42,925	11,188.80	95.21	0.26	1,808	161.59	42.12	0.98 (0.91, 1.04)	0.477
Chronic Kidney Disease Stage 1 or 2	42,925	10,776.99	91.70	0.25	1,793	166.37	41.77		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2, Sex: Female									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3 or 4/5	21,877	5,633.66	94.06	0.26	963	170.94	44.02	0.93 (0.86, 1.02)	0.135
Chronic Kidney Disease Stage 1 or 2	22,195	5,506.11	90.61	0.25	1,010	183.43	45.51		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	20,674	2,840.47	50.18	0.14	605	212.99	29.26	1.01 (0.90, 1.13)	0.84
Chronic Kidney Disease Stage 1 or 2	20,674	2,840.47	50.18	0.14	598	210.53	28.93		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	20,674	5,331.83	94.20	0.26	906	169.92	43.82	0.96 (0.88, 1.05)	0.389
Chronic Kidney Disease Stage 1 or 2	20,674	5,122.56	90.50	0.25	912	178.04	44.11		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2, Sex: Male									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3 or 4/5	21,048	5,555.15	96.40	0.26	845	152.11	40.15	1.03 (0.94, 1.14)	0.532
Chronic Kidney Disease Stage 1 or 2	20,730	5,270.89	92.87	0.25	783	148.55	37.77		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	19,118	2,694.55	51.48	0.14	510	189.27	26.68	1.05 (0.93, 1.19)	0.428
Chronic Kidney Disease Stage 1 or 2	19,118	2,694.55	51.48	0.14	485	179.99	25.37		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	19,118	5,083.41	97.12	0.27	751	147.74	39.28	1.03 (0.93, 1.15)	0.523
Chronic Kidney Disease Stage 1 or 2	19,118	4,849.01	92.64	0.25	701	144.57	36.67		

Table 4c. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Age Group

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3 or 4/5	74,974	18,861.63	91.89	0.25	3,832	203.16	51.11	2.19 (2.11, 2.28)	<0.001
Chronic Kidney Disease Stage 1 or 2	608,462	167,338.32	100.45	0.28	17,530	104.76	28.81		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	42,925	5,950.14	50.63	0.14	1,208	203.02	28.14	1.00 (0.92, 1.08)	0.919
Chronic Kidney Disease Stage 1 or 2	42,925	5,950.14	50.63	0.14	1,213	203.86	28.26		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	42,925	11,188.80	95.21	0.26	1,808	161.59	42.12	0.98 (0.91, 1.04)	0.477
Chronic Kidney Disease Stage 1 or 2	42,925	10,776.99	91.70	0.25	1,793	166.37	41.77		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2, Age Group: 0-11 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3 or 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	*****	1.30	68.00	0.19	0	0.00	0.00		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2, Age Group: 12-18 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3 or 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	0	0.00	0.00	0.00	0	NaN	NaN	NaN	N/A
Chronic Kidney Disease Stage 1 or 2	0	0.00	0.00	0.00	0	NaN	NaN		

Table 4c. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Age Group

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2, Age Group: 19-24 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3 or 4/5	310	68.53	80.74	0.22	46	671.24	148.39	0.74 (0.51, 1.08)	0.118
Chronic Kidney Disease Stage 1 or 2	355	64.01	65.85	0.18	65	1,015.47	183.10		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	255	25.98	37.21	0.10	28	1,077.75	109.80	0.88 (0.53, 1.45)	0.606
Chronic Kidney Disease Stage 1 or 2	255	25.98	37.21	0.10	32	1,231.72	125.49		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	255	54.26	77.73	0.21	42	774.05	164.71	0.96 (0.62, 1.47)	0.838
Chronic Kidney Disease Stage 1 or 2	255	45.79	65.58	0.18	41	895.39	160.78		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2, Age Group: 25-44 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3 or 4/5	6,950	1,574.24	82.73	0.23	758	481.50	109.06	0.92 (0.83, 1.02)	0.12
Chronic Kidney Disease Stage 1 or 2	5,834	1,294.40	81.04	0.22	672	519.16	115.19		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	5,171	622.40	43.96	0.12	361	580.01	69.81	0.88 (0.77, 1.02)	0.084
Chronic Kidney Disease Stage 1 or 2	5,171	622.40	43.96	0.12	409	657.13	79.09		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	5,171	1,195.64	84.45	0.23	543	454.15	105.01	0.88 (0.79, 0.99)	0.035
Chronic Kidney Disease Stage 1 or 2	5,171	1,135.34	80.19	0.22	595	524.07	115.06		
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2, Age Group: 45-64 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3 or 4/5	14,380	3,919.13	99.55	0.27	585	149.27	40.68	0.96 (0.86, 1.07)	0.469
Chronic Kidney Disease Stage 1 or 2	14,651	3,820.36	95.24	0.26	606	158.62	41.36		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	12,639	1,817.62	52.53	0.14	332	182.66	26.27	0.99 (0.85, 1.16)	0.938
Chronic Kidney Disease Stage 1 or 2	12,639	1,817.62	52.53	0.14	334	183.76	26.43		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	12,639	3,473.15	100.37	0.27	520	149.72	41.14	1.00 (0.89, 1.13)	0.985
Chronic Kidney Disease Stage 1 or 2	12,639	3,315.33	95.81	0.26	500	150.81	39.56		

Table 4c. Effect Estimates for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, by Analysis Type and Age Group

Chronic Kidney Disease Stage	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1,000 Person Years	Risk per 1,000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2, Age Group: ≥ 65 years									
<i>Site-Adjusted Analysis</i>									
Chronic Kidney Disease Stage 3 or 4/5	19,036	5,044.18	96.78	0.26	283	56.10	14.87	0.83 (0.71, 0.97)	0.019
Chronic Kidney Disease Stage 1 or 2	20,176	5,109.81	92.50	0.25	348	68.10	17.25		
<i>Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	17,090	2,439.99	52.15	0.14	142	58.20	8.31	0.88 (0.70, 1.10)	0.252
Chronic Kidney Disease Stage 1 or 2	17,090	2,439.99	52.15	0.14	162	66.39	9.48		
<i>Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper= 0.05</i>									
Chronic Kidney Disease Stage 3 or 4/5	17,090	4,531.41	96.85	0.27	260	57.38	15.21	0.89 (0.75, 1.06)	0.194
Chronic Kidney Disease Stage 1 or 2	17,090	4,332.27	92.59	0.25	279	64.40	16.33		

*****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.

Data represented by NaN (Not a Number) is due to their inability to be calculated.

N/A: Not applicable

Table 5. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2			
	Chronic Kidney Disease Stage 1 or 2		Chronic Kidney Disease Stage 3	
	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements				
Enrolled at any point during the query period	426,727,379	N/A	N/A	N/A
Had required coverage type (medical and/or drug coverage)	318,162,769	108,564,610	N/A	N/A
Enrolled during specified age range	318,156,030	6,739	N/A	N/A
Had requestable medical charts	318,156,030	0	N/A	N/A
Met demographic requirements (sex, race, and Hispanic origin)	318,043,485	112,545	N/A	N/A
Members with a valid index event				
Had any cohort-defining claim during the query period	6,209,488	311,833,997	N/A	N/A
Claim recorded during specified age range	6,209,457	31	N/A	N/A
Episode defining index claim recorded during the query period	6,164,342	45,115	N/A	N/A
Members with required pre-index history				
Had sufficient pre-index continuous enrollment	4,585,106	1,579,236	N/A	N/A
Met inclusion and exclusion criteria ¹	685,422	3,899,684	N/A	N/A
<i>Evidence of non-insulin antidiabetic treatment</i>	N/A	1,969,962	N/A	N/A
<i>No evidence of Type 1 Diabetes Klompas Definition</i>	N/A	3,886,630	N/A	N/A
Met event incidence criteria	685,422	0	N/A	N/A
Members with required post-index follow-up				
Had sufficient post-index continuous enrollment	685,422	0	N/A	N/A
Had minimum days' supply on index date	685,422	0	N/A	N/A
Had index episode of at least required length	685,422	0	N/A	N/A
Had index episode longer than blackout period	684,849	573	N/A	N/A
Did not have an event during blackout period	683,436	1,413	N/A	N/A
Final cohort				
Number of members	683,436	N/A	N/A	N/A
Number of episodes	683,436	N/A	34,002	N/A

Table 5. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2			
	Chronic Kidney Disease Stage 1 or 2		Chronic Kidney Disease Stage 3	
	Remaining	Excluded	Remaining	Excluded
Members meeting comparative cohort eligibility requirements				
Excluded due to same-day initiation of both exposure groups	608,462	0	38,583	0
Excluded due to prior initiation of other exposure group	608,462	0	38,583	0
Included in comparative analysis	34,002	574,460	34,002	4,581
Additional information				
Number of events in comparative analysis	1,291	N/A	1,227	N/A

Table 5. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2				
	Chronic Kidney Disease Stage 1 or 2		Chronic Kidney Disease Stage 4/5	
	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements				
Enrolled at any point during the query period	426,727,379	N/A	N/A	N/A
Had required coverage type (medical and/or drug coverage)	318,162,769	108,564,610	N/A	N/A
Enrolled during specified age range	318,156,030	6,739	N/A	N/A
Had requestable medical charts	318,156,030	0	N/A	N/A
Met demographic requirements (sex, race, and Hispanic origin)	318,043,485	112,545	N/A	N/A
Members with a valid index event				
Had any cohort-defining claim during the query period	6,209,488	311,833,997	N/A	N/A
Claim recorded during specified age range	6,209,457	31	N/A	N/A
Episode defining index claim recorded during the query period	6,164,342	45,115	N/A	N/A
Members with required pre-index history				
Had sufficient pre-index continuous enrollment	4,585,106	1,579,236	N/A	N/A
Met inclusion and exclusion criteria ¹	685,422	3,899,684	N/A	N/A
<i>Evidence of non-insulin antidiabetic treatment</i>	N/A	1,969,962	N/A	N/A
<i>No evidence of Type 1 Diabetes Klompas Definition</i>	N/A	3,886,630	N/A	N/A
Met event incidence criteria	685,422	0	N/A	N/A
Members with required post-index follow-up				
Had sufficient post-index continuous enrollment	685,422	0	N/A	N/A
Had minimum days' supply on index date	685,422	0	N/A	N/A
Had index episode of at least required length	685,422	0	N/A	N/A
Had index episode longer than blackout period	684,849	573	N/A	N/A
Did not have an event during blackout period	683,436	1,413	N/A	N/A
Final cohort				
Number of members	683,436	N/A	N/A	N/A
Number of episodes	683,436	N/A	16,033	N/A

Table 5. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2			
	Chronic Kidney Disease Stage 1 or 2		Chronic Kidney Disease Stage 4/5	
	Remaining	Excluded	Remaining	Excluded
Members meeting comparative cohort eligibility requirements				
Excluded due to same-day initiation of both exposure groups	608,462	0	36,391	0
Excluded due to prior initiation of other exposure group	608,462	0	36,391	0
Included in comparative analysis	16,033	592,429	16,033	20,358
Additional information				
Number of events in comparative analysis	798	N/A	808	N/A

Table 5. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2			
	Chronic Kidney Disease Stage 1 or 2 Remaining	Chronic Kidney Disease Stage 1 or 2 Excluded	Chronic Kidney Disease Stage 3 or 4/5 Remaining	Chronic Kidney Disease Stage 3 or 4/5 Excluded
Members meeting enrollment and demographic requirements				
Enrolled at any point during the query period	426,727,379	N/A	N/A	N/A
Had required coverage type (medical and/or drug coverage)	318,162,769	108,564,610	N/A	N/A
Enrolled during specified age range	318,156,030	6,739	N/A	N/A
Had requestable medical charts	318,156,030	0	N/A	N/A
Met demographic requirements (sex, race, and Hispanic origin)	318,043,485	112,545	N/A	N/A
Members with a valid index event				
Had any cohort-defining claim during the query period	6,209,488	311,833,997	N/A	N/A
Claim recorded during specified age range	6,209,457	31	N/A	N/A
Episode defining index claim recorded during the query period	6,164,342	45,115	N/A	N/A
Members with required pre-index history				
Had sufficient pre-index continuous enrollment	4,585,106	1,579,236	N/A	N/A
Met inclusion and exclusion criteria ¹	685,422	3,899,684	N/A	N/A
<i>Evidence of non-insulin antidiabetic treatment</i>	N/A	1,969,962	N/A	N/A
<i>No evidence of Type 1 Diabetes Klompas Definition</i>	N/A	3,886,630	N/A	N/A
Met event incidence criteria	685,422	0	N/A	N/A
Members with required post-index follow-up				
Had sufficient post-index continuous enrollment	685,422	0	N/A	N/A
Had minimum days' supply on index date	685,422	0	N/A	N/A
Had index episode of at least required length	685,422	0	N/A	N/A
Had index episode longer than blackout period	684,849	573	N/A	N/A
Did not have an event during blackout period	683,436	1,413	N/A	N/A
Final cohort				
Number of members	683,436	N/A	N/A	N/A
Number of episodes	683,436	N/A	42,925	N/A

Table 5. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

	Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2			
	Chronic Kidney Disease Stage 1 or 2		Chronic Kidney Disease Stage 3 or 4/5	
	Remaining	Excluded	Remaining	Excluded
Members meeting comparative cohort eligibility requirements				
Excluded due to same-day initiation of both exposure groups	608,462	0	74,974	0
Excluded due to prior initiation of other exposure group	608,462	0	74,974	0
Included in comparative analysis	42,925	565,537	42,925	32,049
Additional information				
Number of events in comparative analysis	1,793	N/A	1,808	N/A

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

N/A: Not applicable

Figure 1a. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Unadjusted Propensity Score Distribution

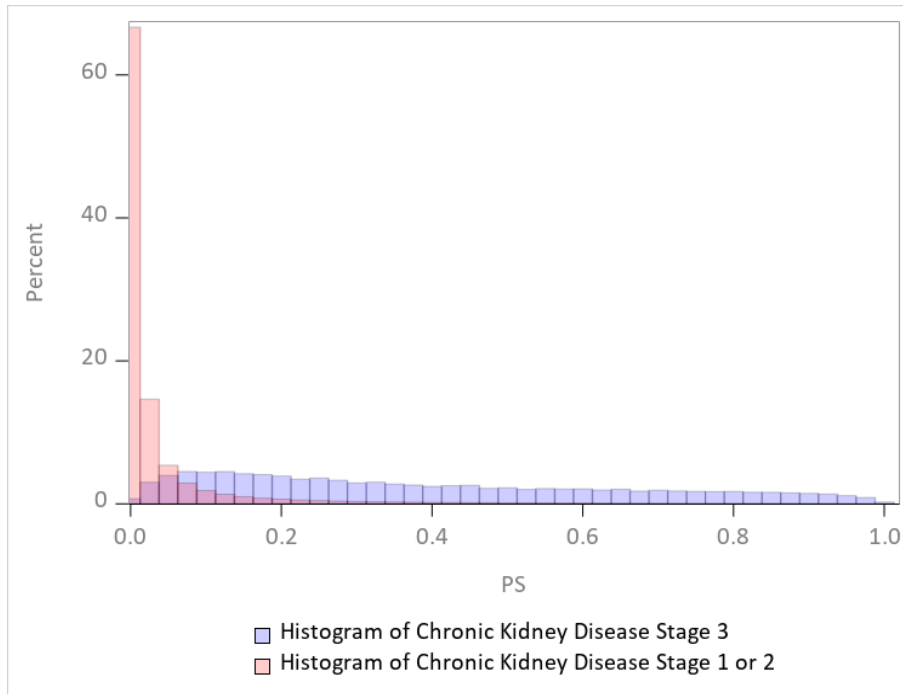


Figure 1a. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

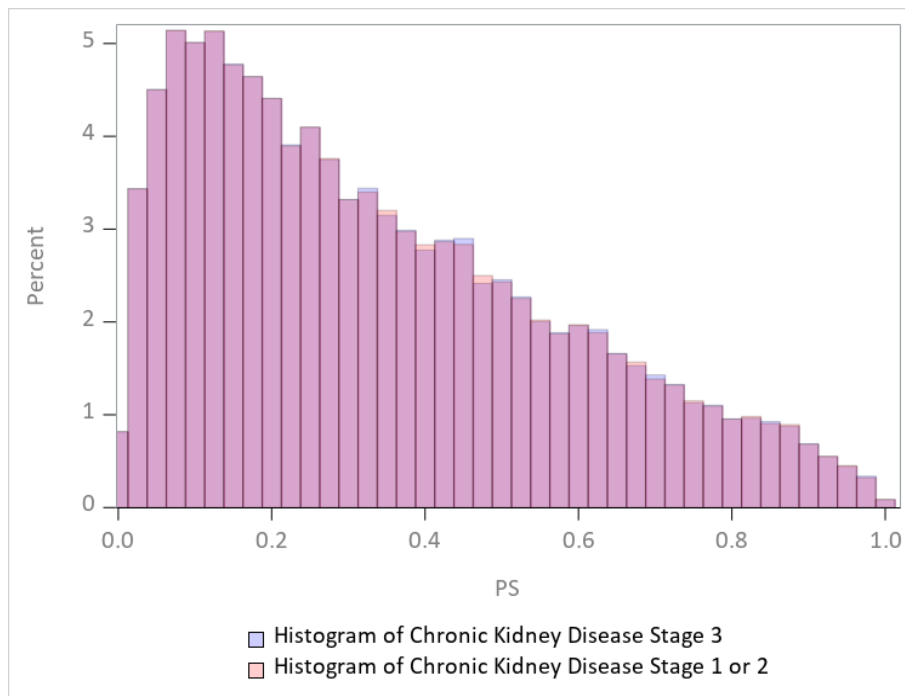


Figure 1b. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Unadjusted Propensity Score Distribution

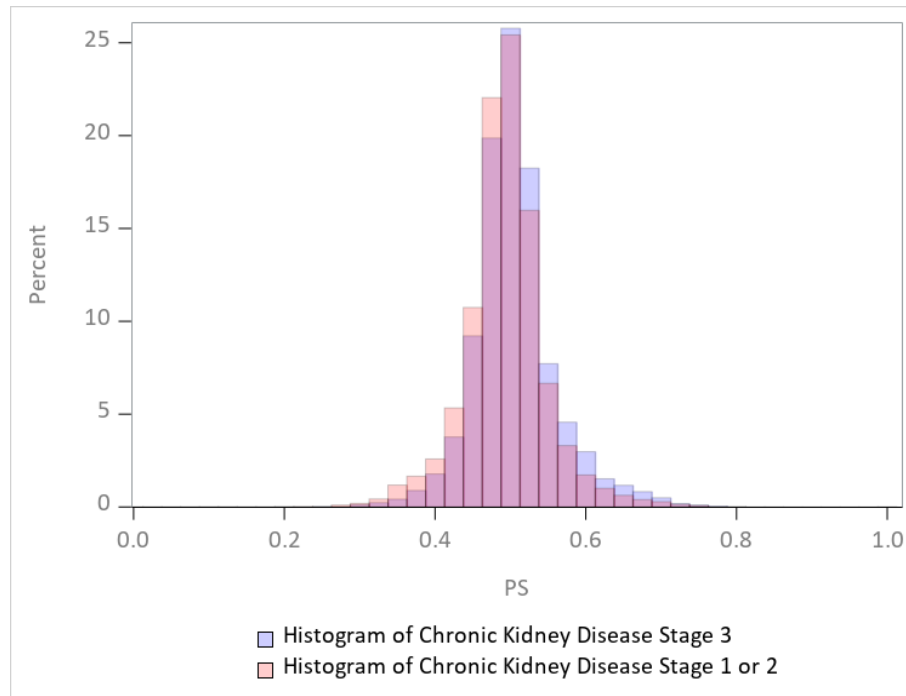


Figure 1b. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

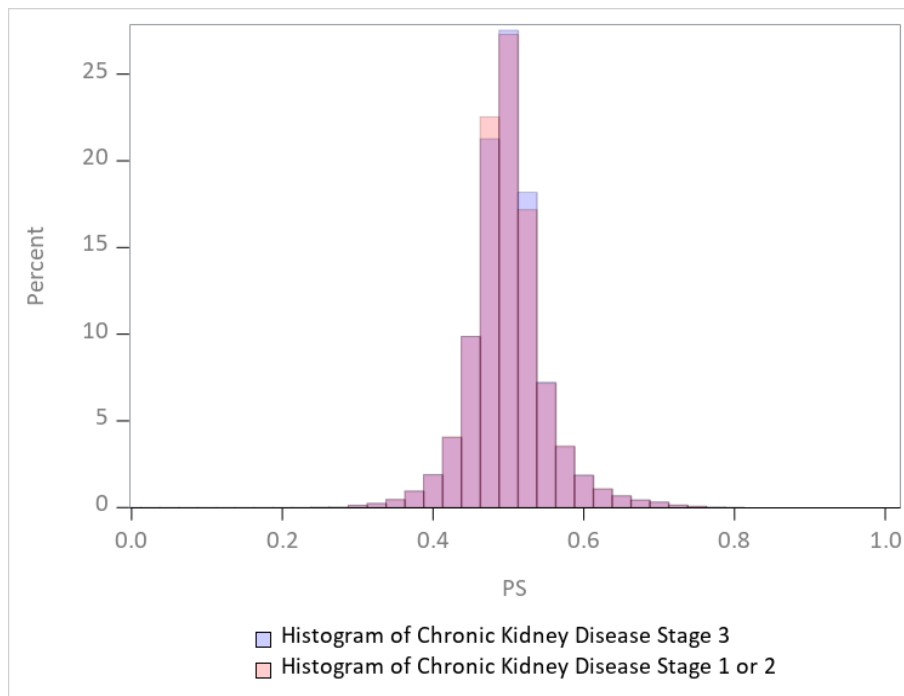


Figure 1c. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Unadjusted Propensity Score Distribution

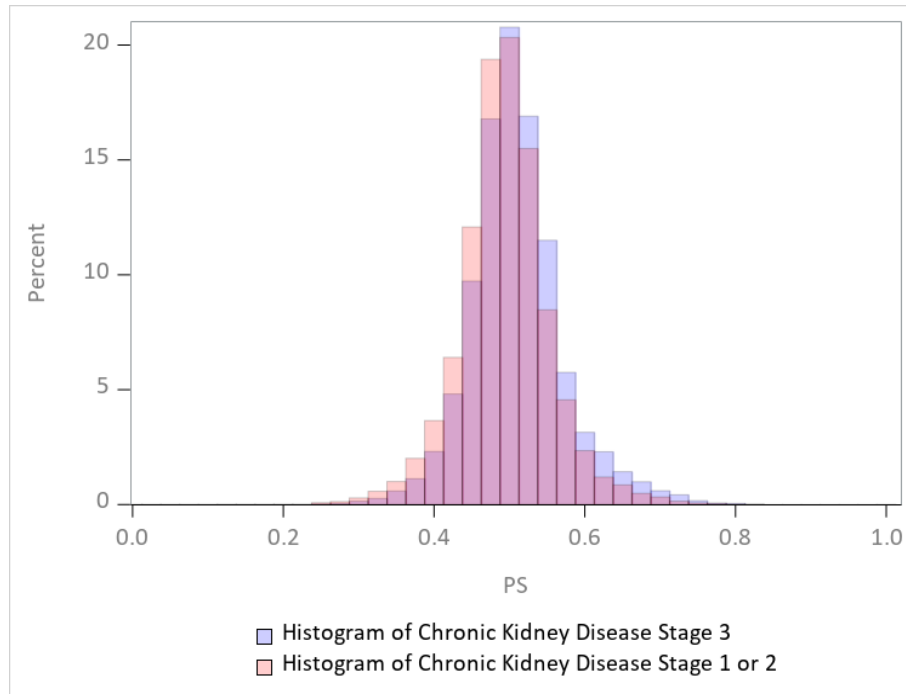


Figure 1c. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

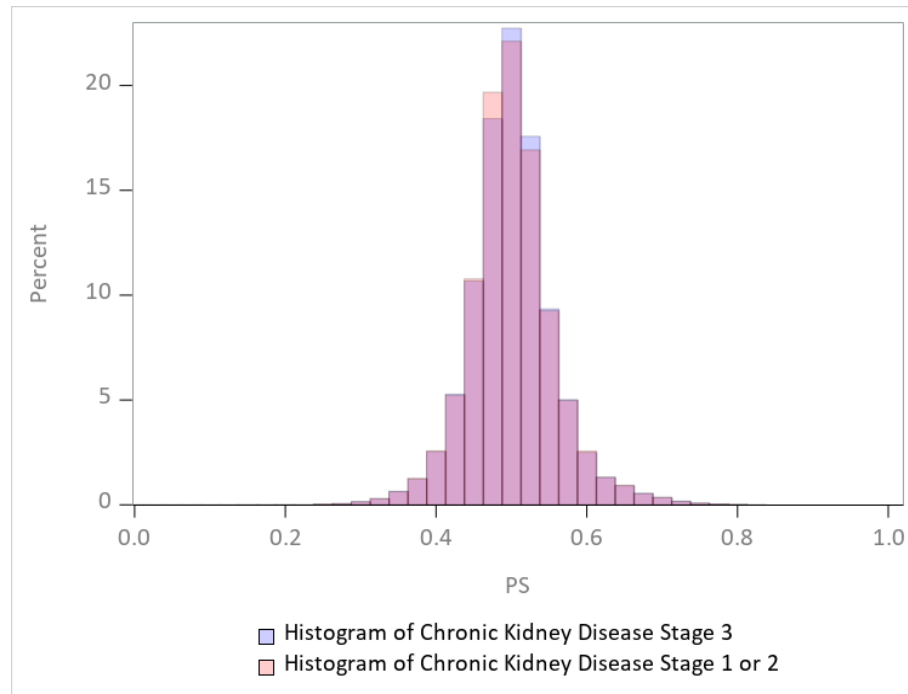
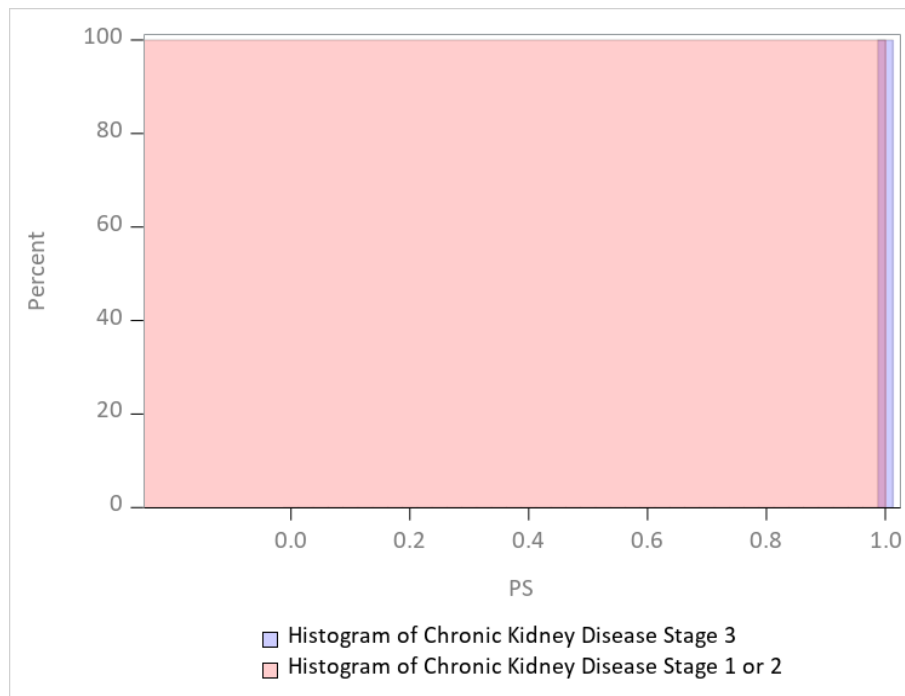


Figure 1d. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

There were 0 patients in the adjusted analysis; no histogram could be produced.

Figure 1e. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Unadjusted Propensity Score Distribution

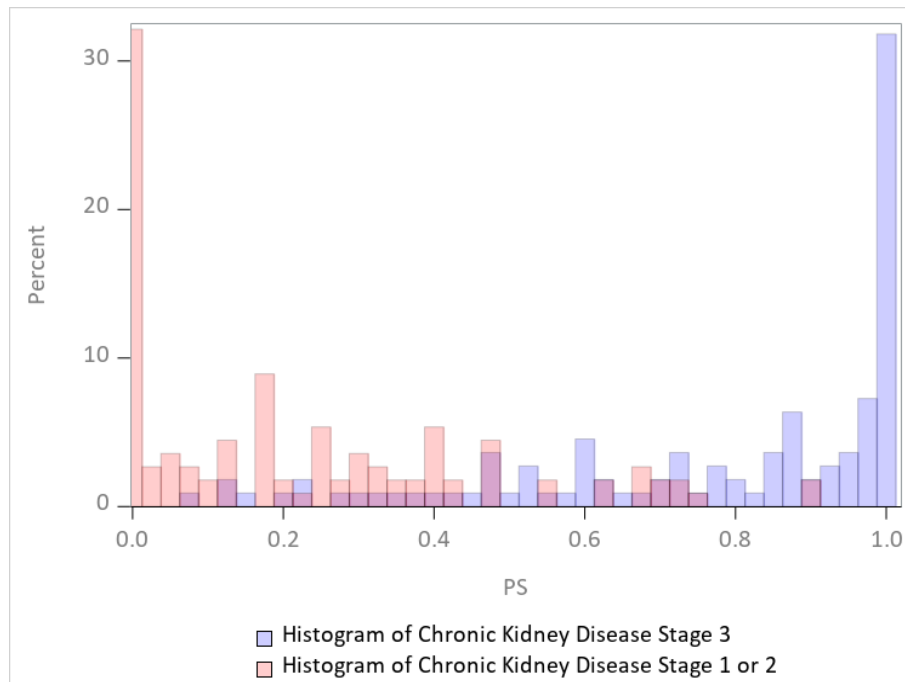


Figure 1e. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

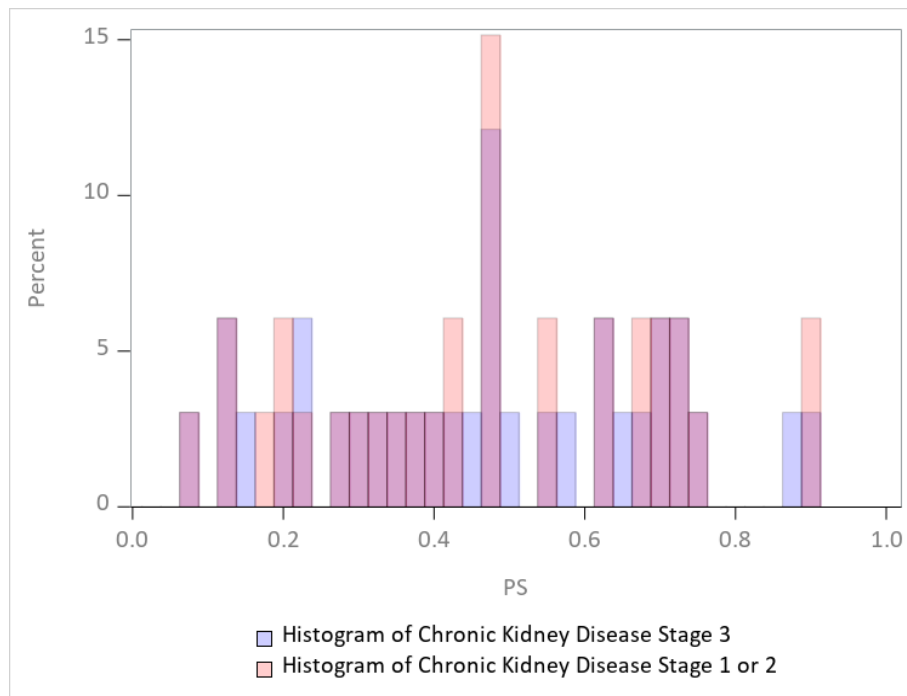


Figure 1f. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Unadjusted Propensity Score Distribution

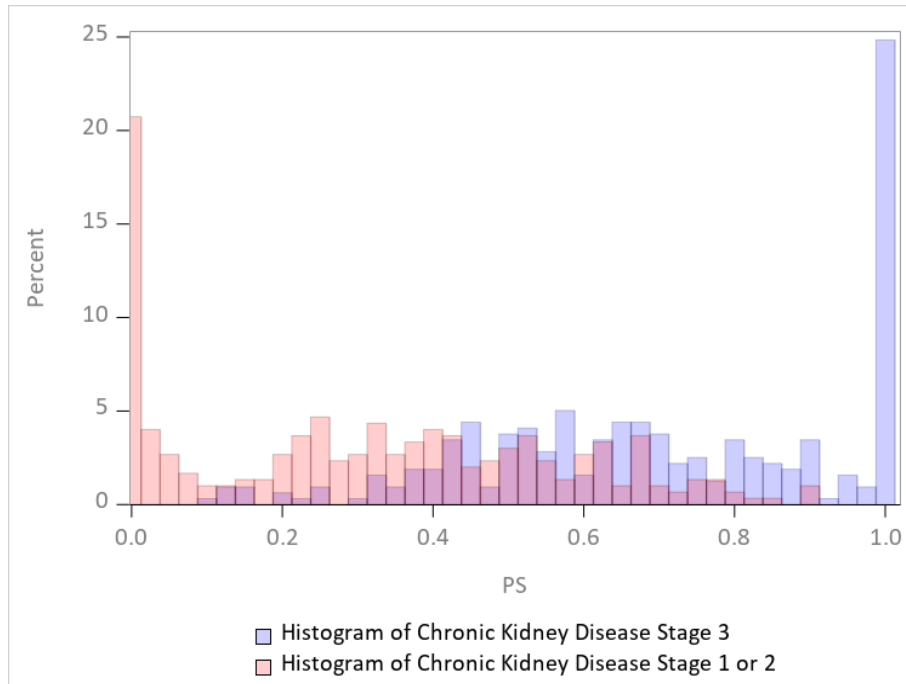


Figure 1f. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

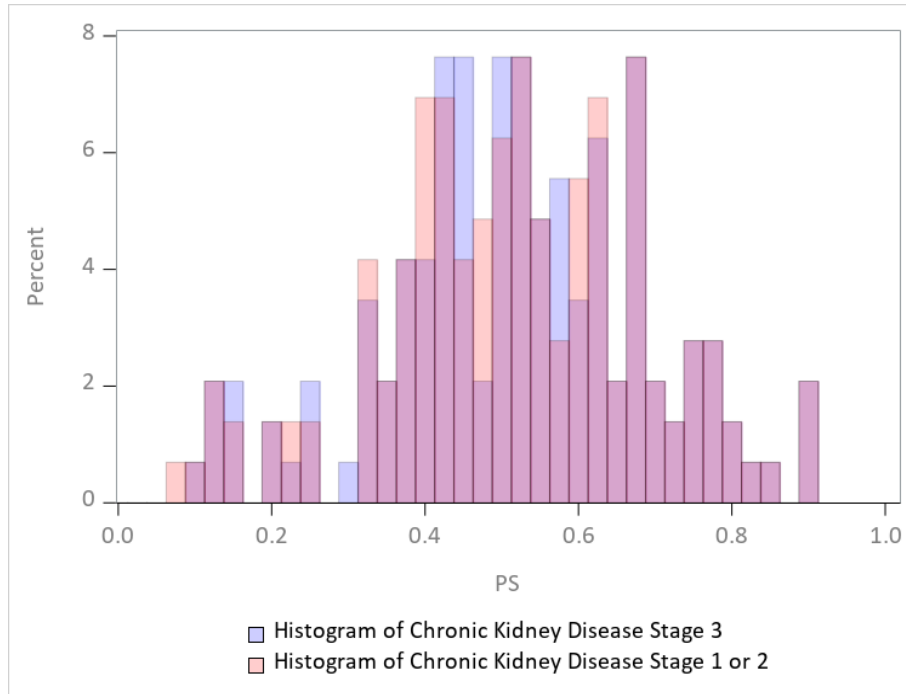


Figure 1g. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Unadjusted Propensity Score Distribution

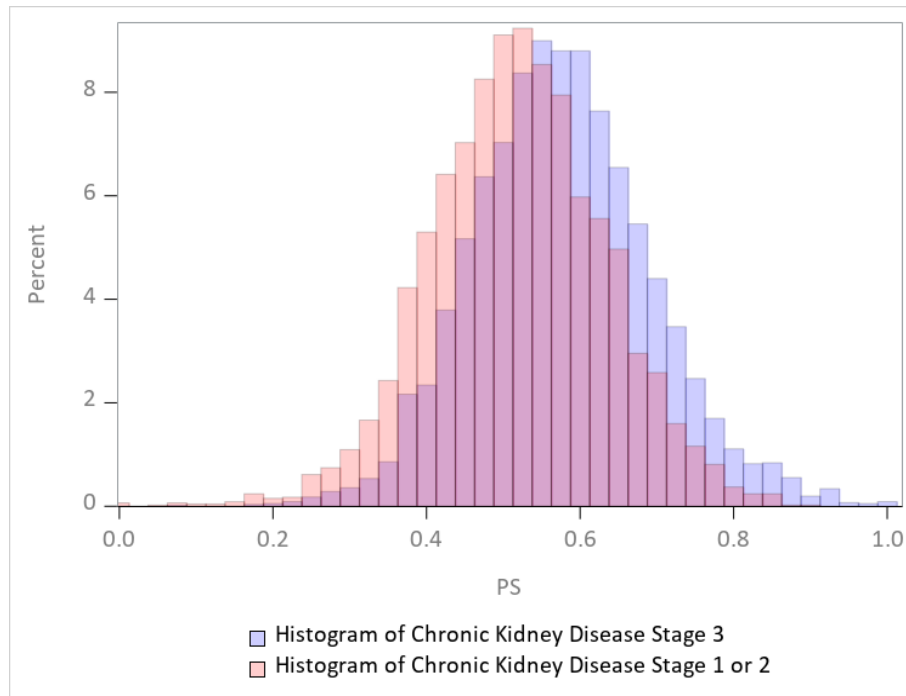


Figure 1g. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

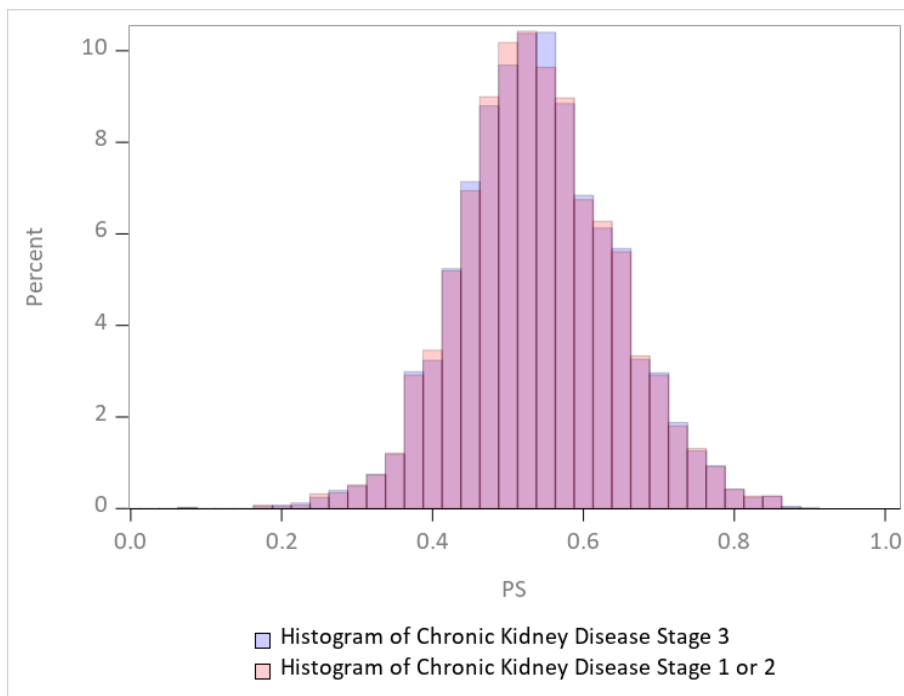


Figure 1h. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Unadjusted Propensity Score Distribution

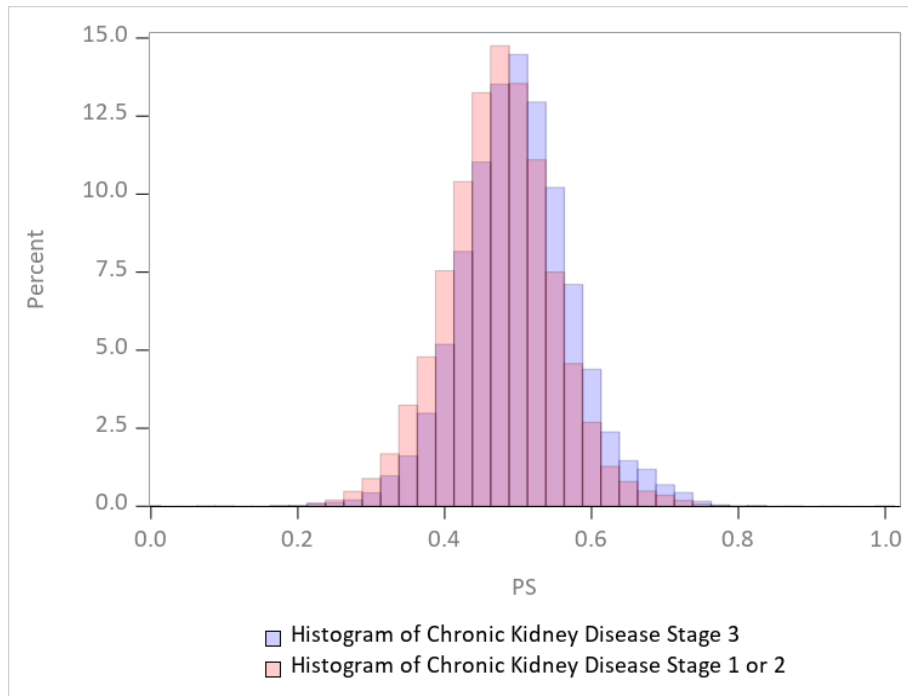


Figure 1h. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

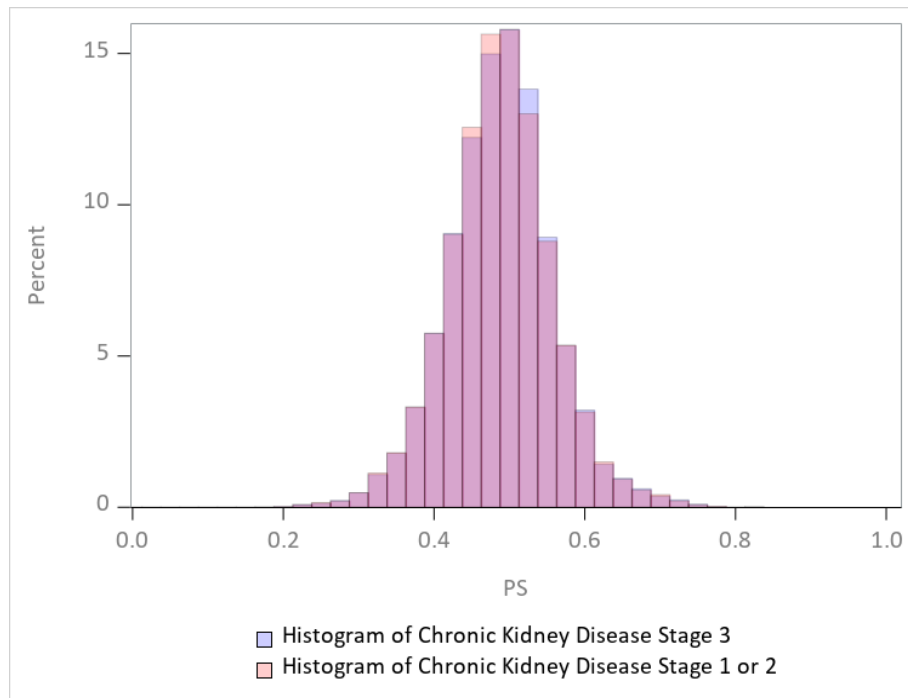


Figure 1i. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Unadjusted Propensity Score Distribution

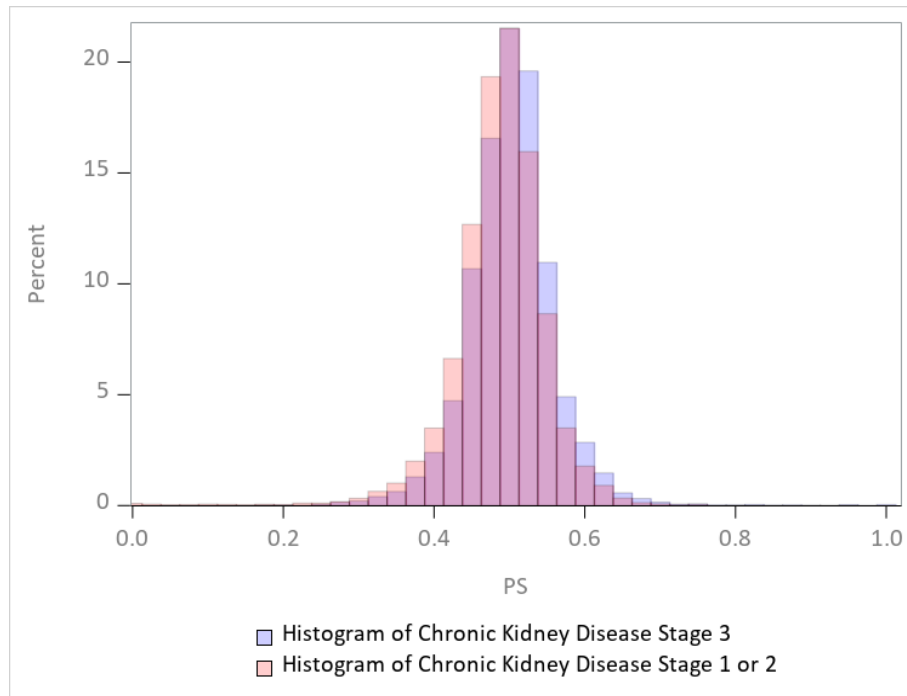


Figure 1i. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

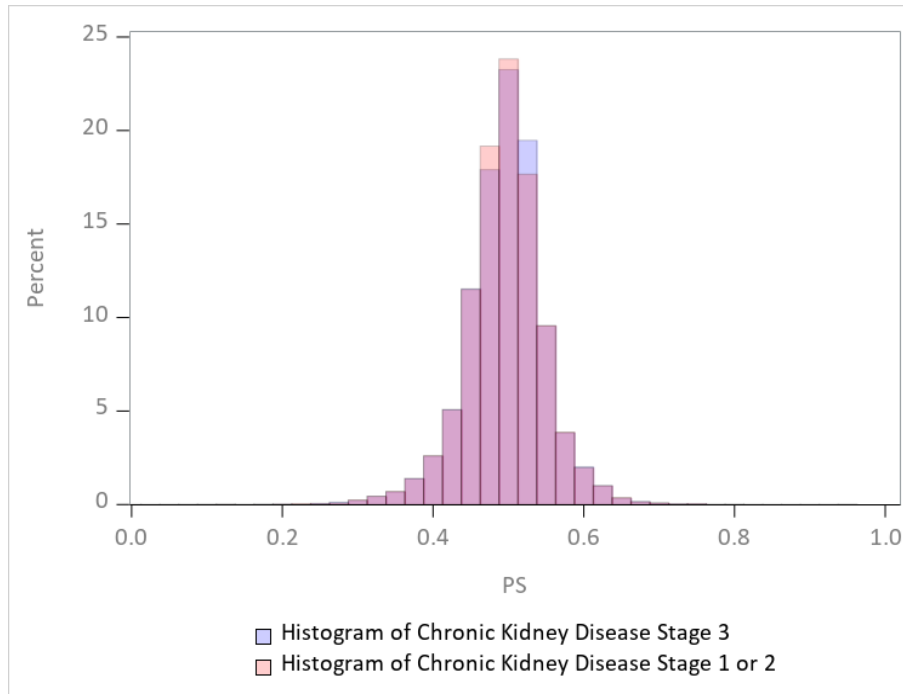


Figure 2a. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Unadjusted Propensity Score Distribution

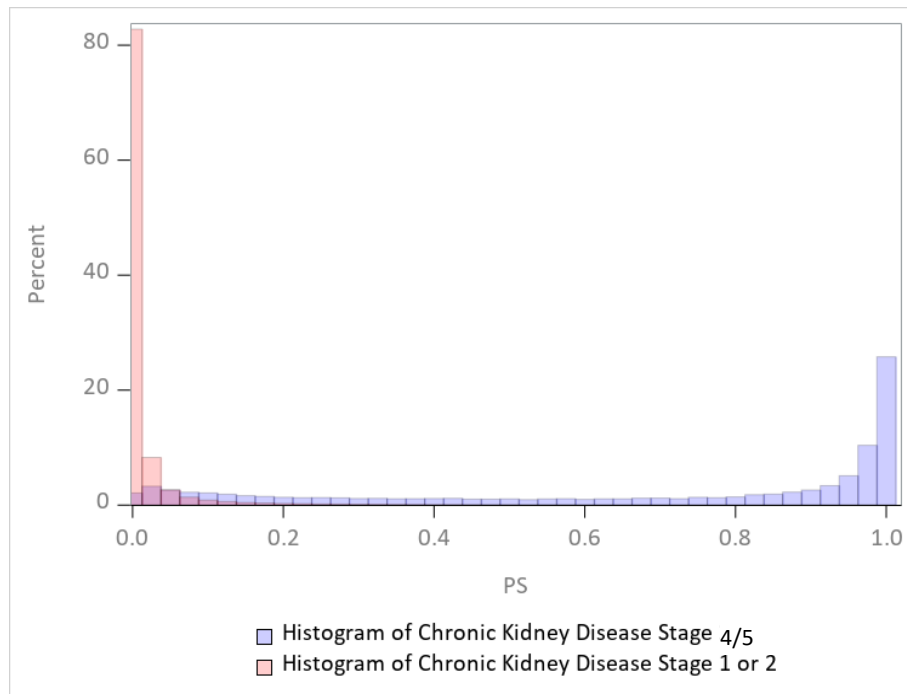


Figure 2a. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

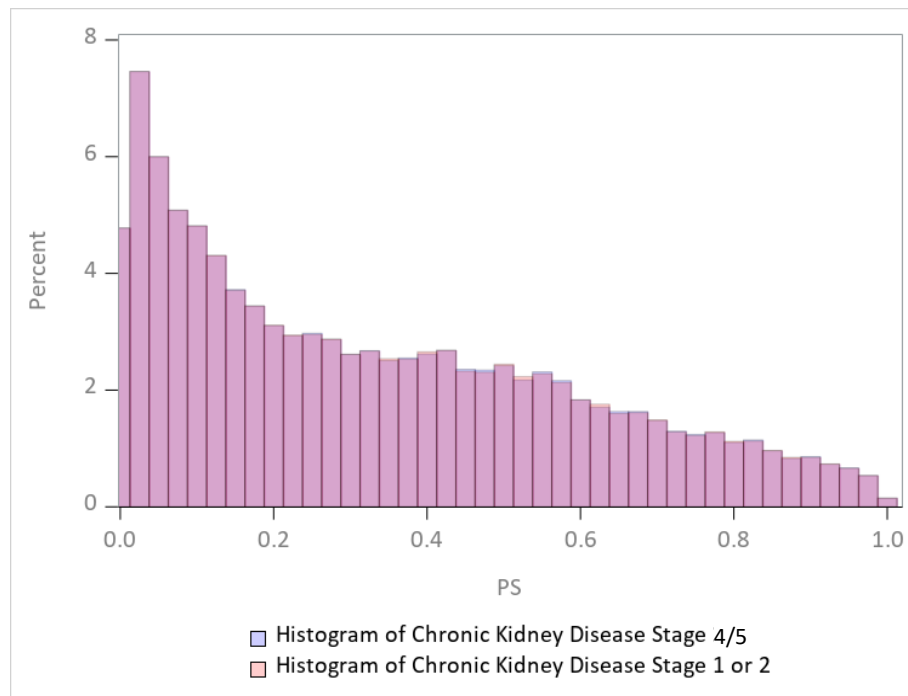


Figure 2b. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Unadjusted Propensity Score Distribution

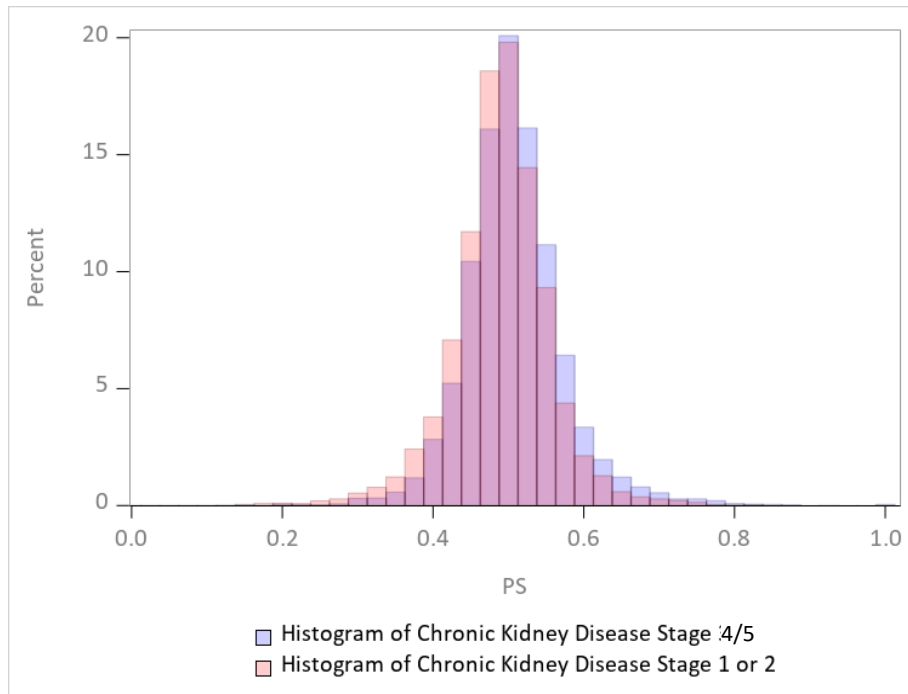


Figure 2b. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

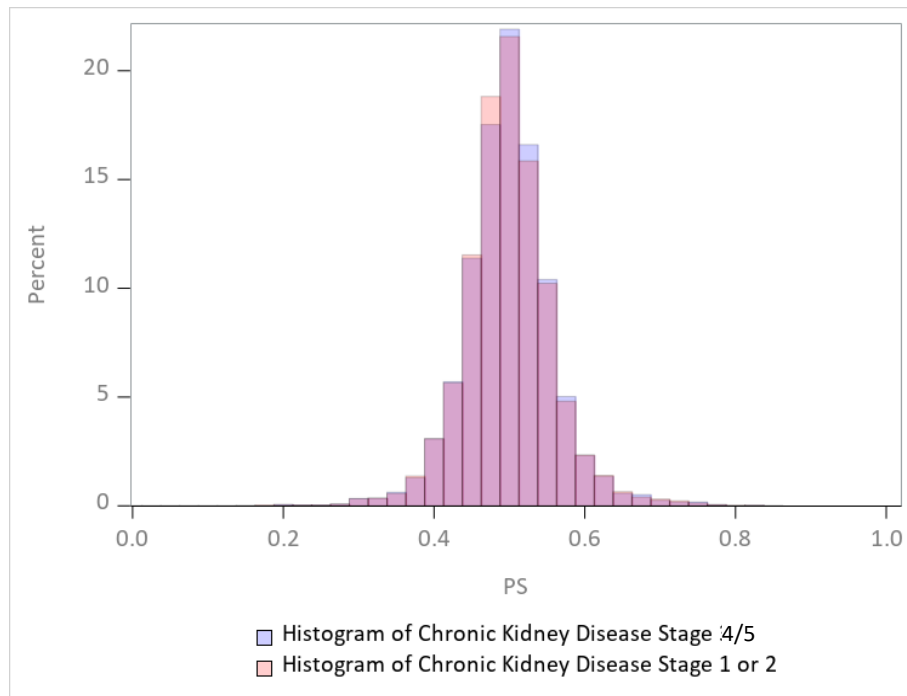


Figure 2c. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Unadjusted Propensity Score Distribution

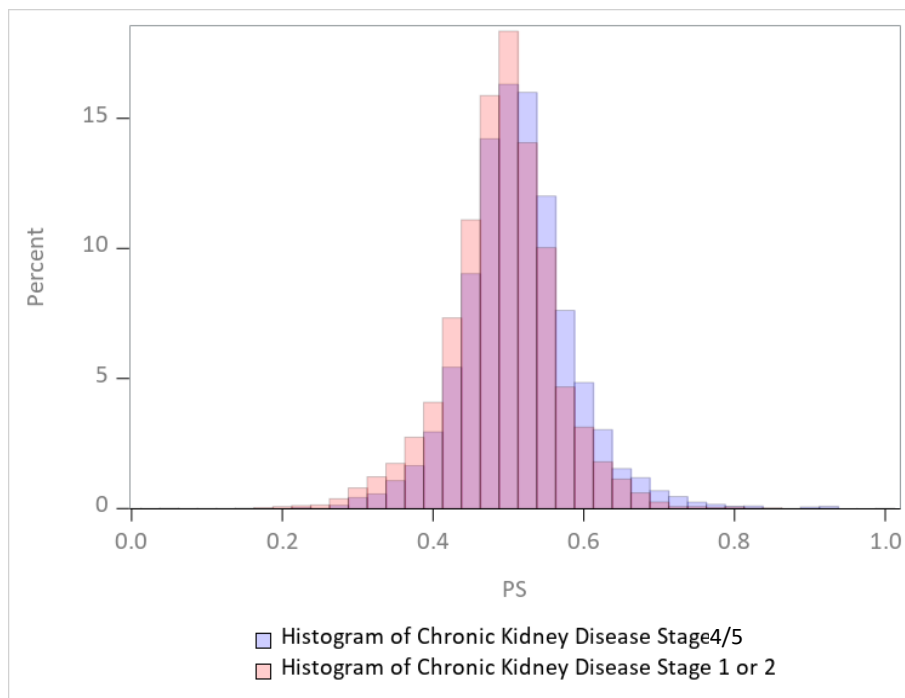


Figure 2c. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

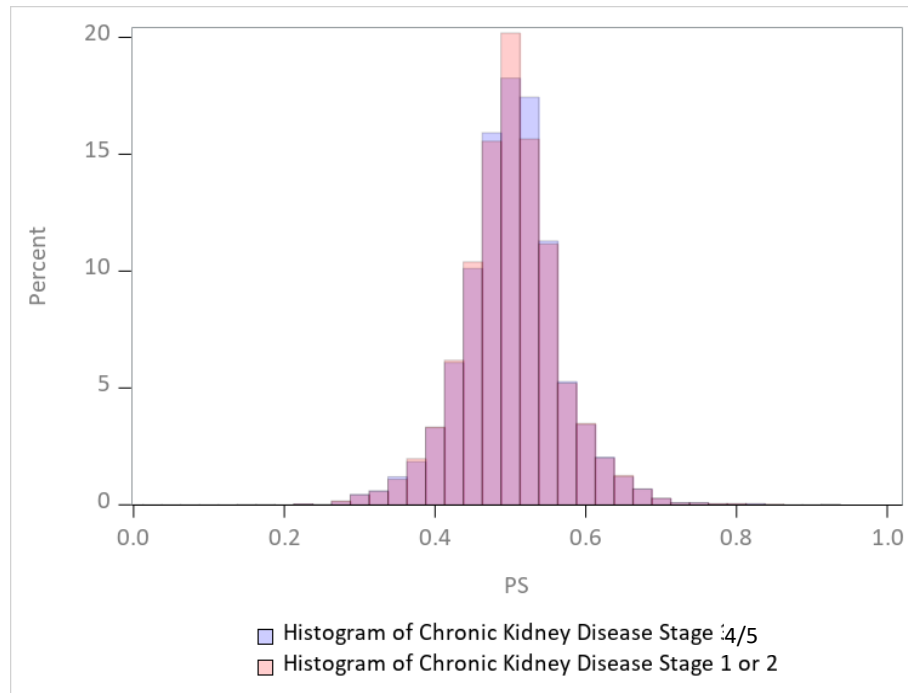
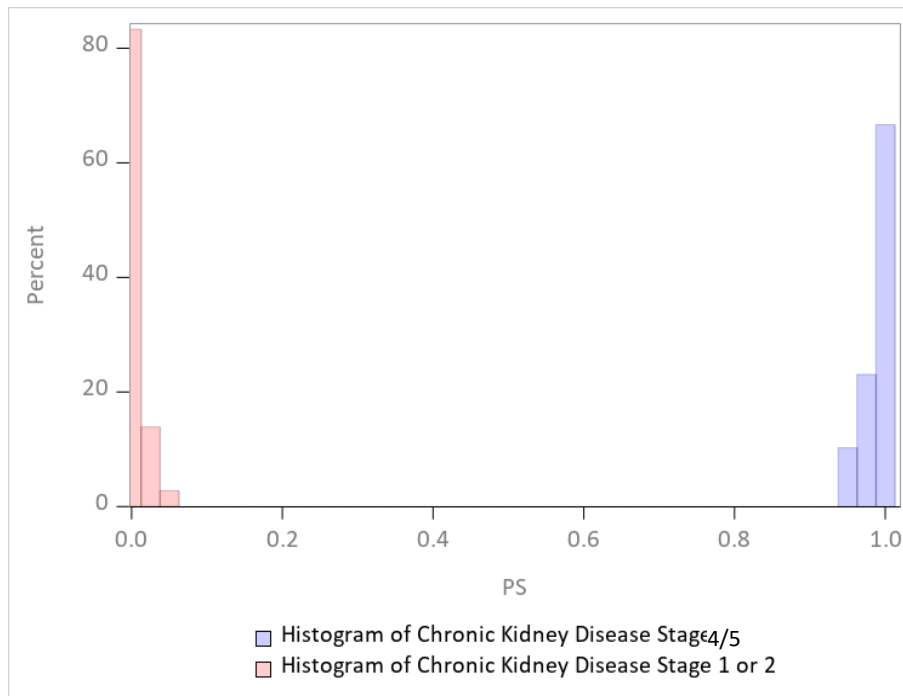


Figure 2d. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Unadjusted Propensity Score Distribution



Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

There were 0 patients in the adjusted analysis; no histogram could be produced.

Figure 2e. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Unadjusted Propensity Score Distribution

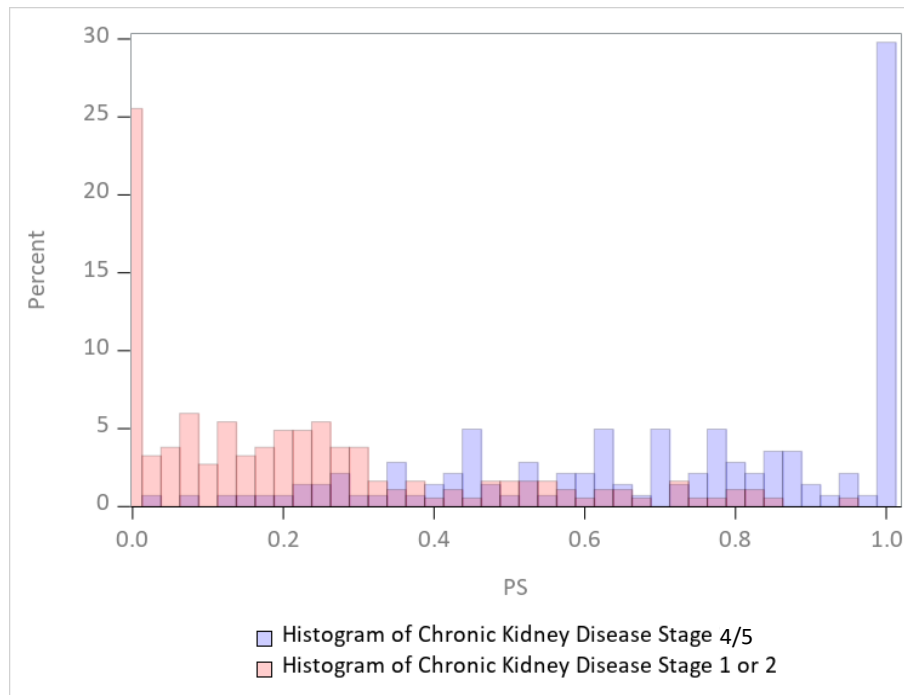


Figure 2e. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

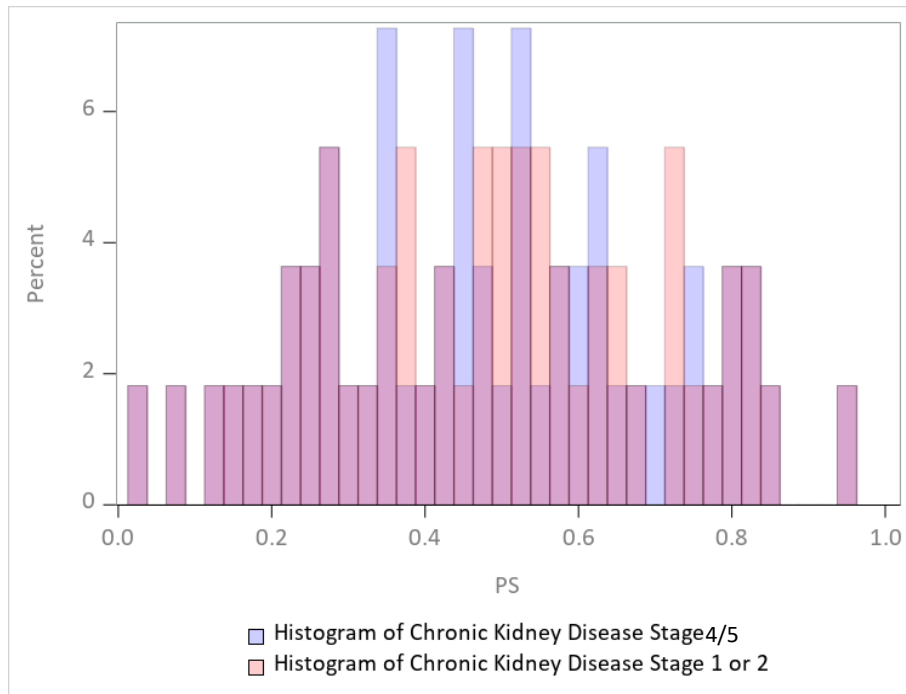


Figure 2f. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Unadjusted Propensity Score Distribution

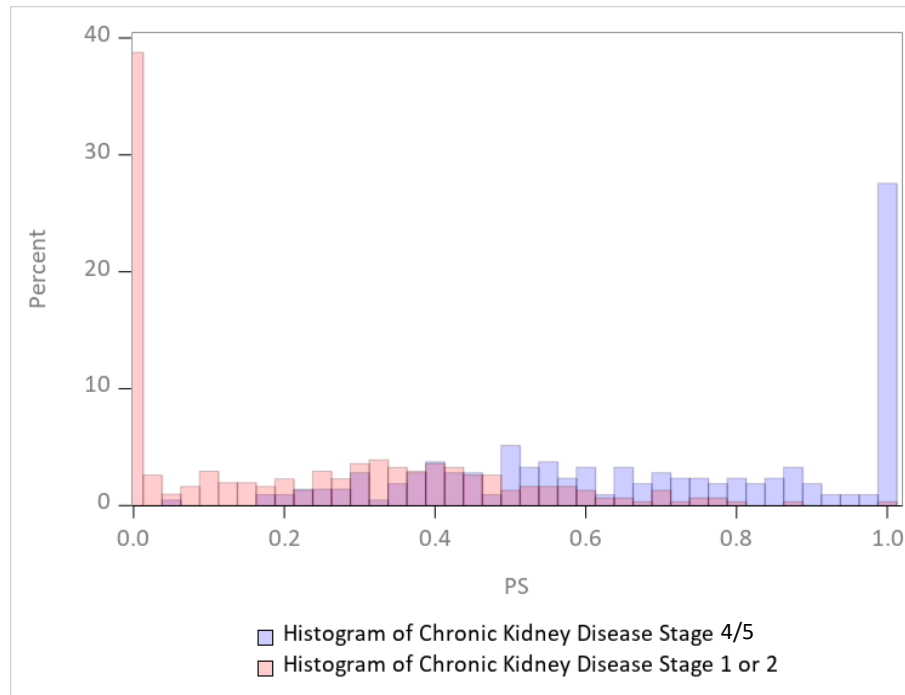


Figure 2f. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

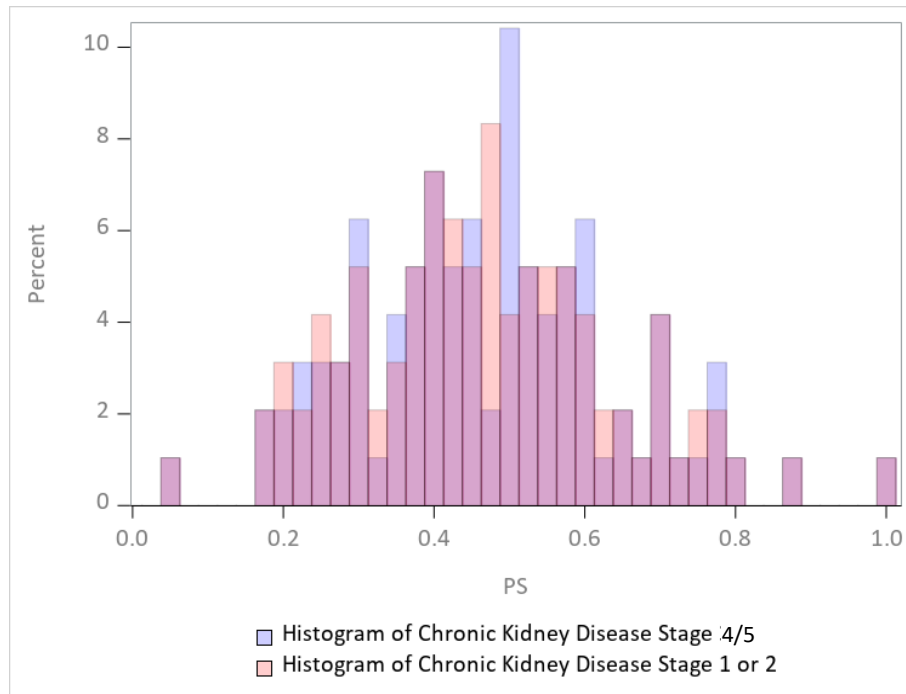


Figure 2g. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Unadjusted Propensity Score Distribution

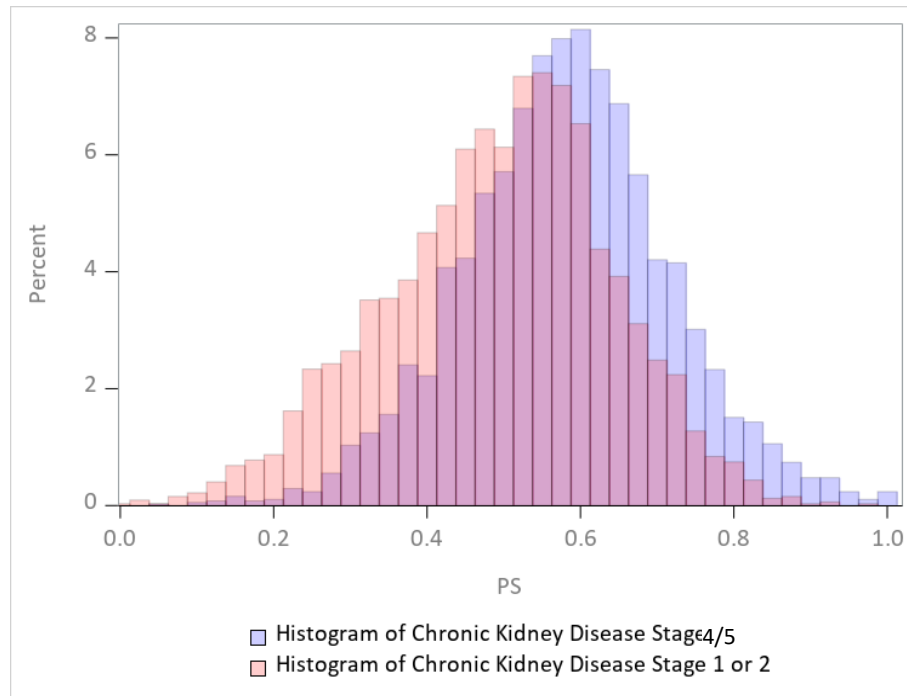


Figure 2g. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

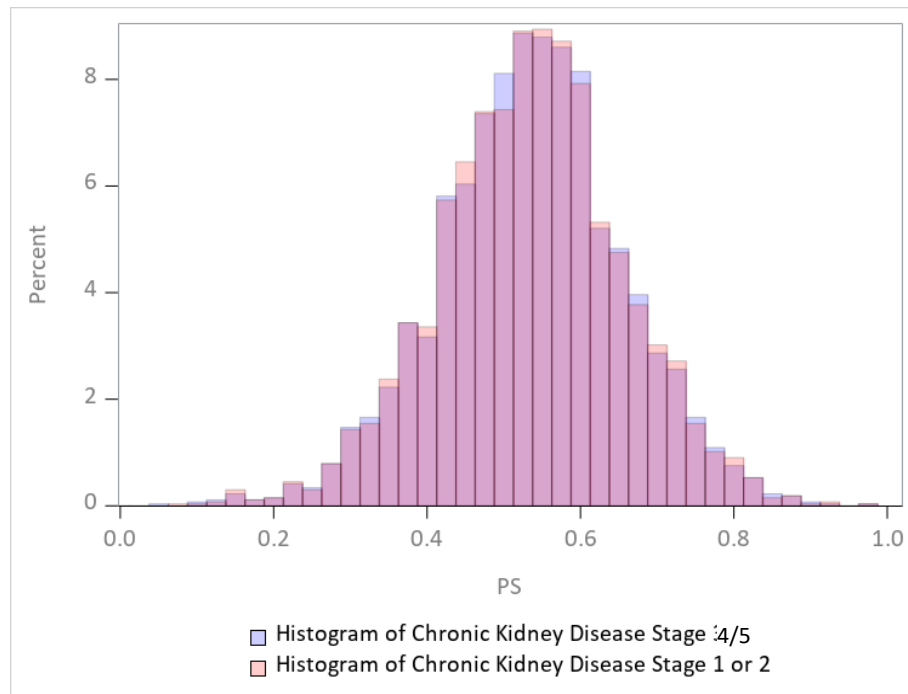


Figure 2h. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Unadjusted Propensity Score Distribution

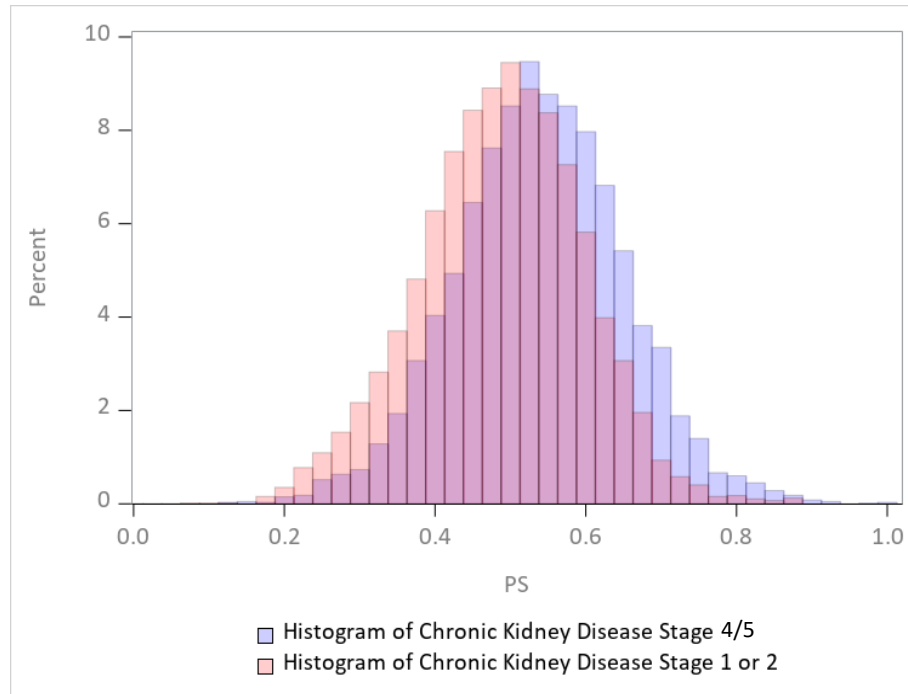


Figure 2h. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

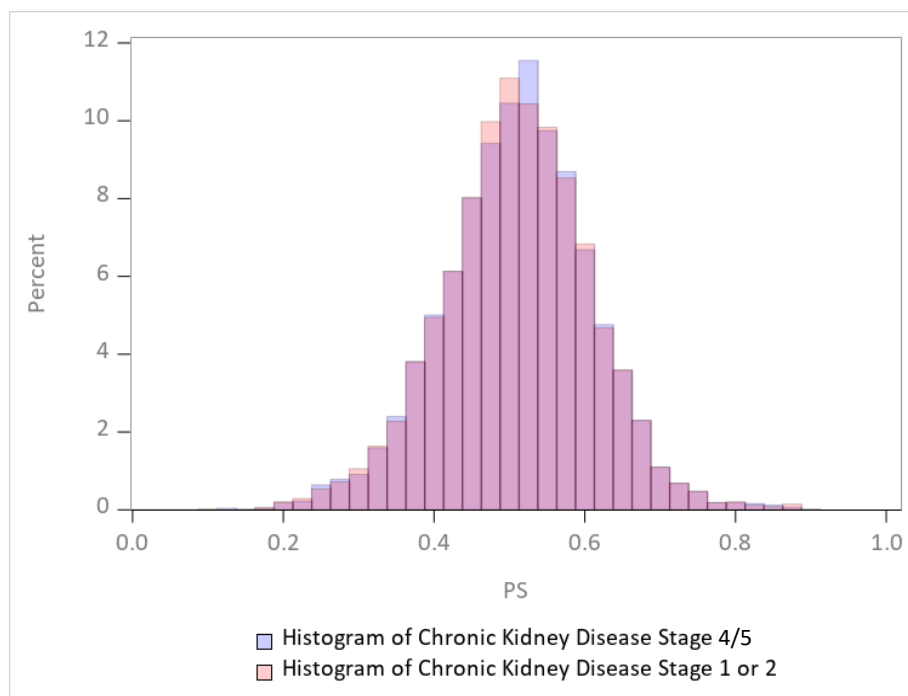


Figure 2i. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Unadjusted Propensity Score Distribution

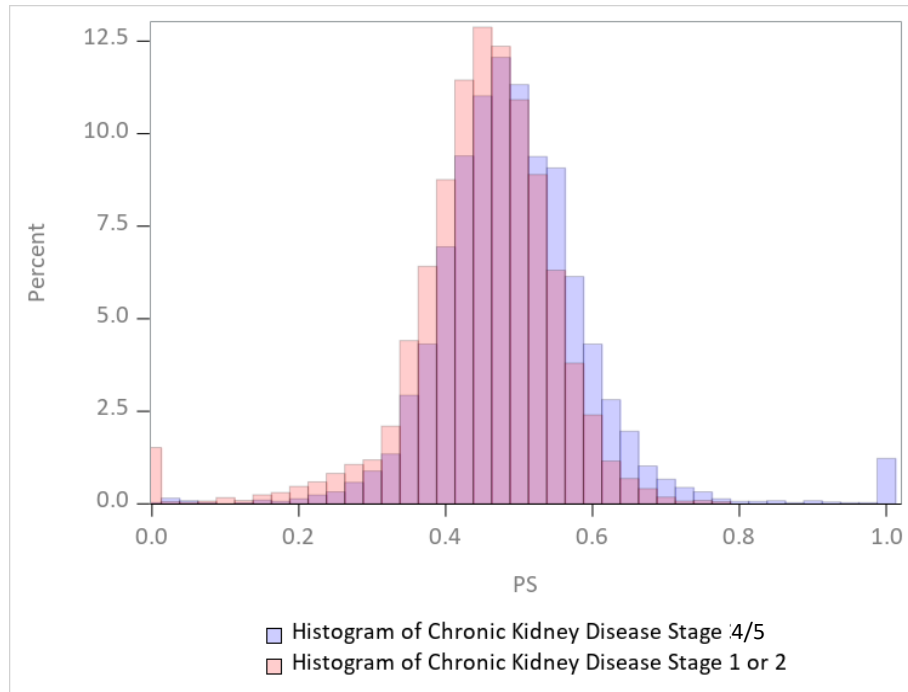


Figure 2i. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

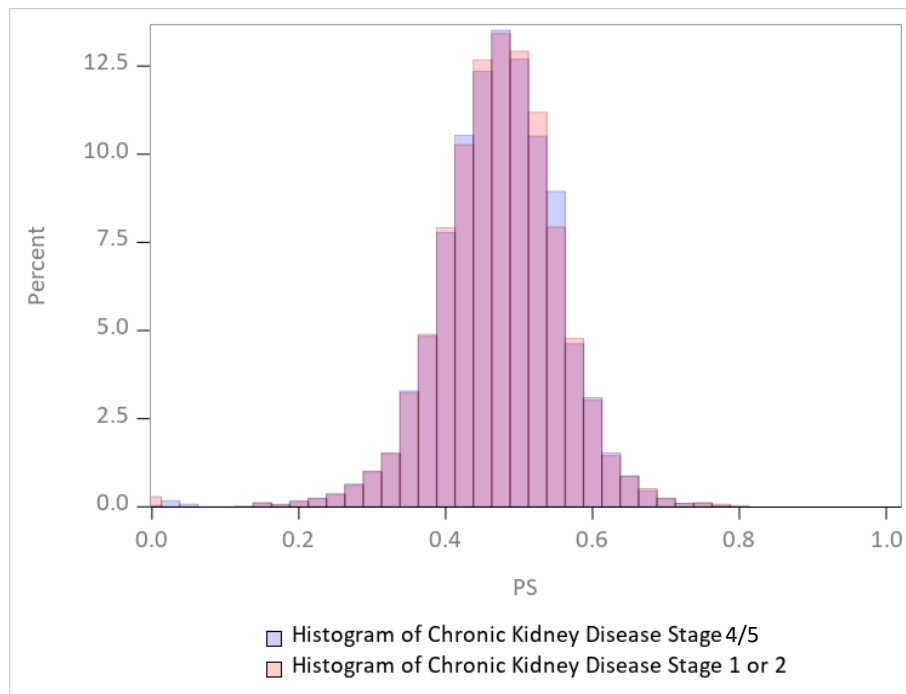


Figure 3a. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Unadjusted Propensity Score Distribution

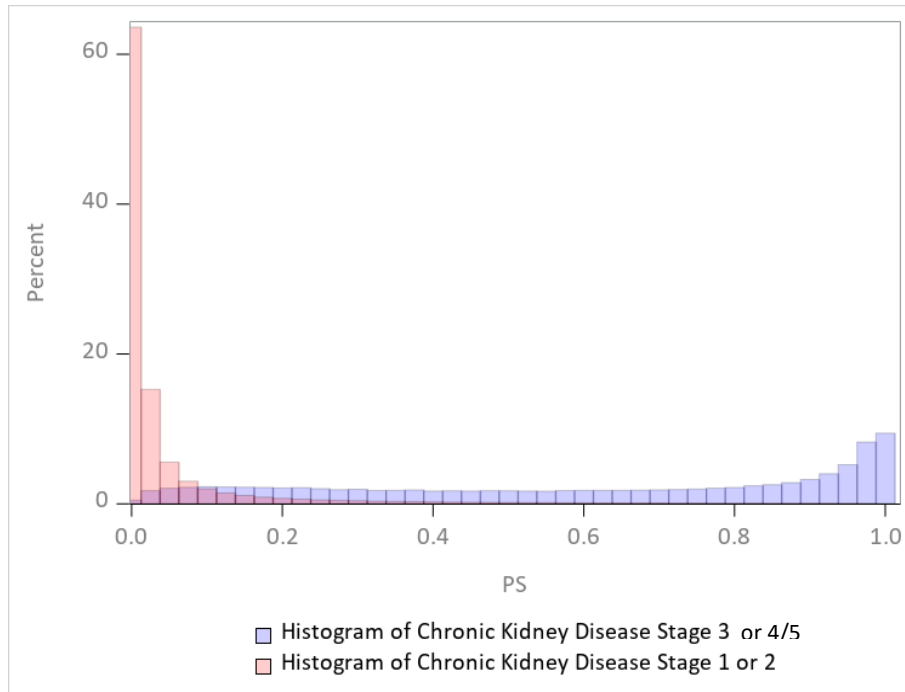


Figure 3a. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

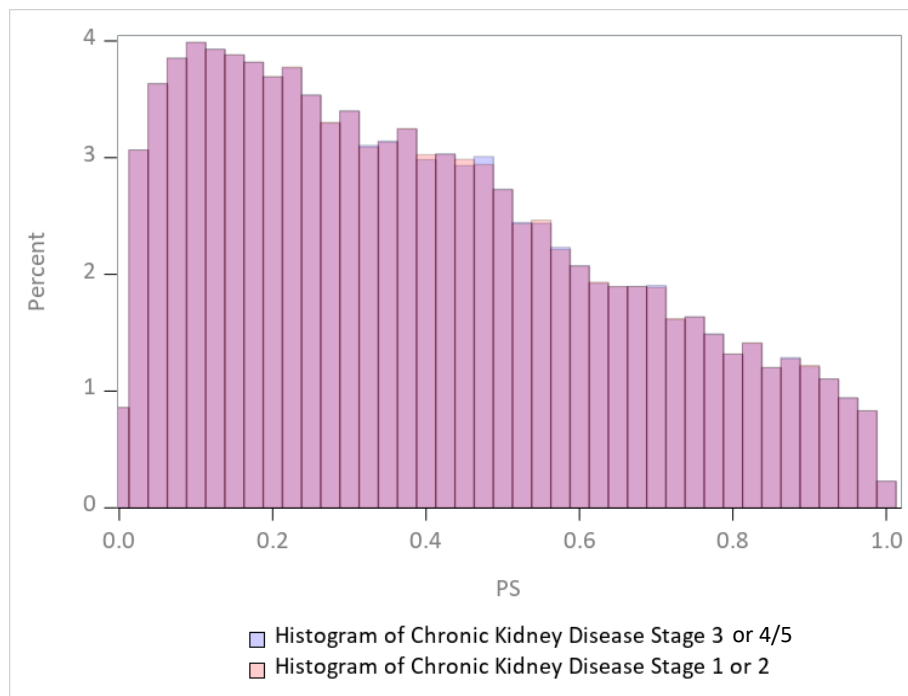


Figure 3b. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Unadjusted Propensity Score Distribution

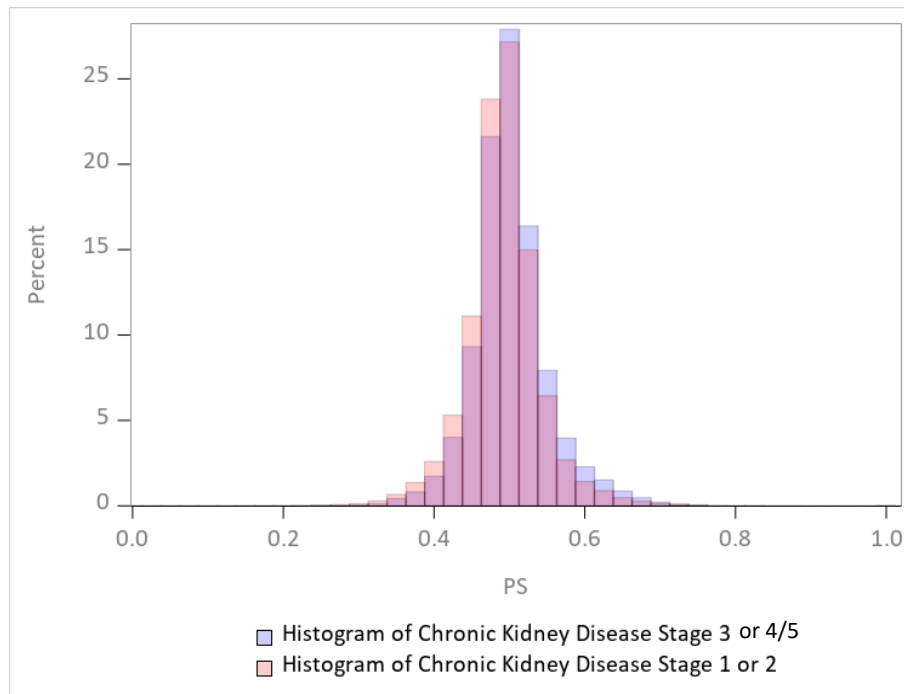


Figure 3b. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

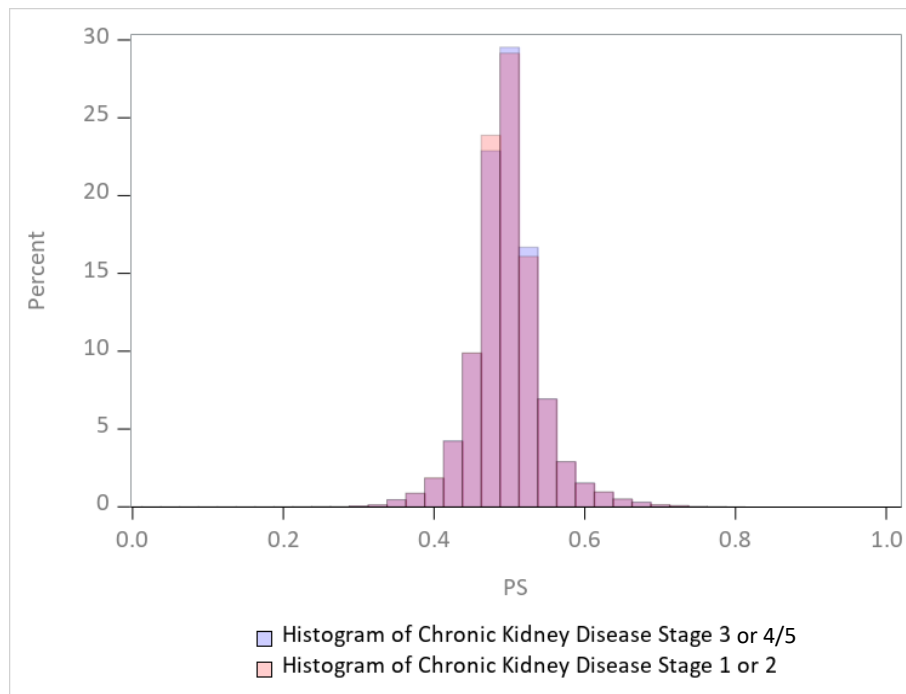


Figure 3c. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Unadjusted Propensity Score Distribution

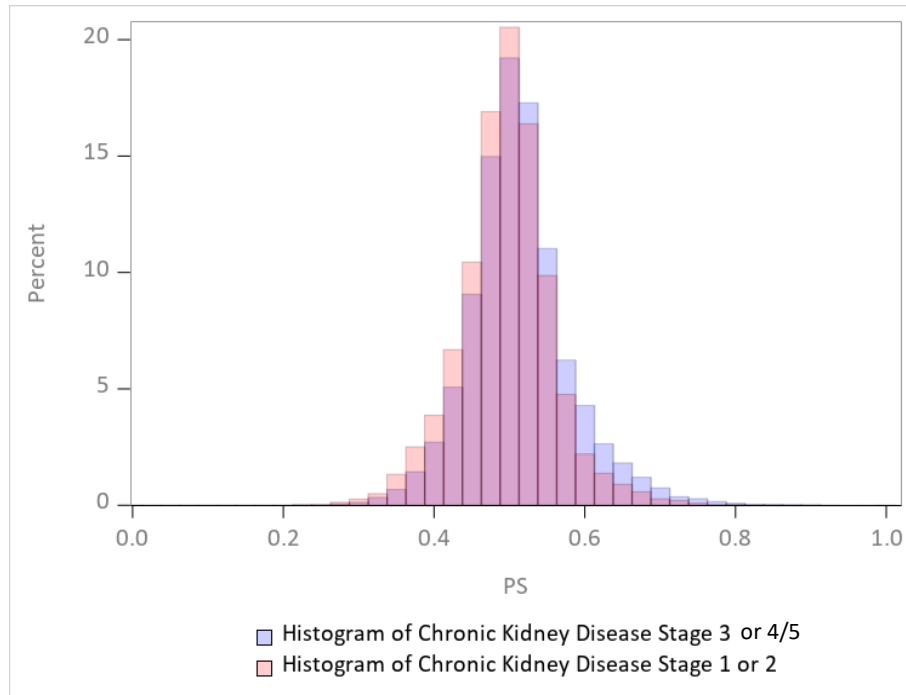


Figure 3c. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

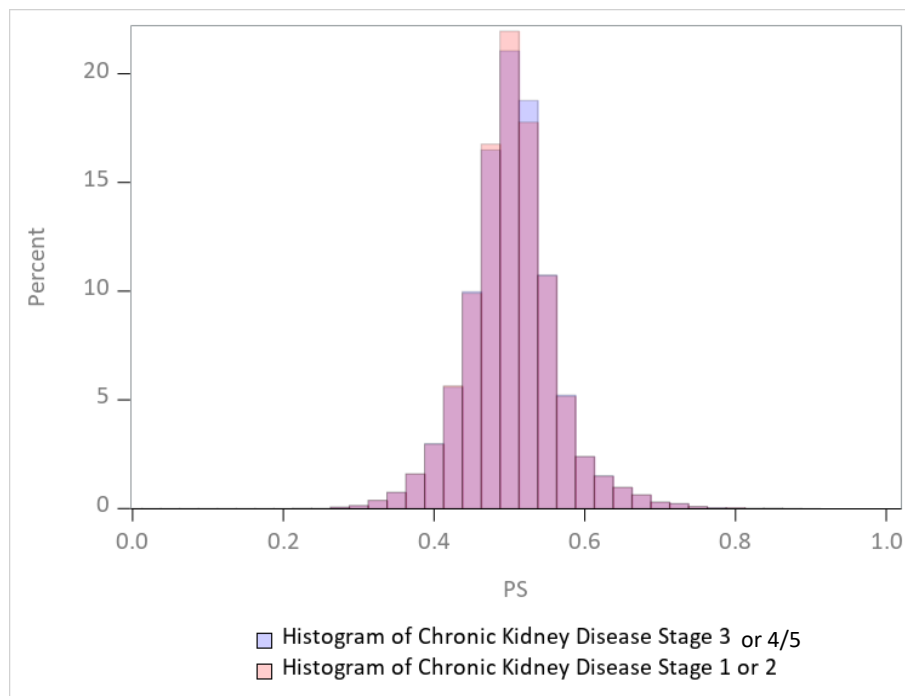


Figure 3d. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Unadjusted Propensity Score Distribution

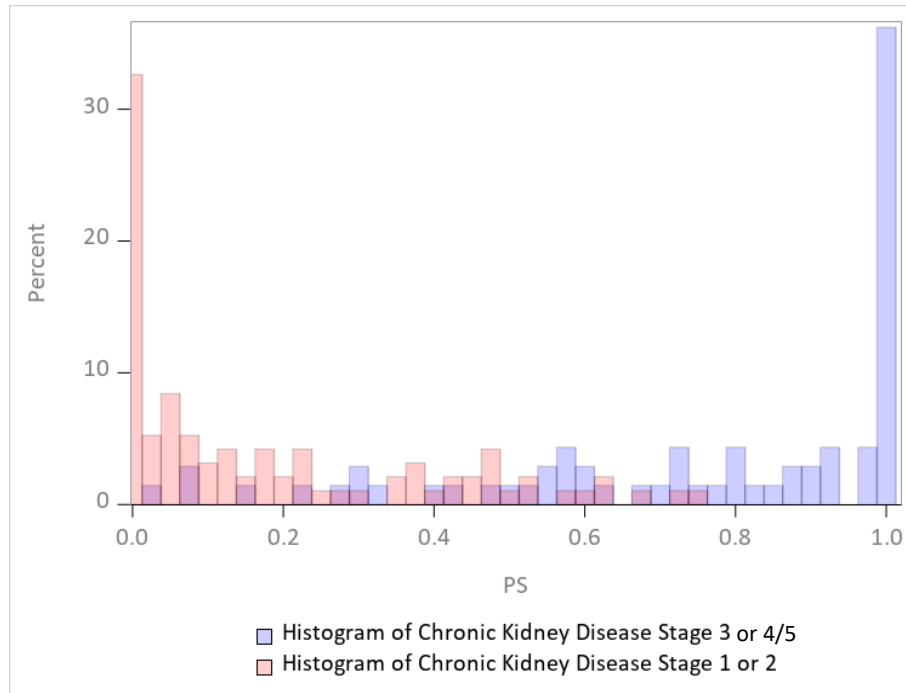


Figure 3d. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

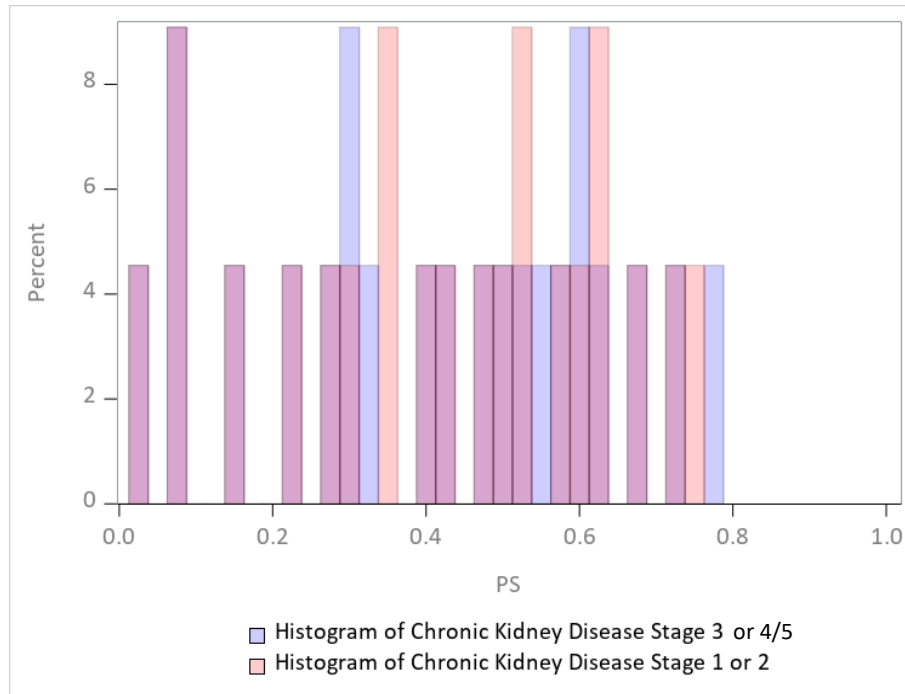


Figure 3e. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Unadjusted Propensity Score Distribution

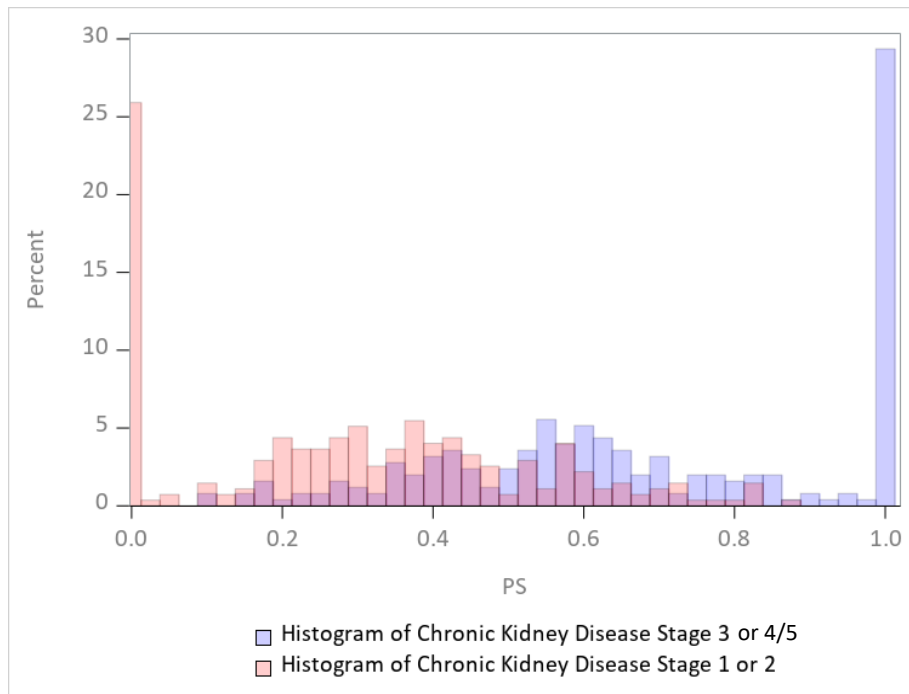


Figure 3e. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 12-18 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

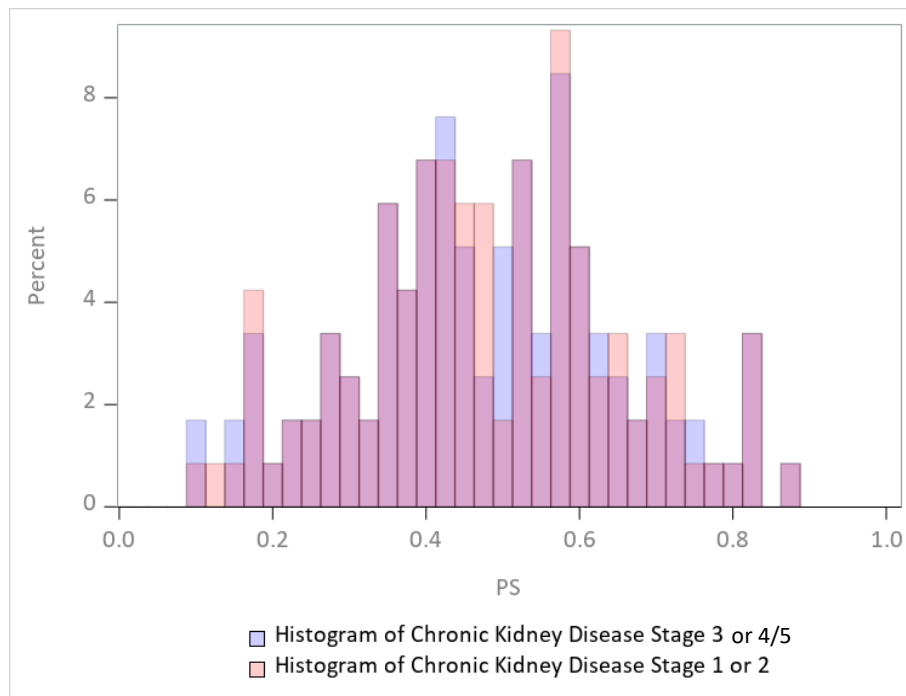


Figure 3f. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Unadjusted Propensity Score Distribution

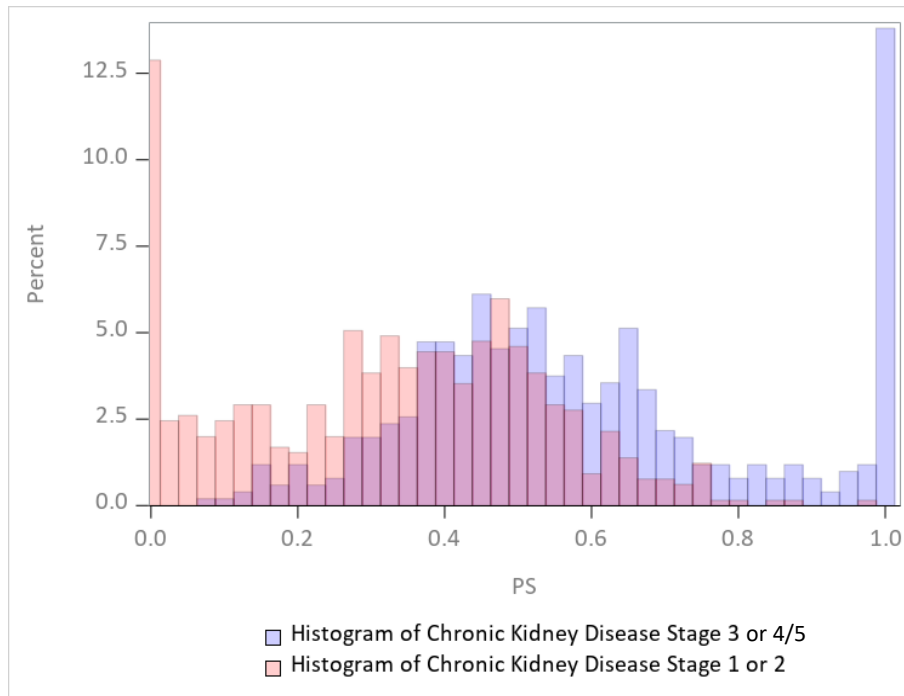


Figure 3f. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

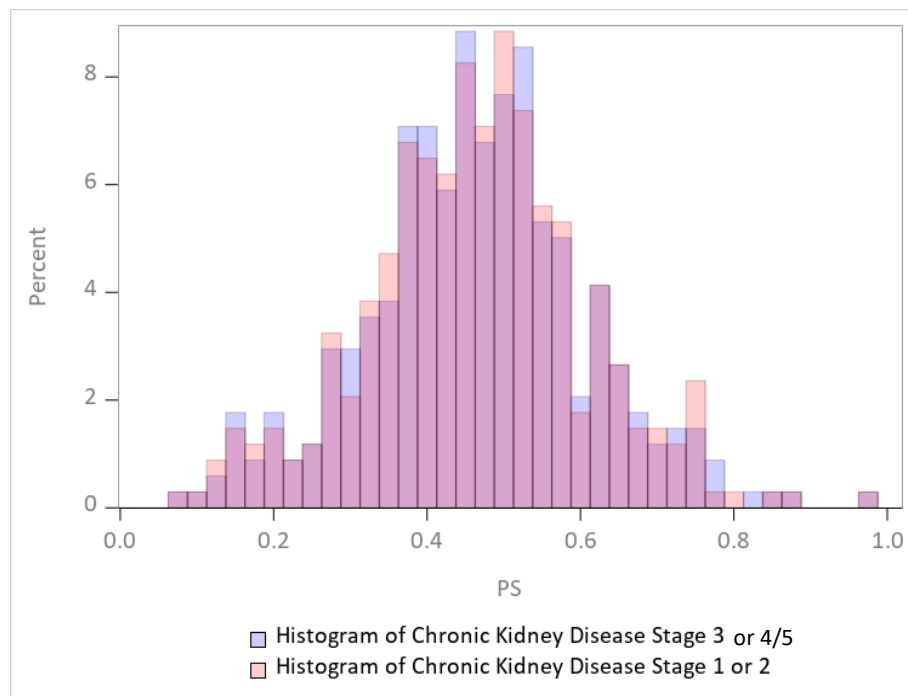


Figure 3g. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Unadjusted Propensity Score Distribution

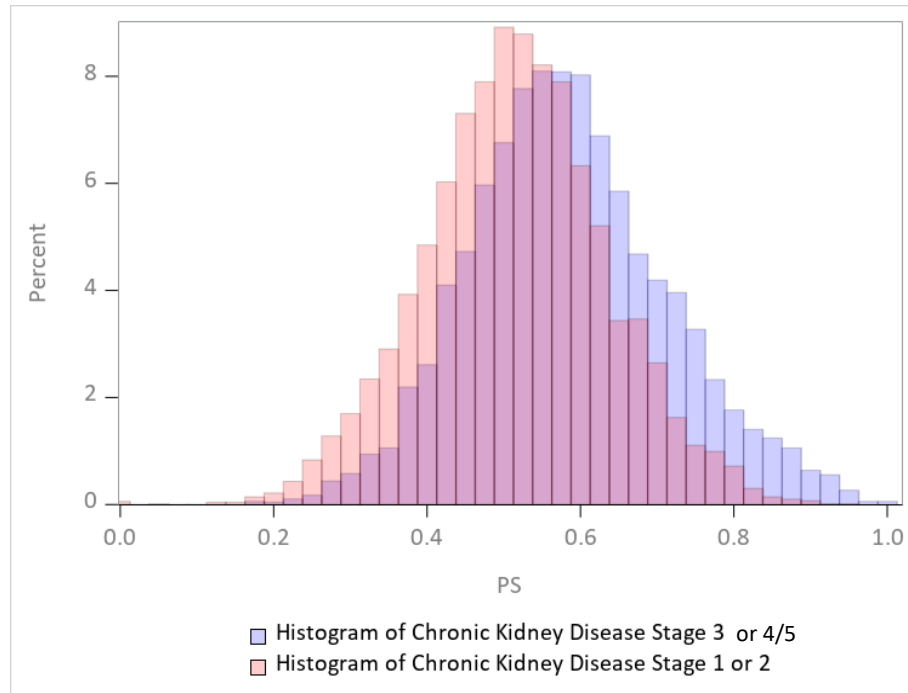


Figure 3g. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

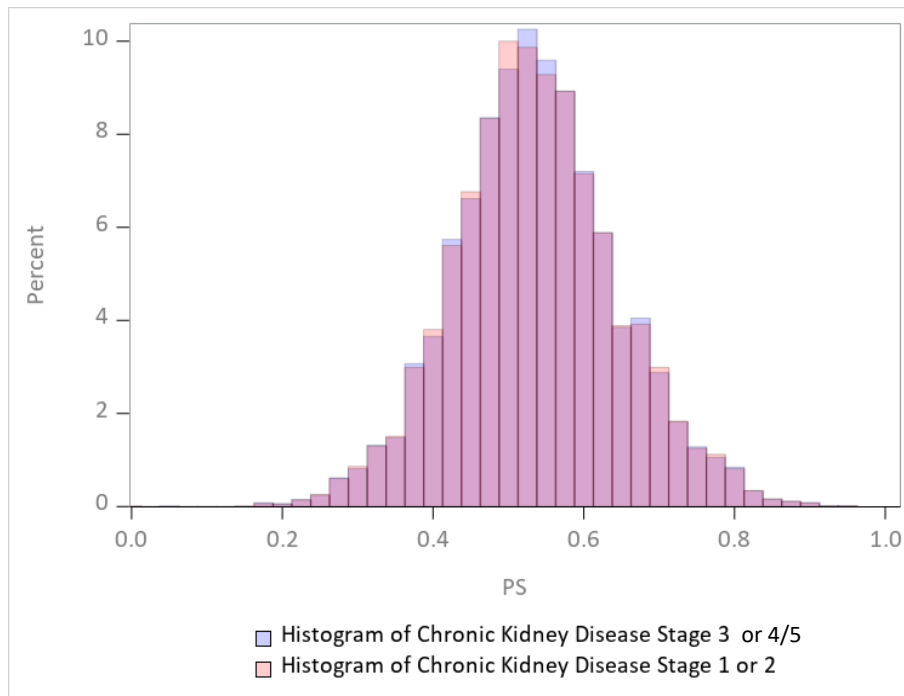


Figure 3h. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Unadjusted Propensity Score Distribution

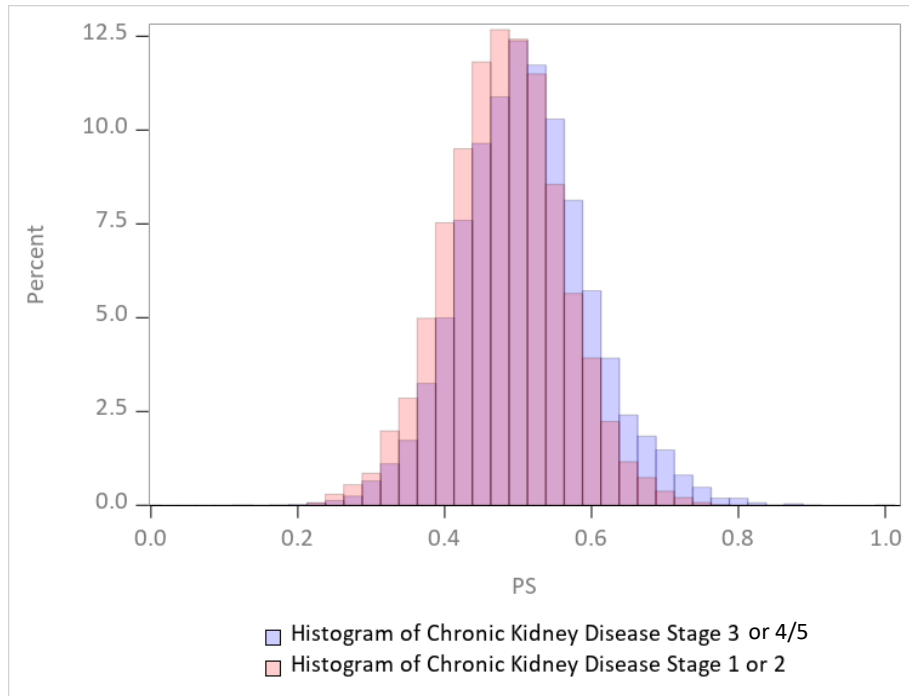


Figure 3h. Histograms Depicting Propensity Score Distributions Before and After Adjustment for Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

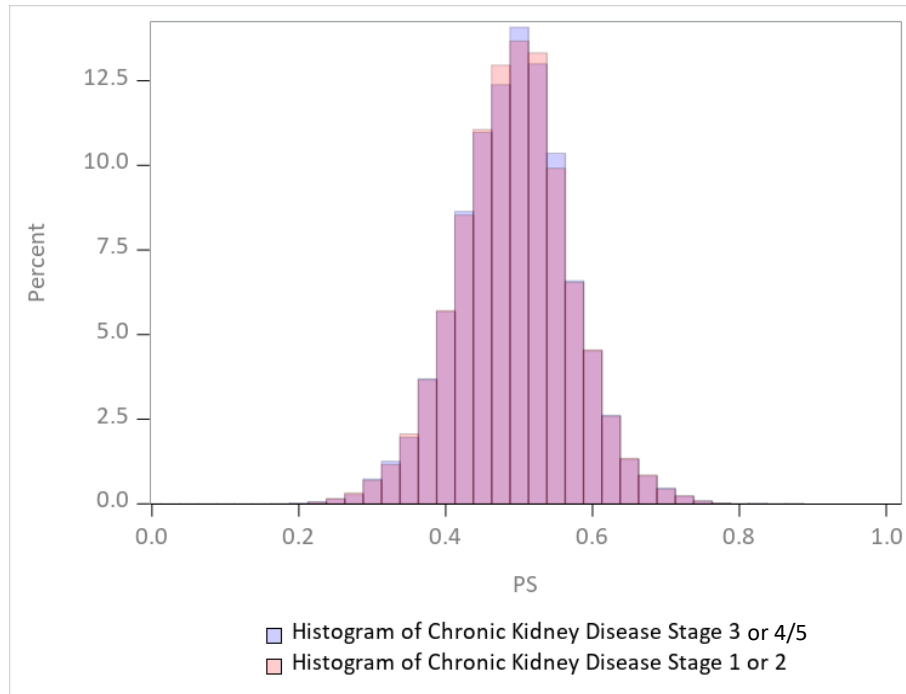


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Unadjusted Propensity Score Distribution

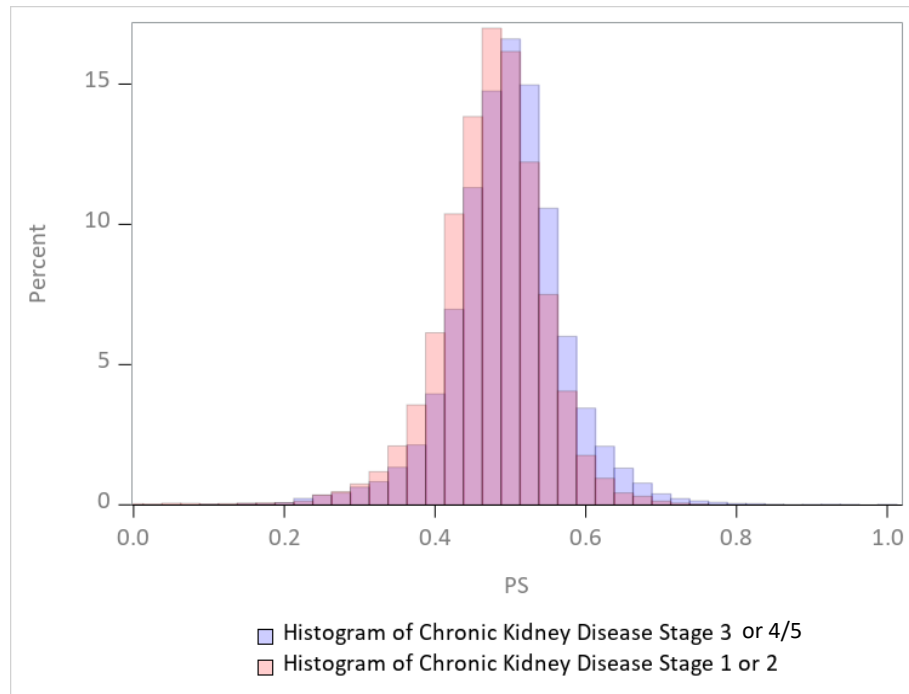


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Propensity Score Fixed Ratio 1:1 Adjusted Cohort, Matched Caliper = 0.05

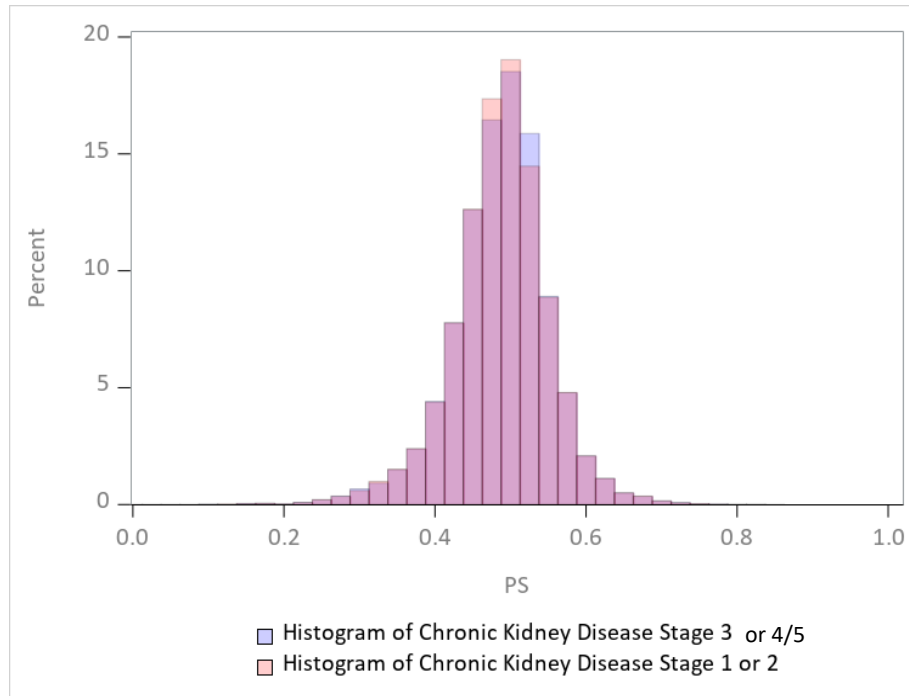
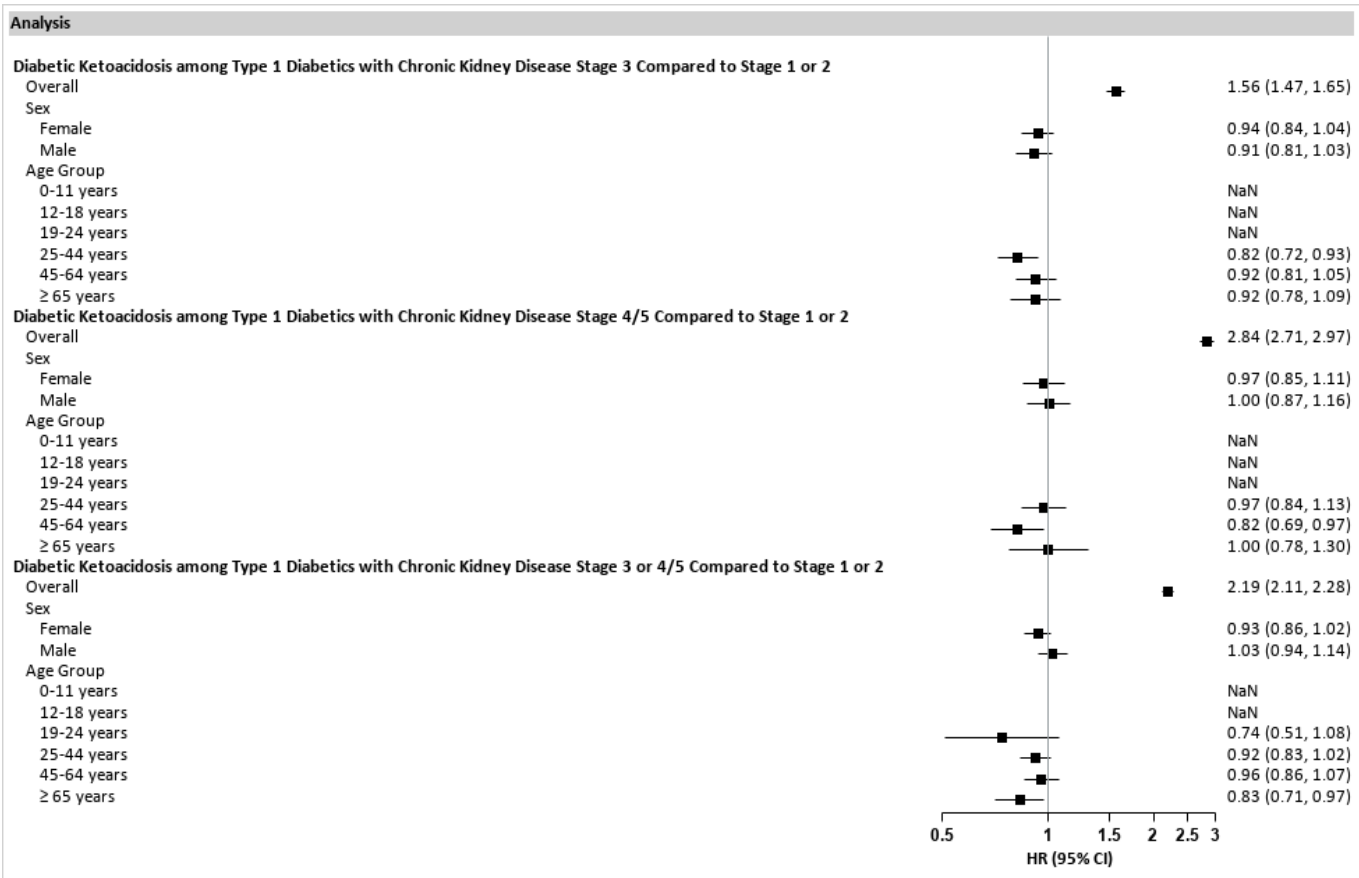
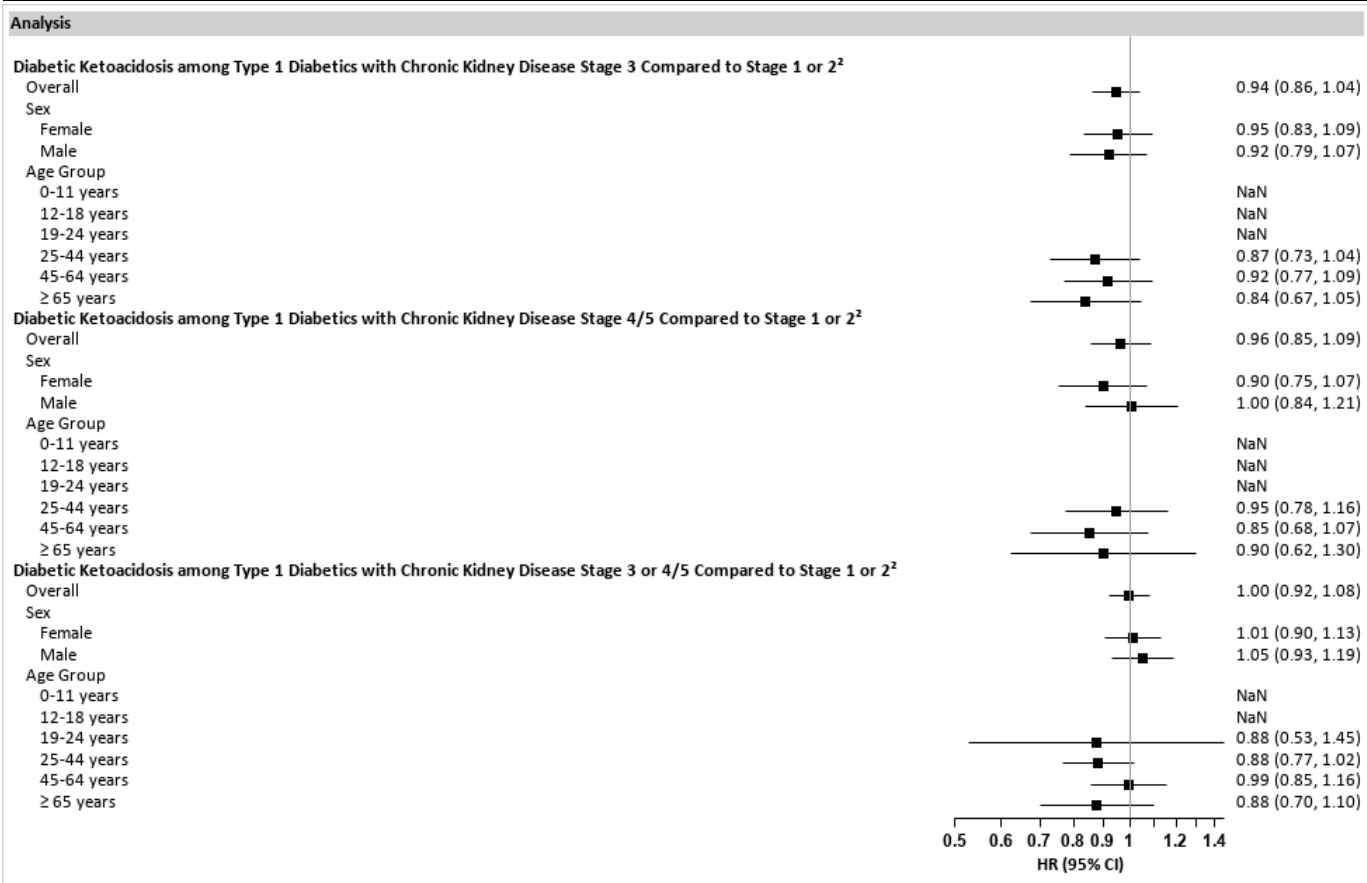


Figure 4a. Forest Plot of Hazard Ratios (HR) and 95% Confidence Intervals (CI) for Site-Adjusted Analyses in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024¹



¹Hazard ratio could not be calculated for all analyses

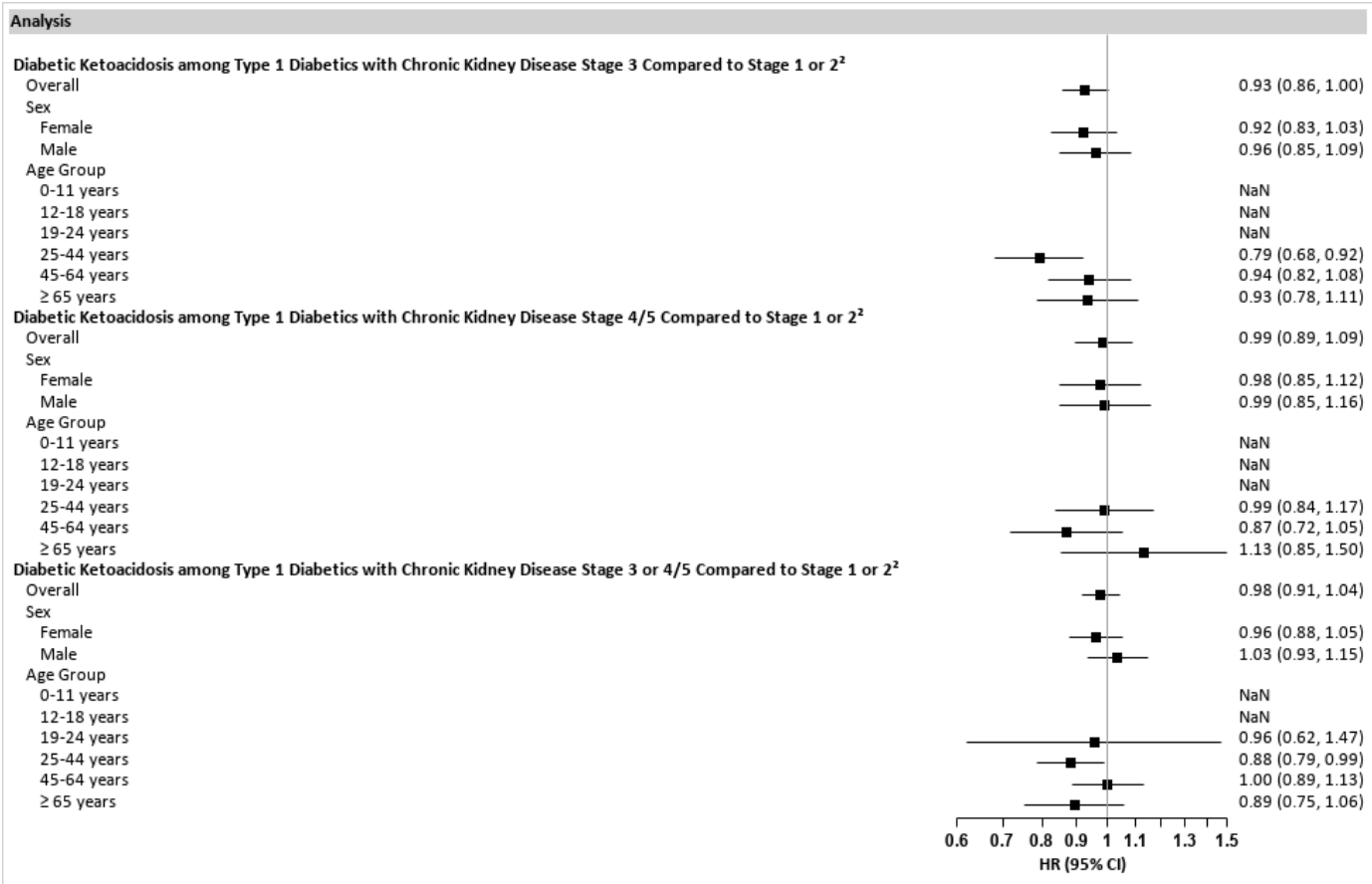
Figure 4b. Forest Plot of Hazard Ratios (HR) and 95% Confidence Intervals (CI) for Propensity Score Matched Conditional Analyses in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024¹



¹Hazard ratio could not be calculated for all analyses

²Fixed Ratio 1:1 Propensity Score Matched Conditional Analysis; Caliper=0.05

Figure 4c. Forest Plot of Hazard Ratios (HR) and 95% Confidence Intervals (CI) for Propensity Score Matched Unconditional Analyses in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024¹



¹Hazard ratio could not be calculated for all analyses

²Fixed Ratio 1:1 Propensity Score Matched Unconditional Analysis; Caliper=0.05

Figure 5a. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

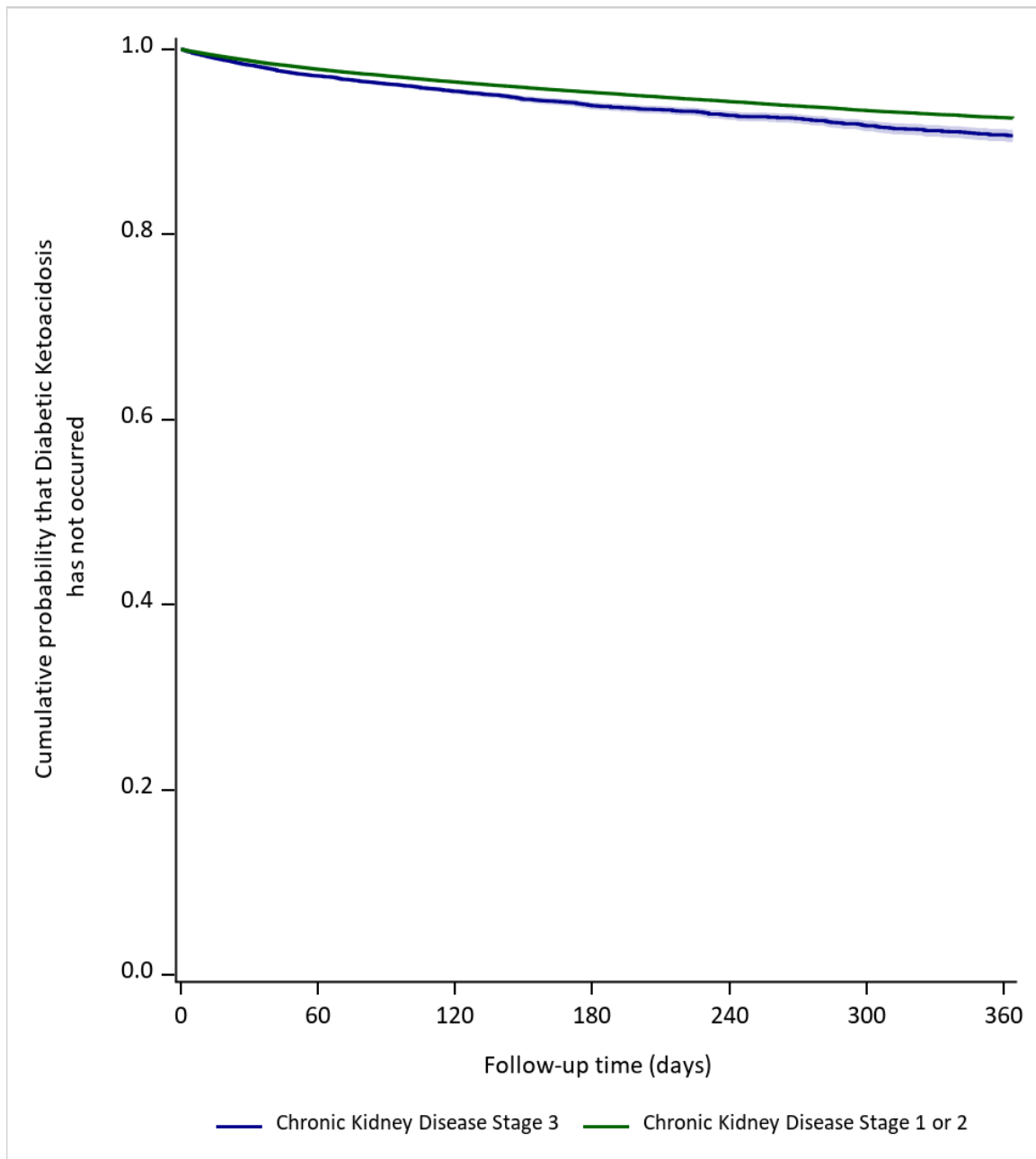


Figure 5b. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

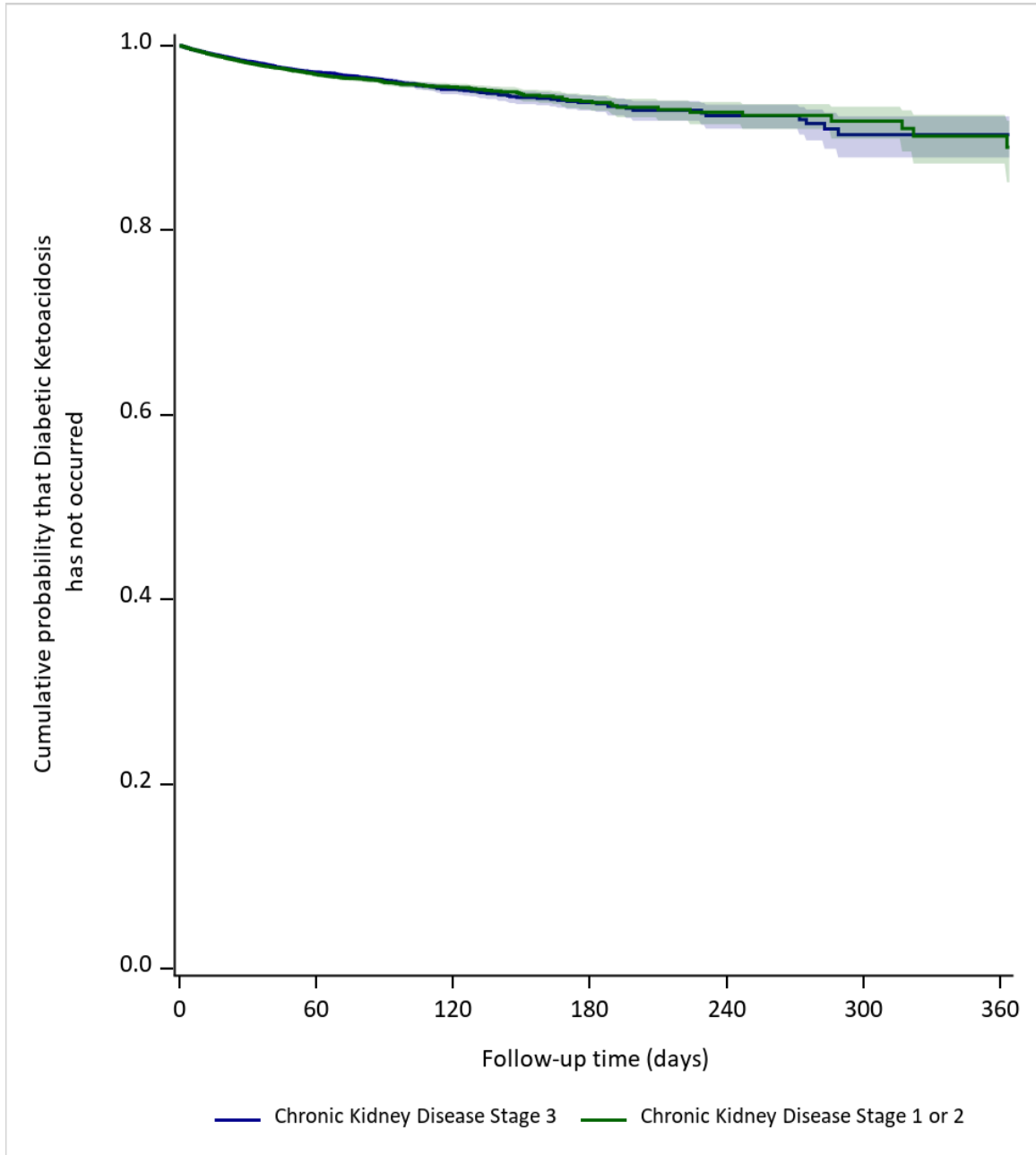


Figure 5c. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

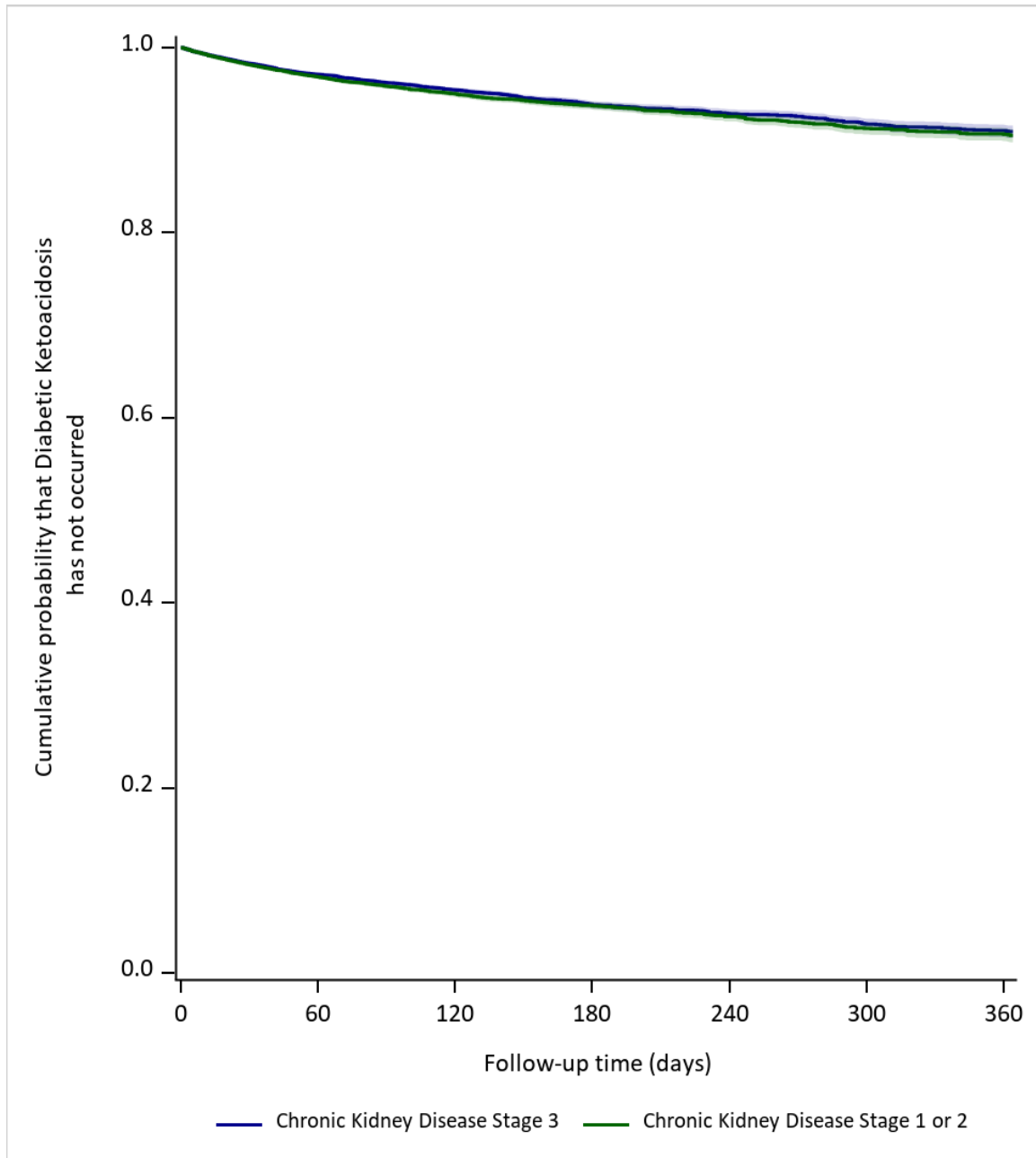


Figure 5d. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

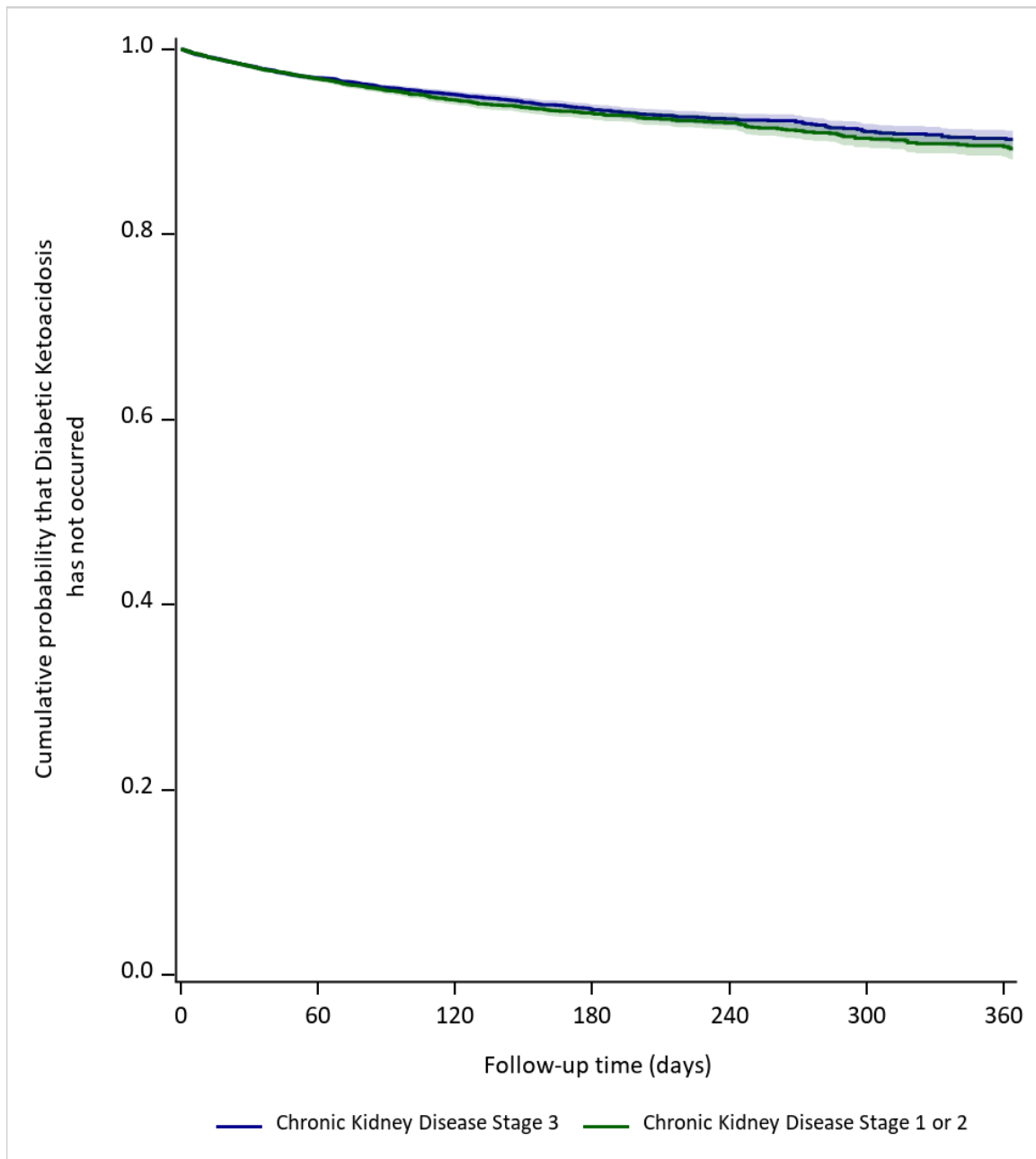


Figure 5e. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

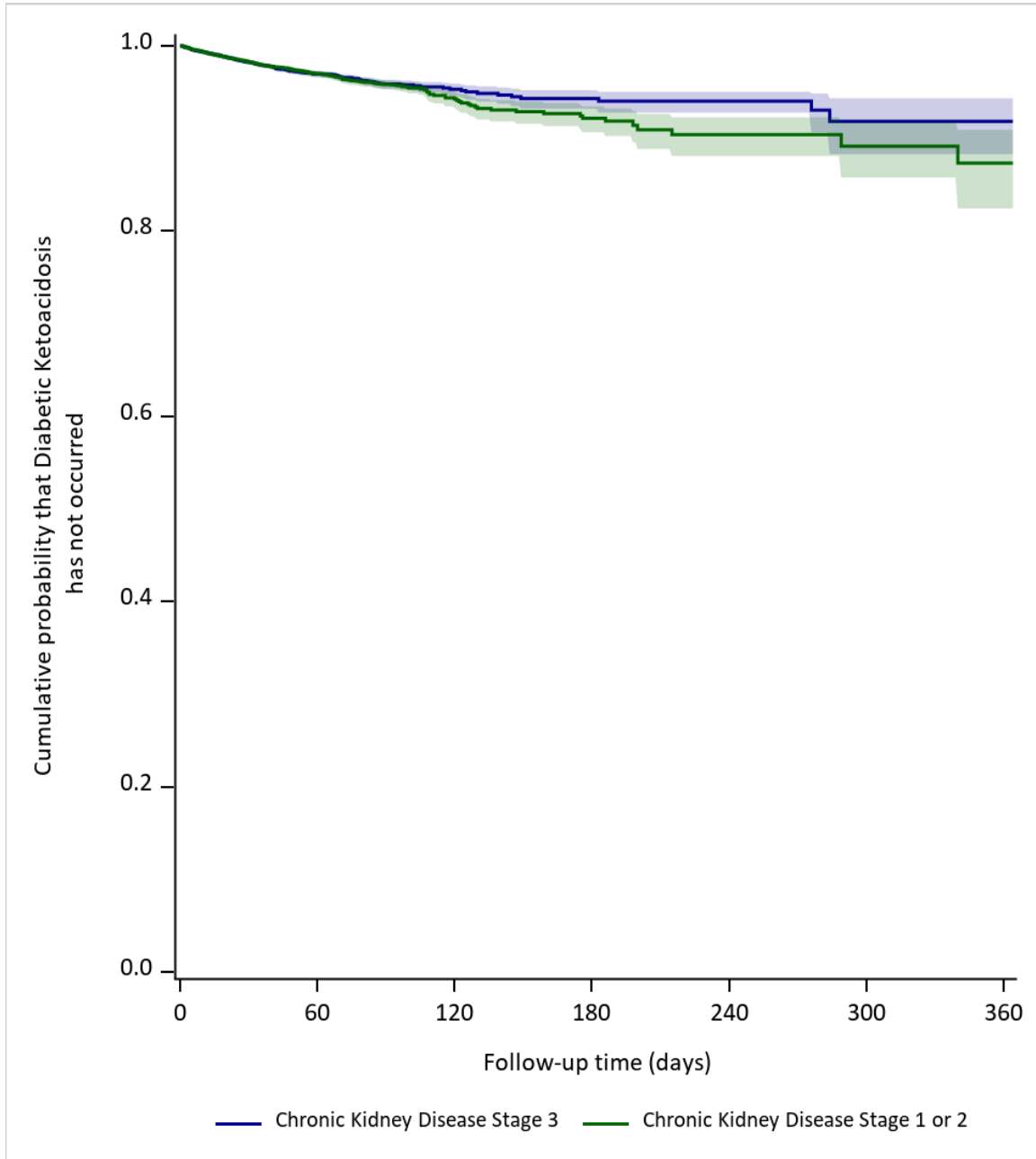


Figure 5f. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

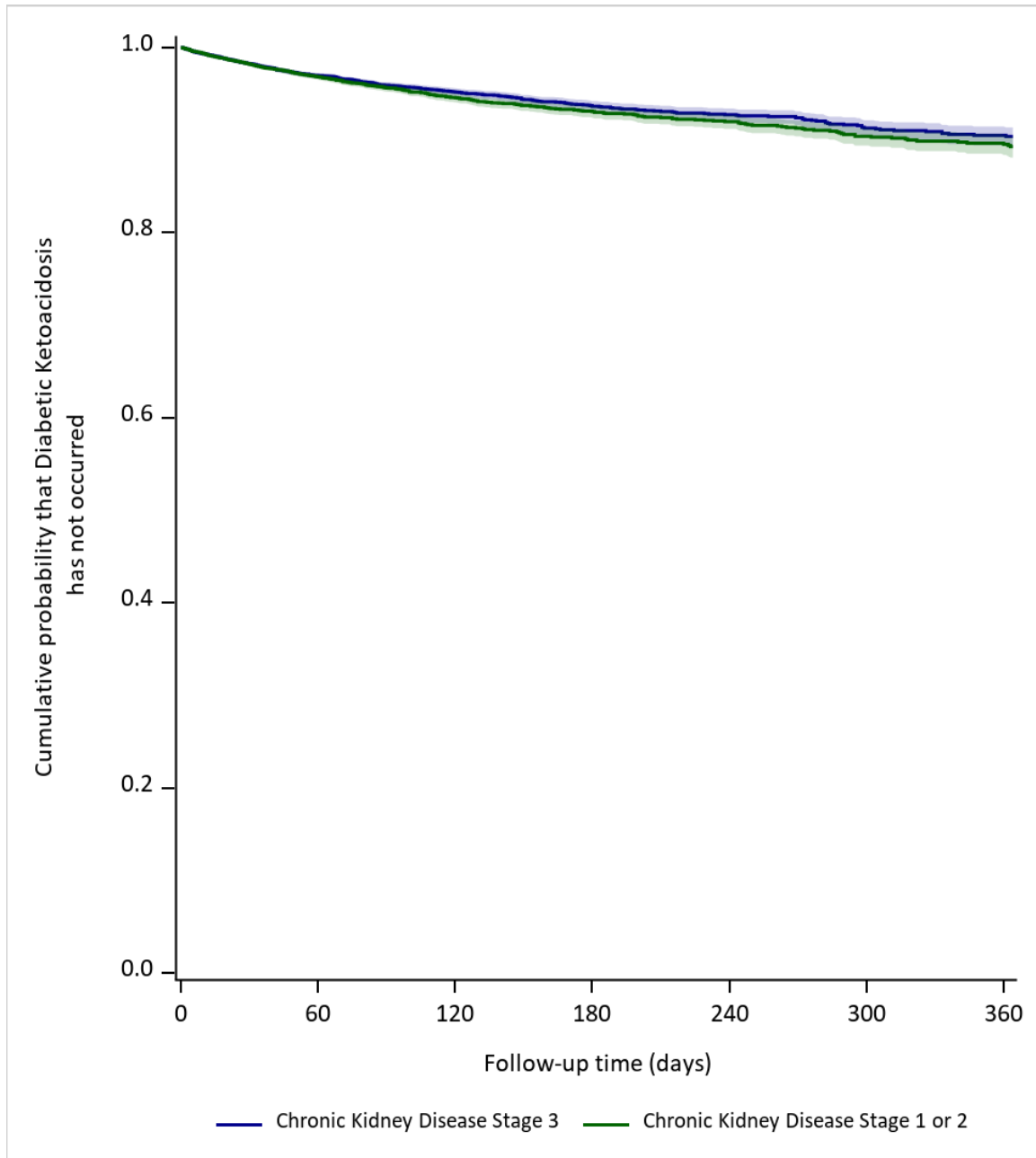


Figure 5g. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

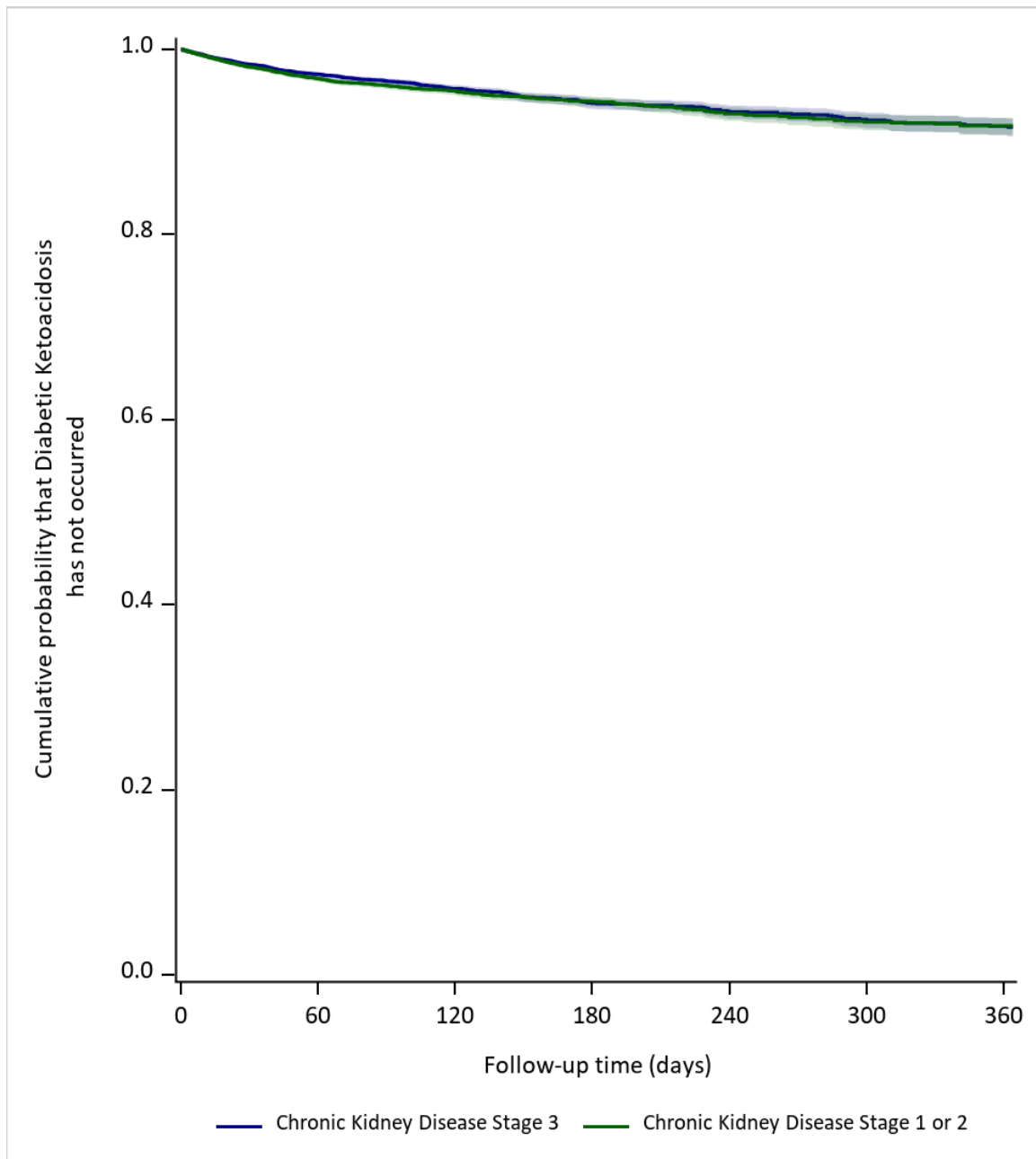


Figure 5h. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

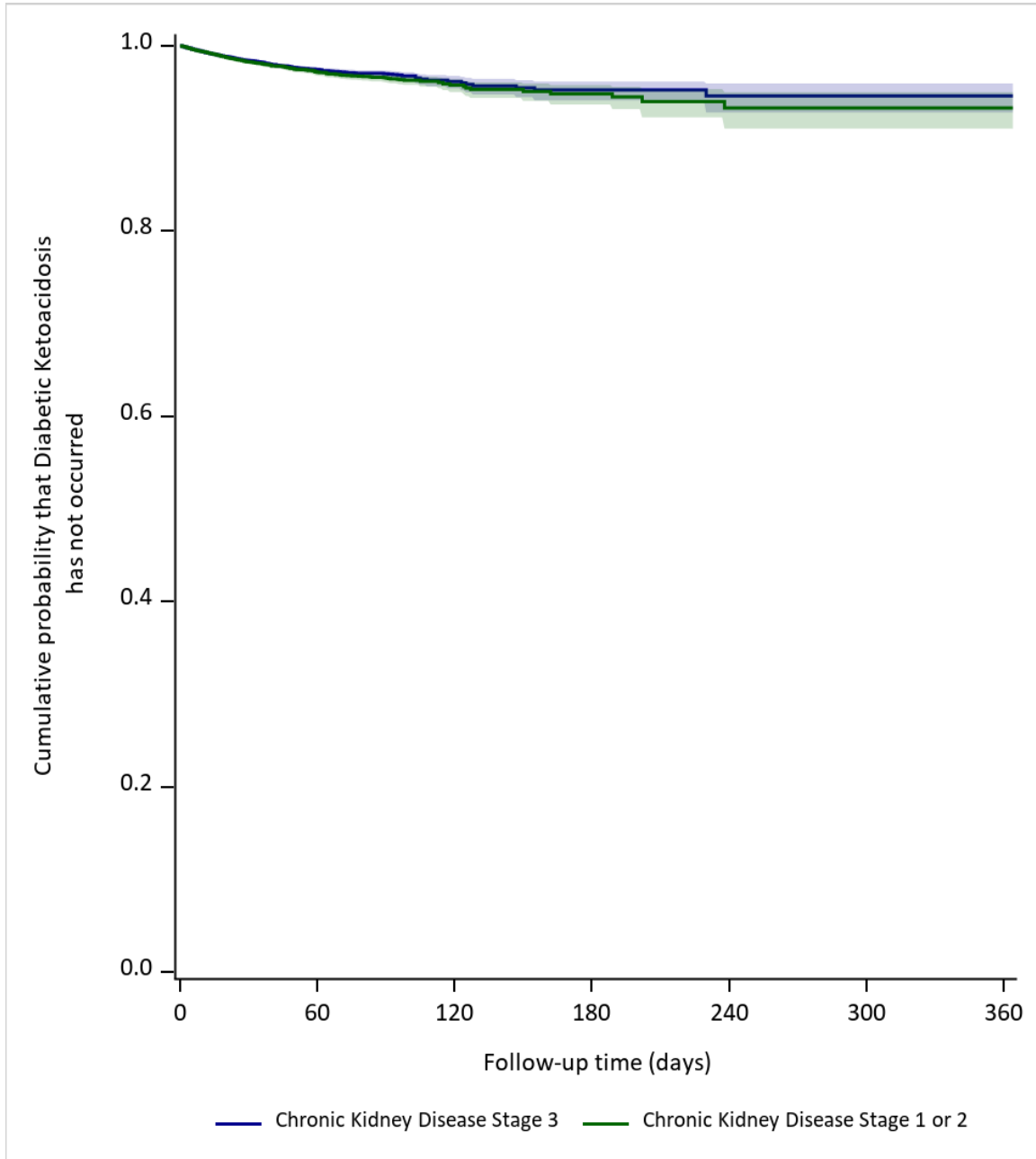


Figure 5i. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

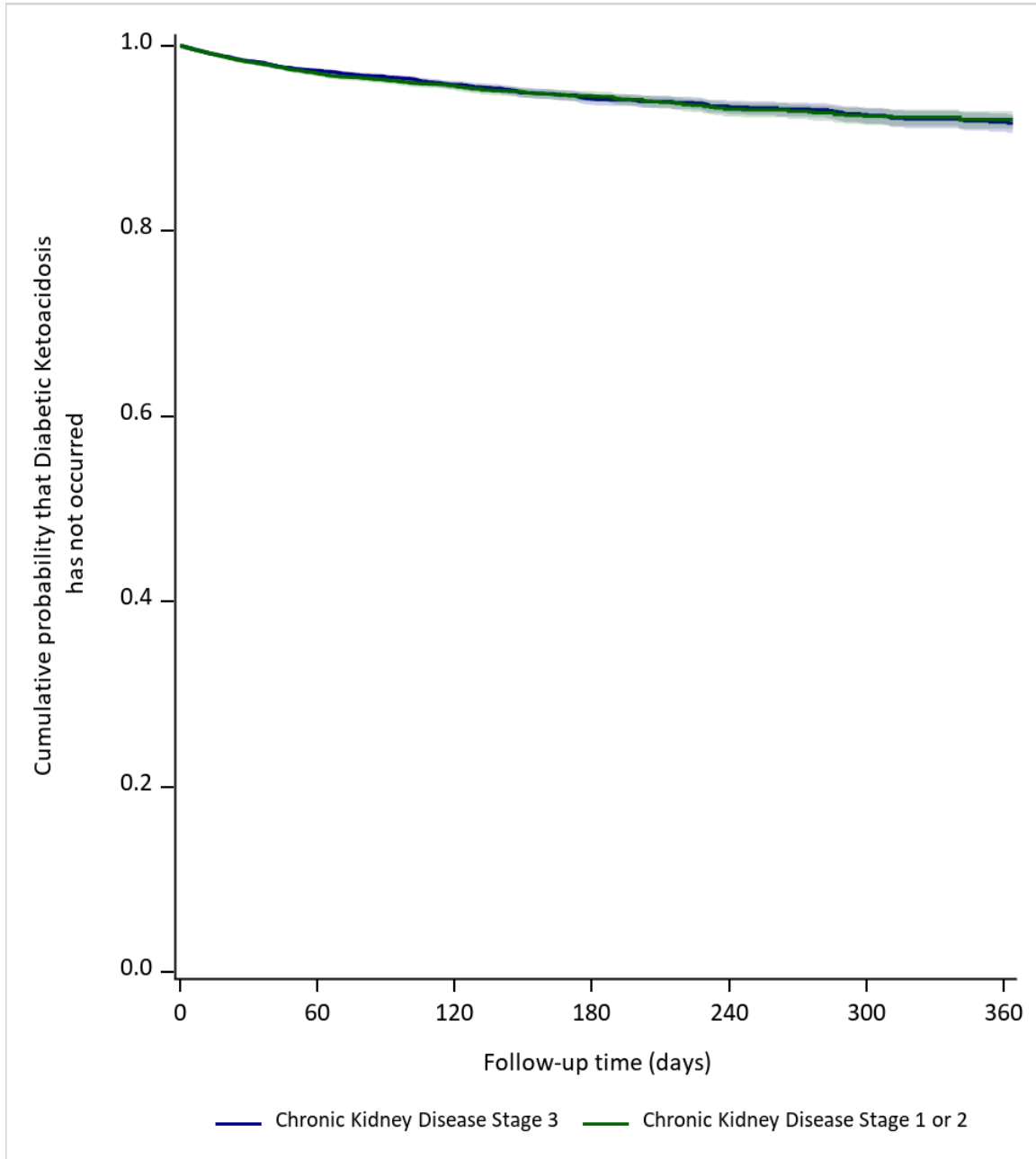


Figure 5j. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

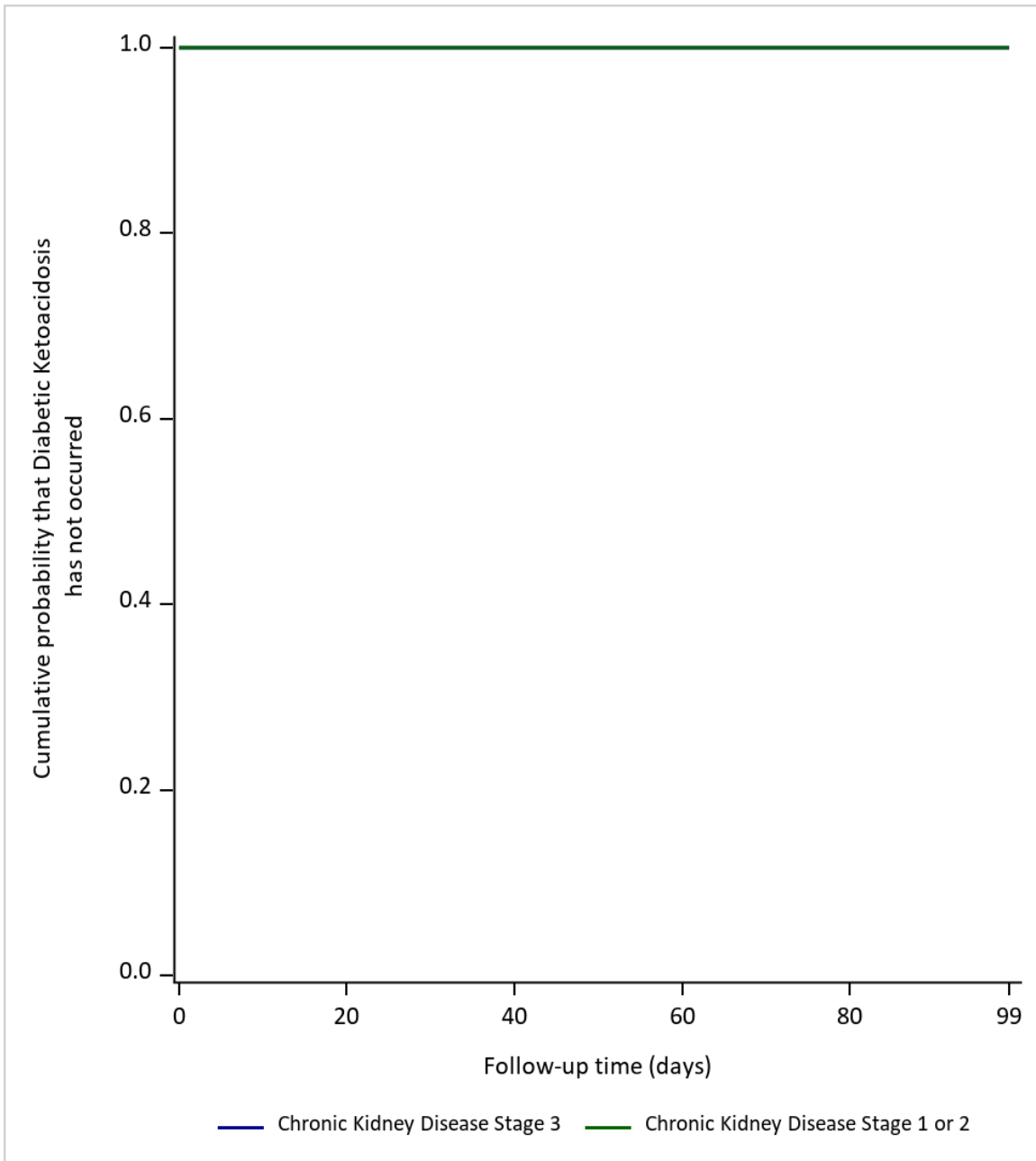


Figure 5k. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

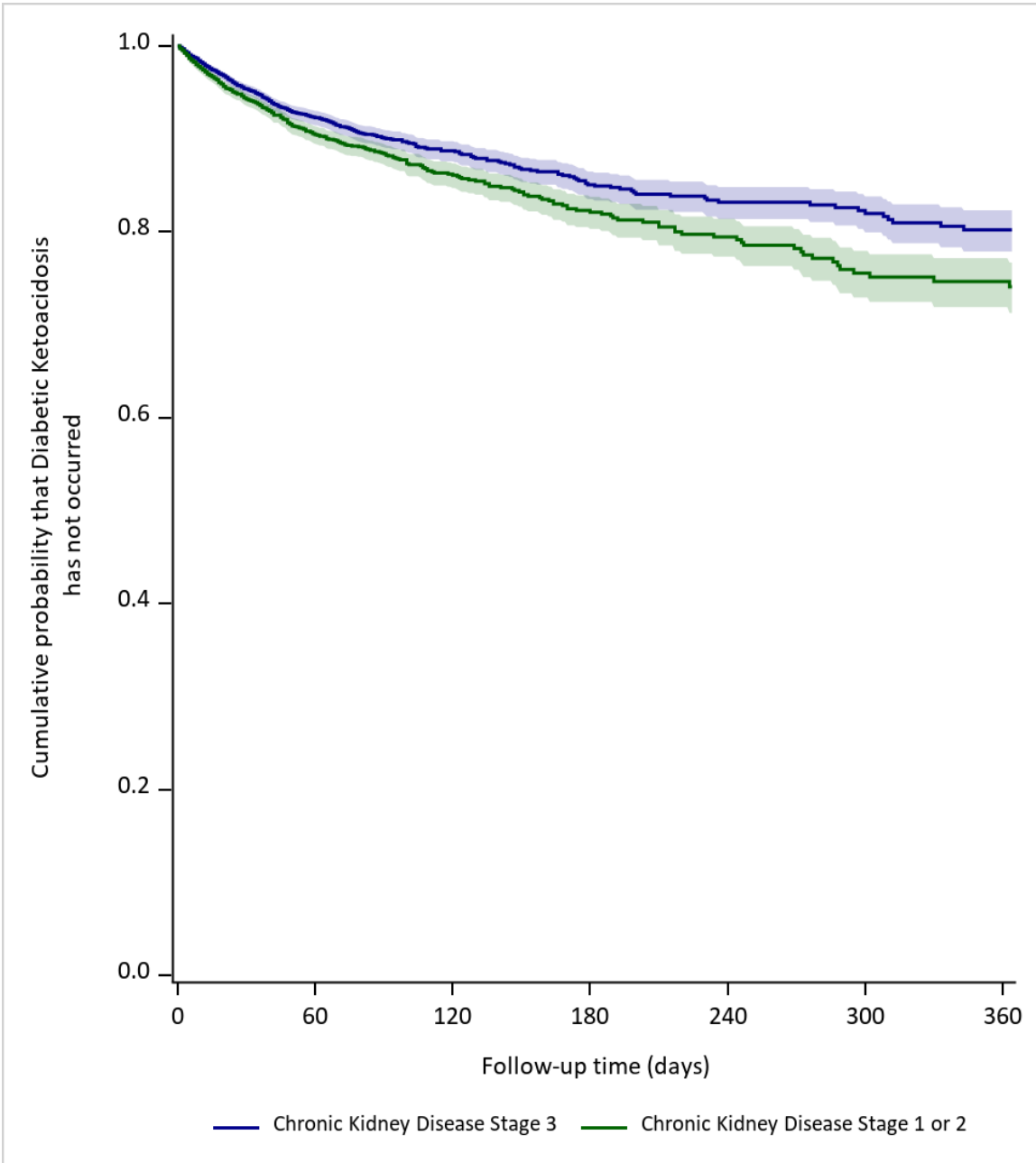


Figure 5I. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

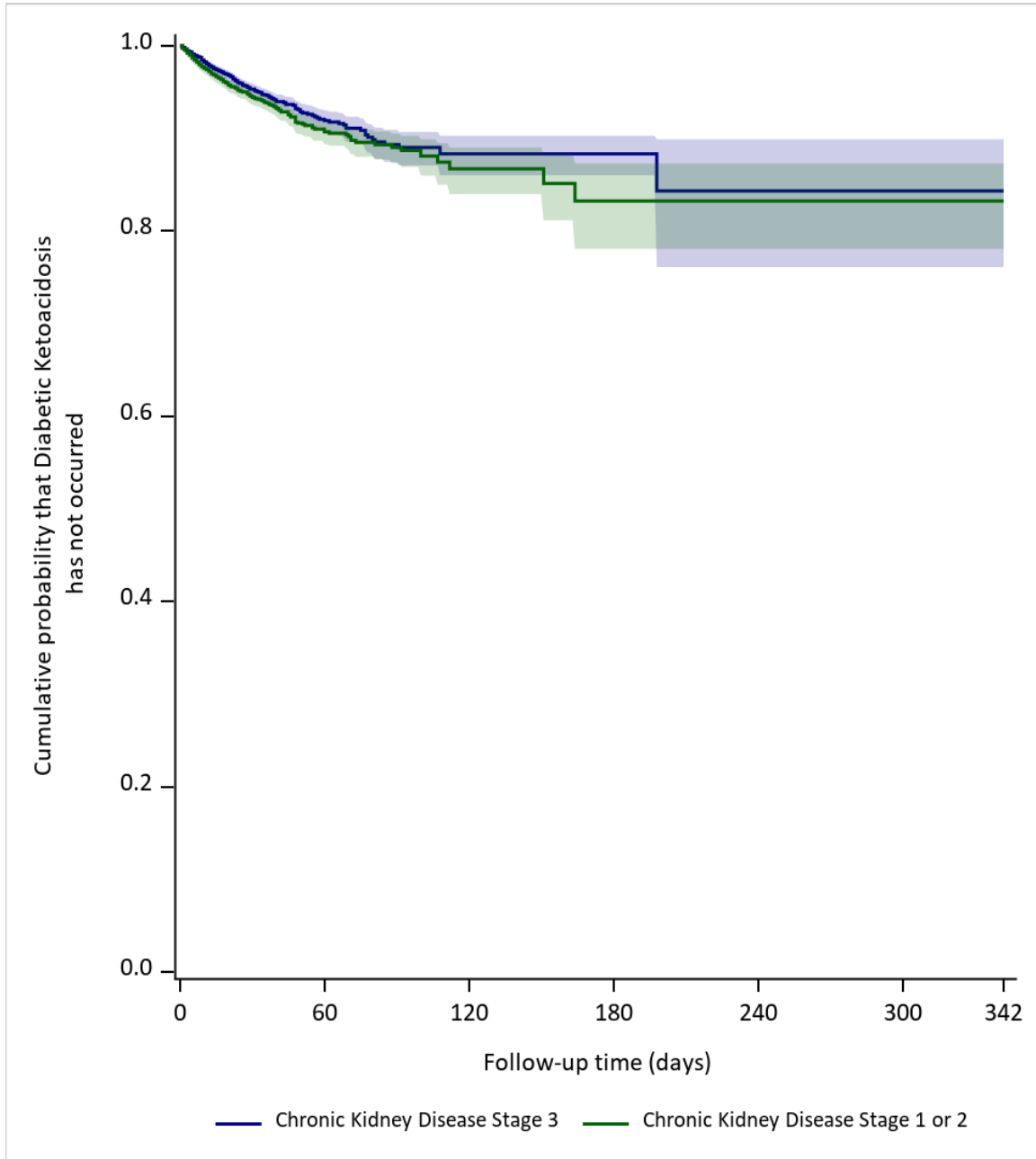


Figure 5m. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

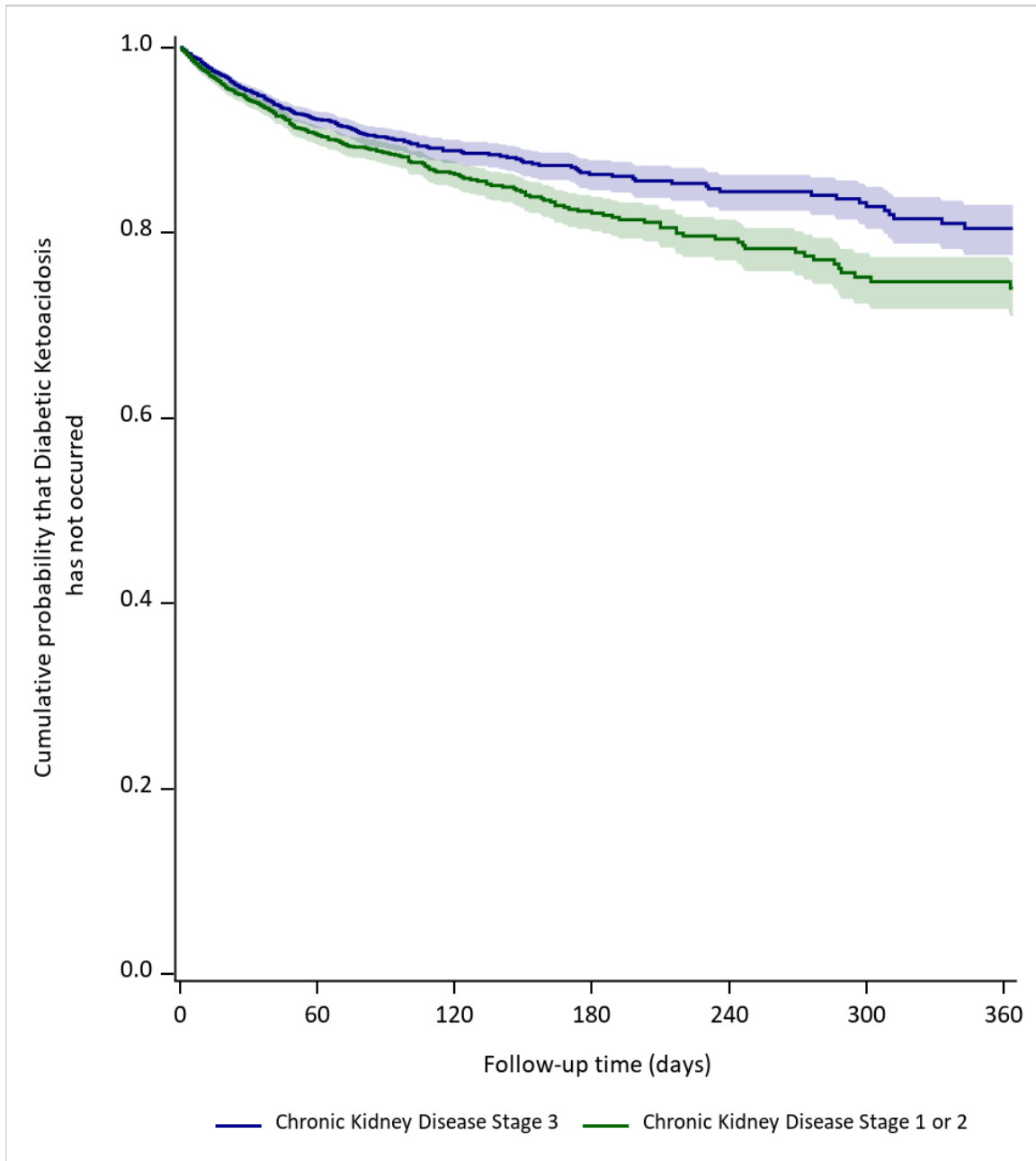


Figure 5n. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

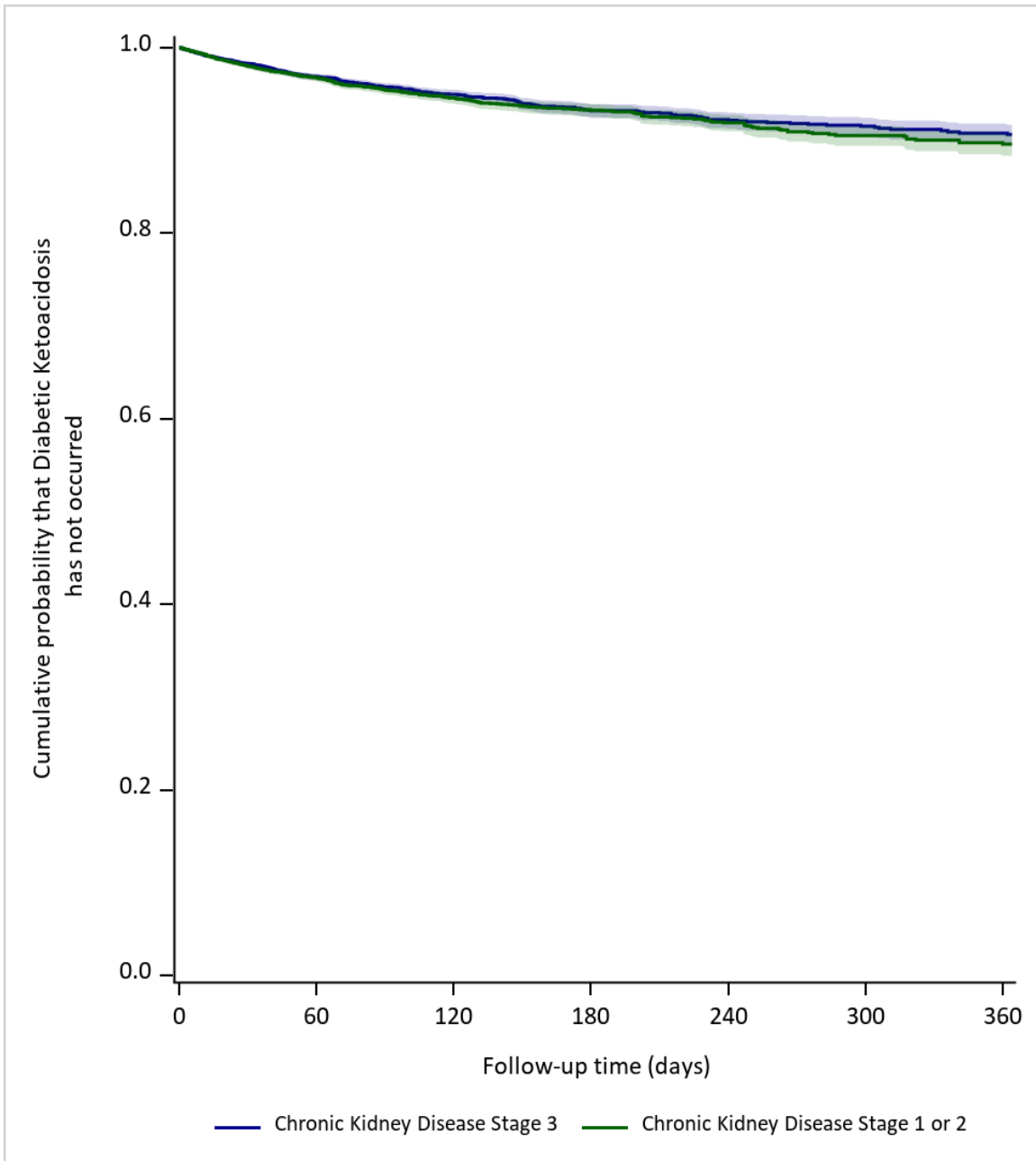


Figure 5o. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

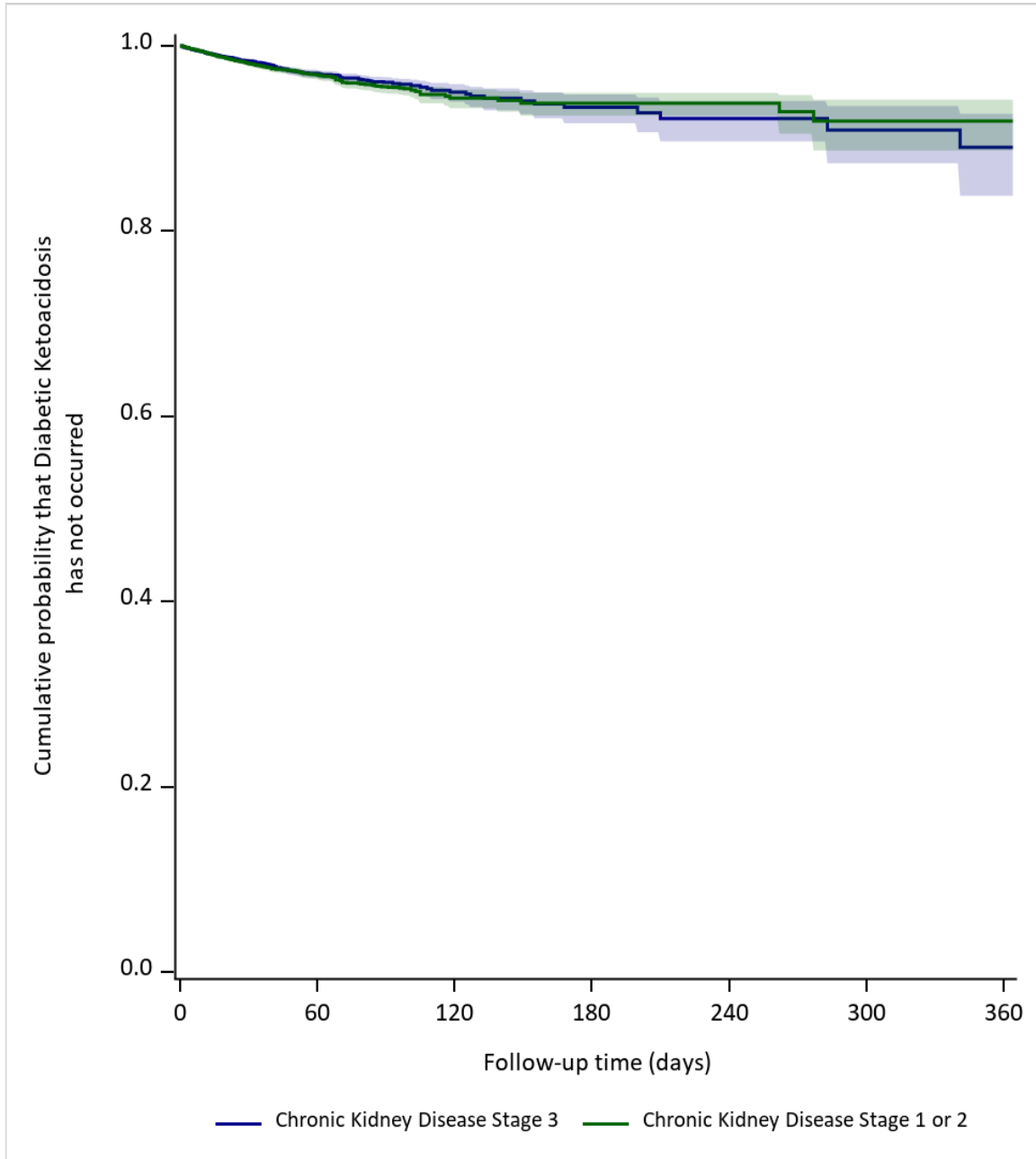


Figure 5p. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

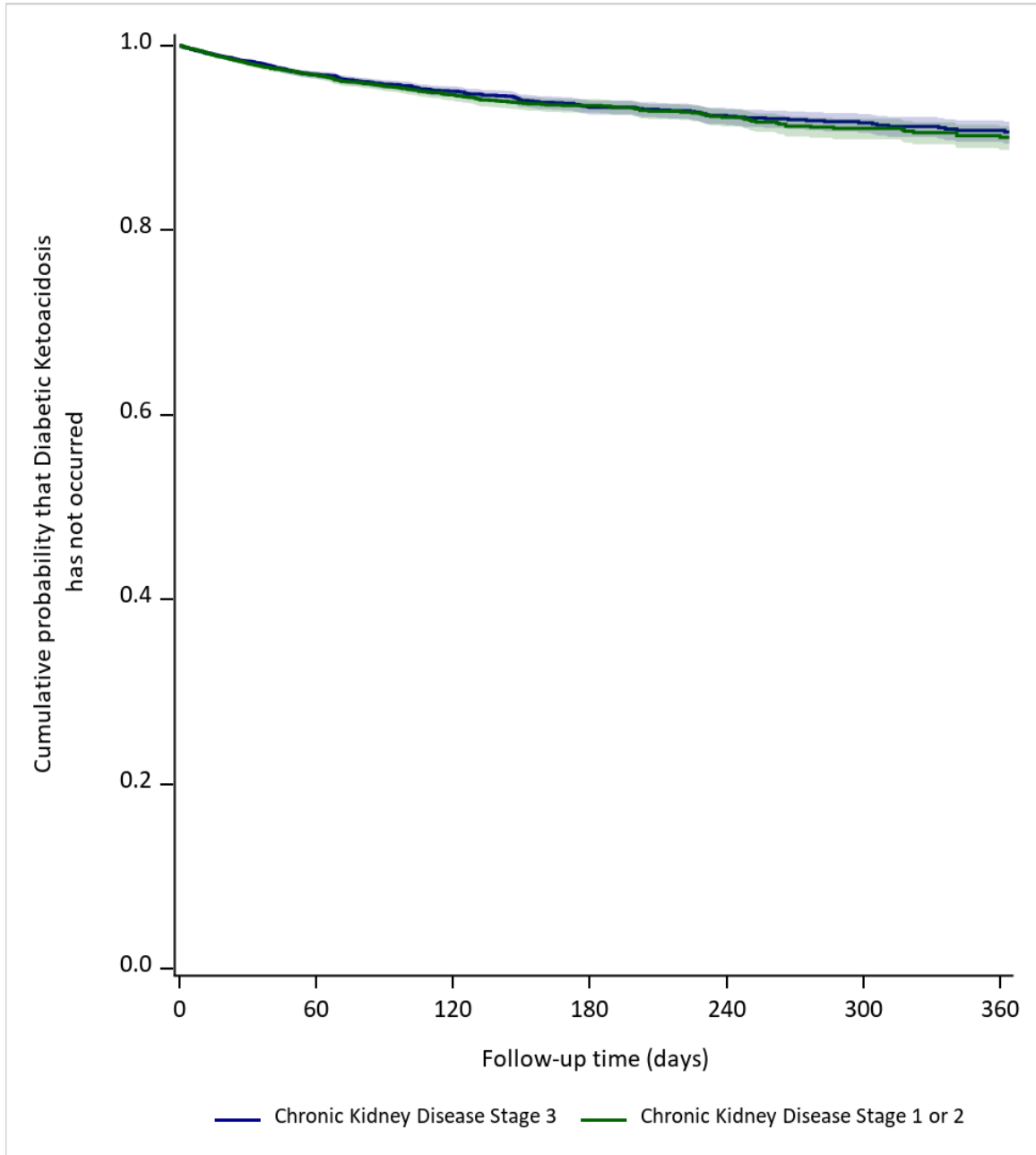


Figure 5q. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

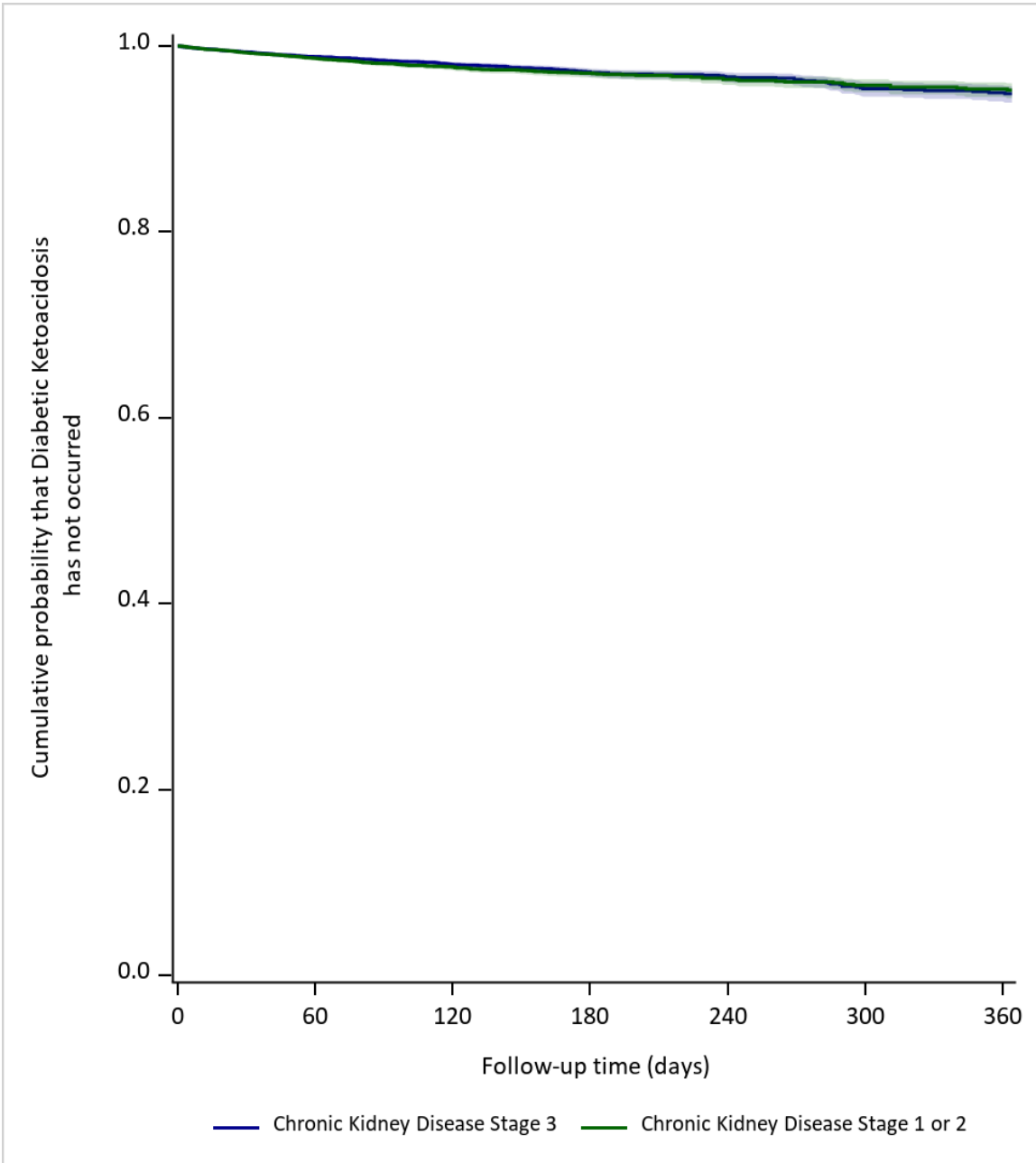


Figure 5r. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

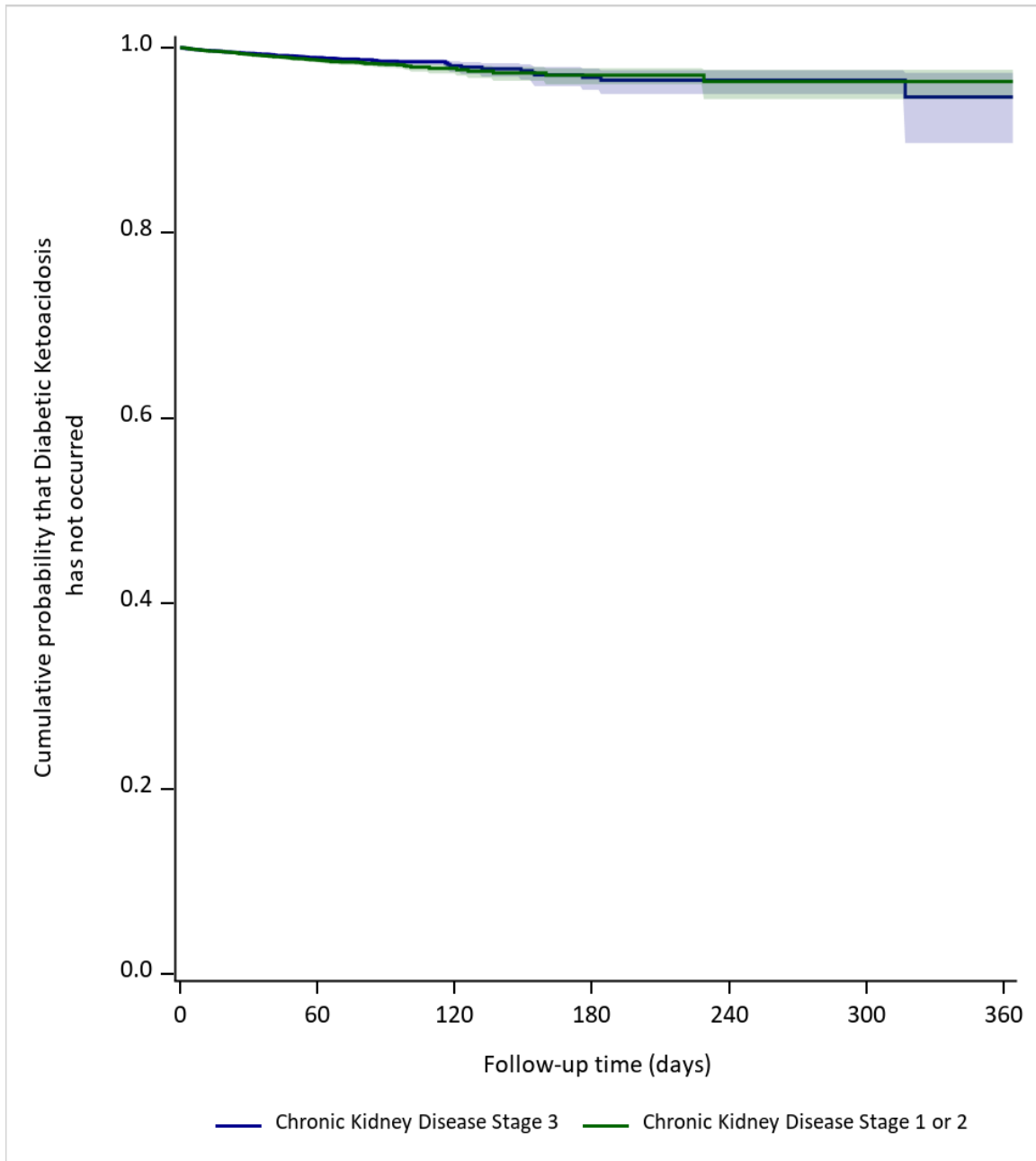


Figure 5s. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

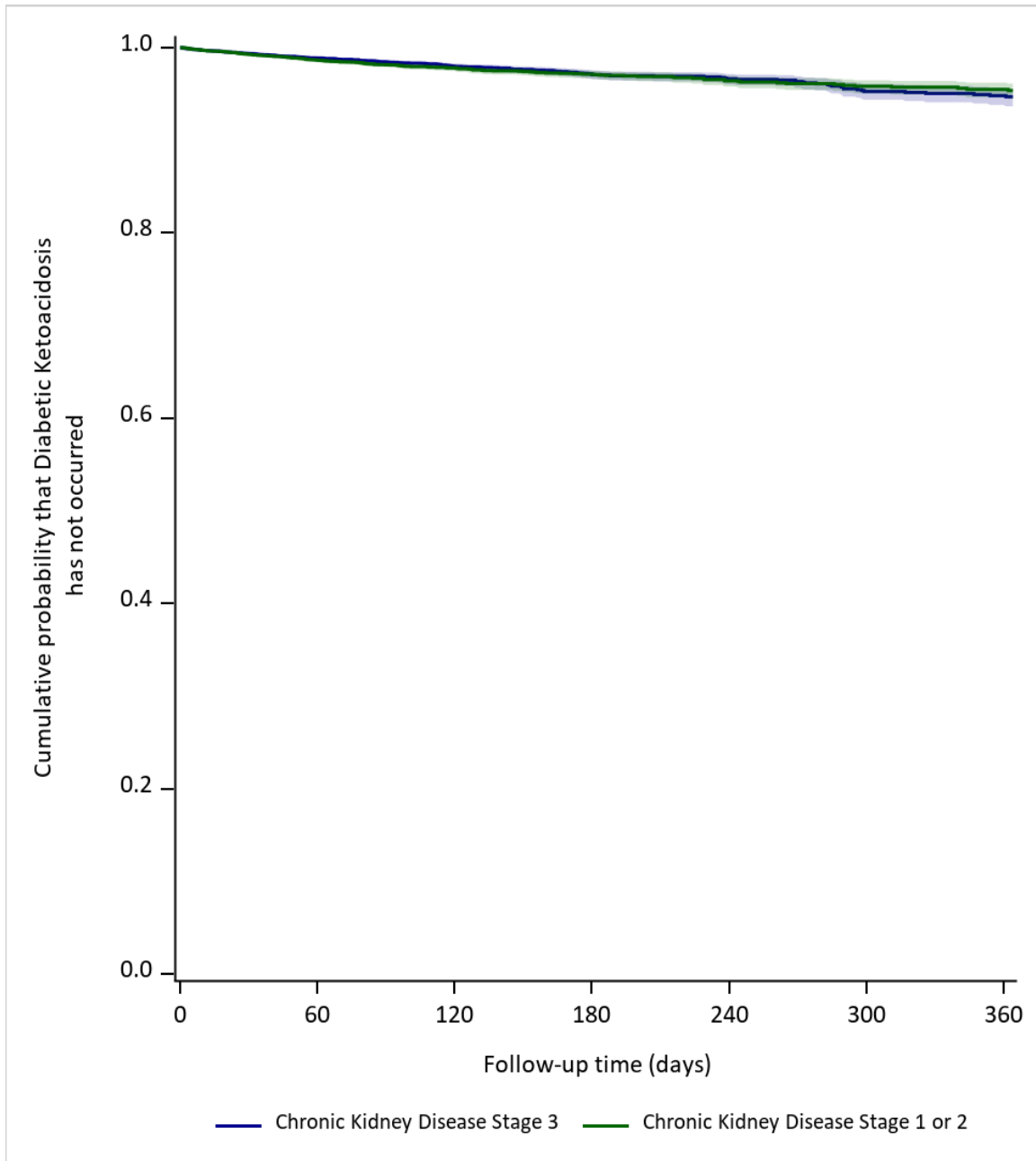


Figure 6a. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

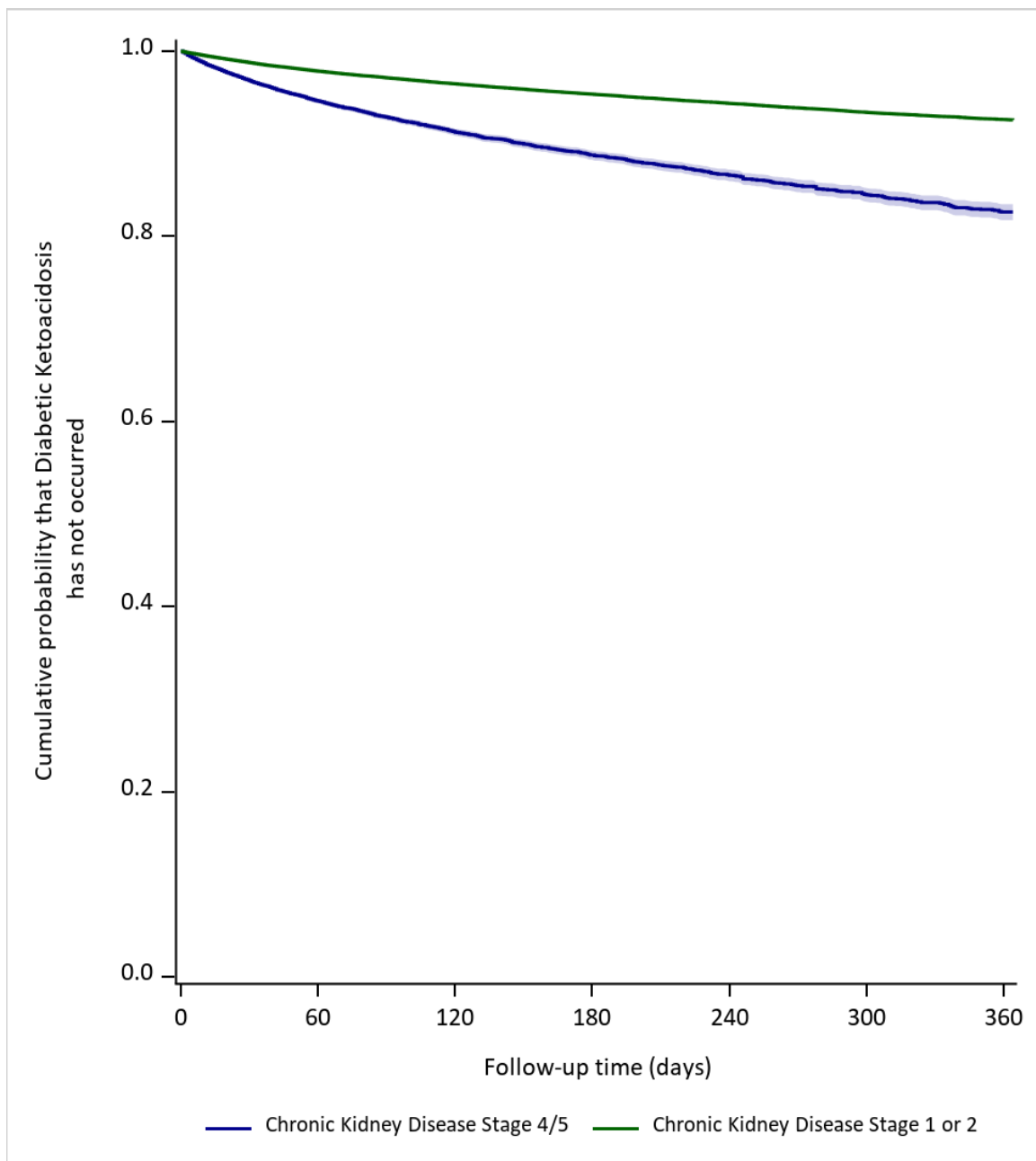


Figure 6b. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

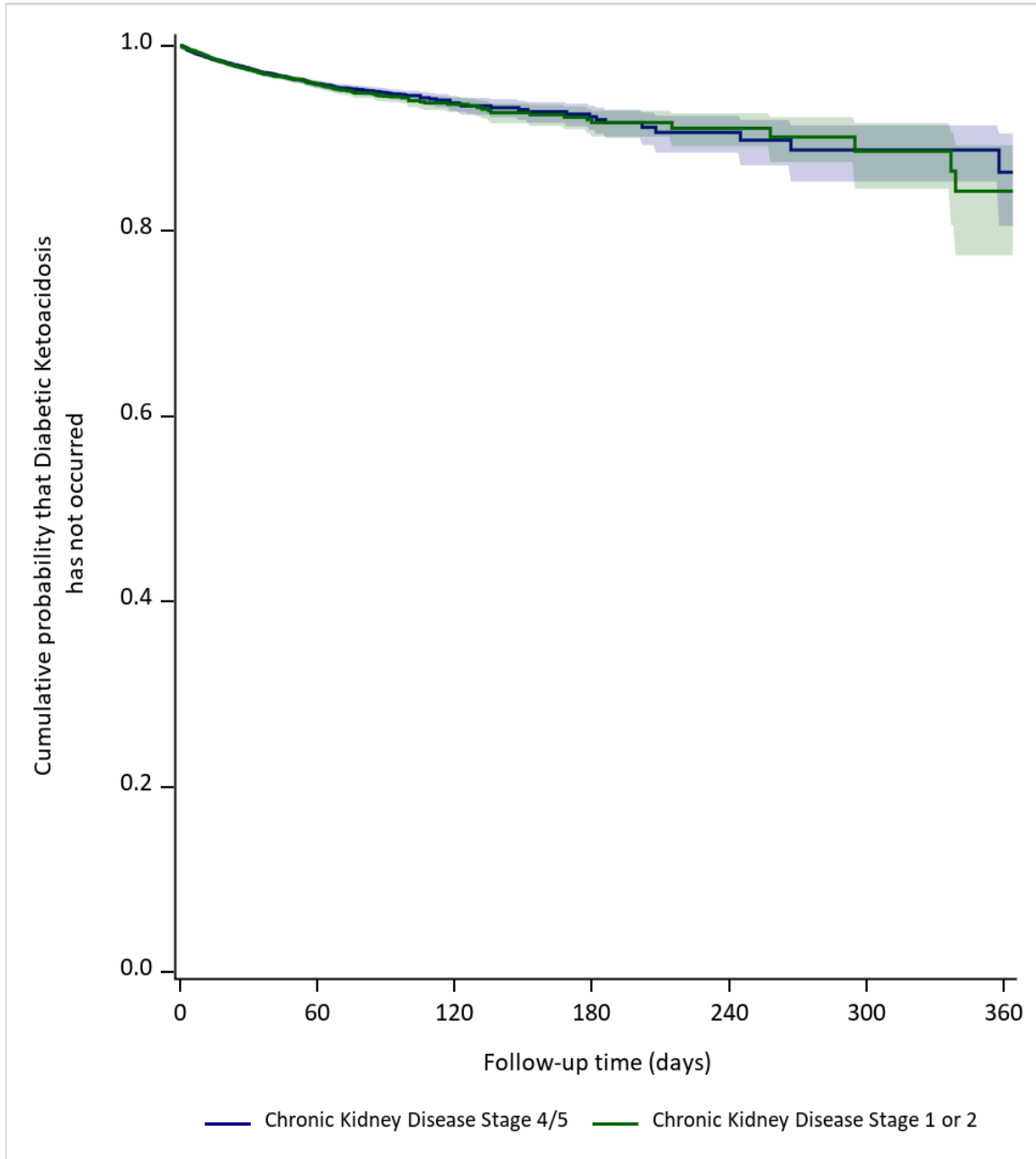


Figure 6c. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

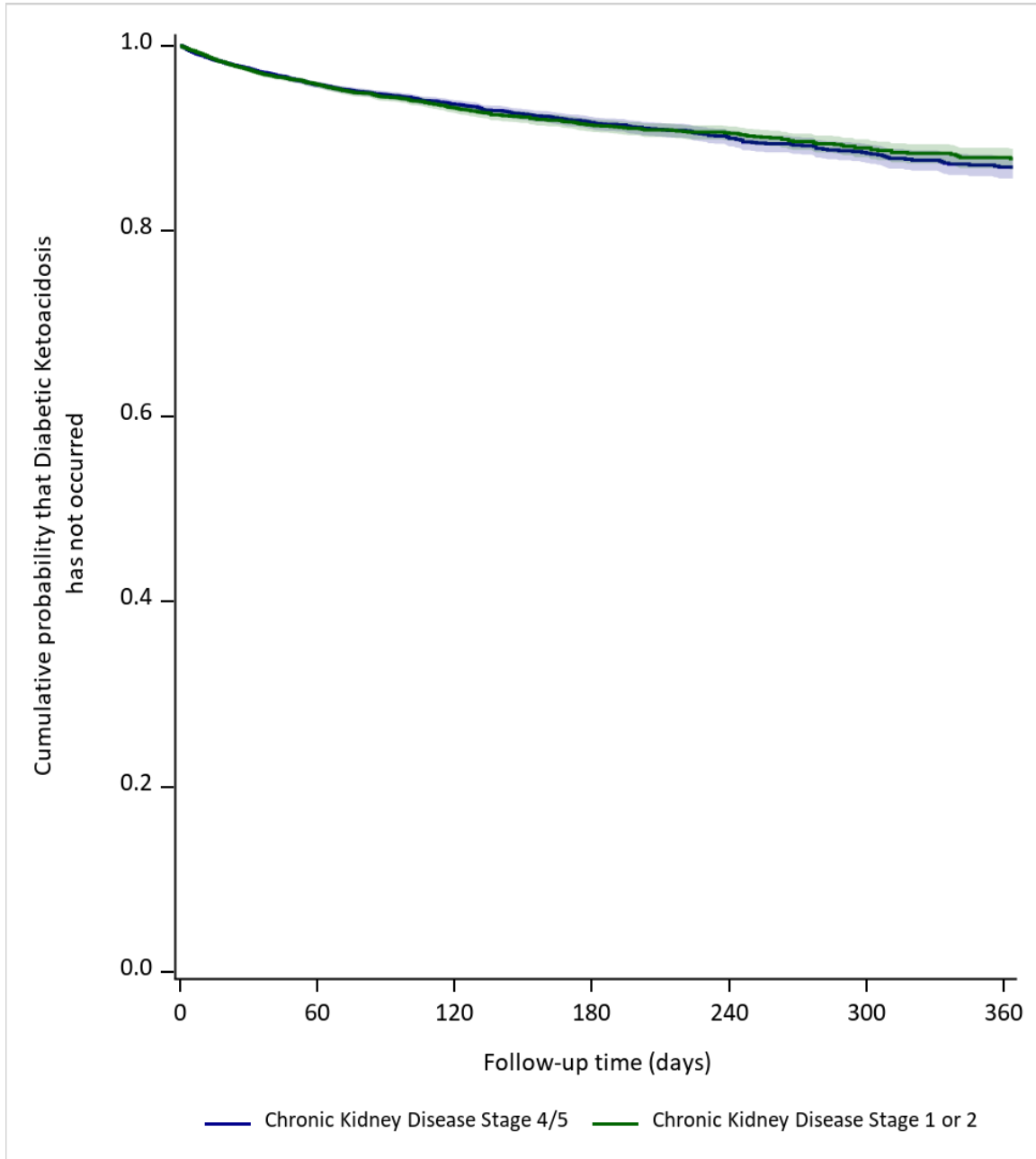


Figure 6d. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

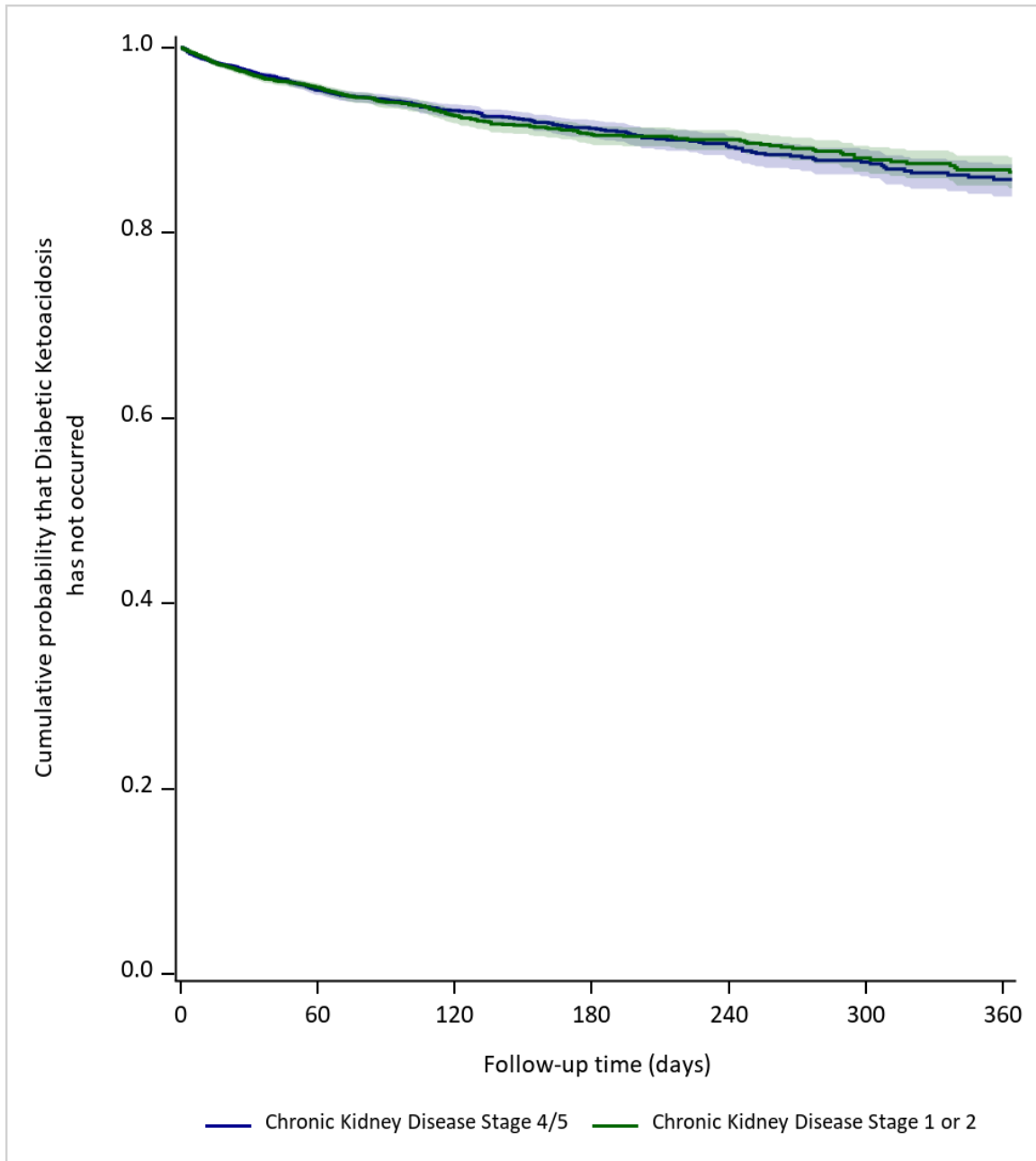


Figure 6e. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

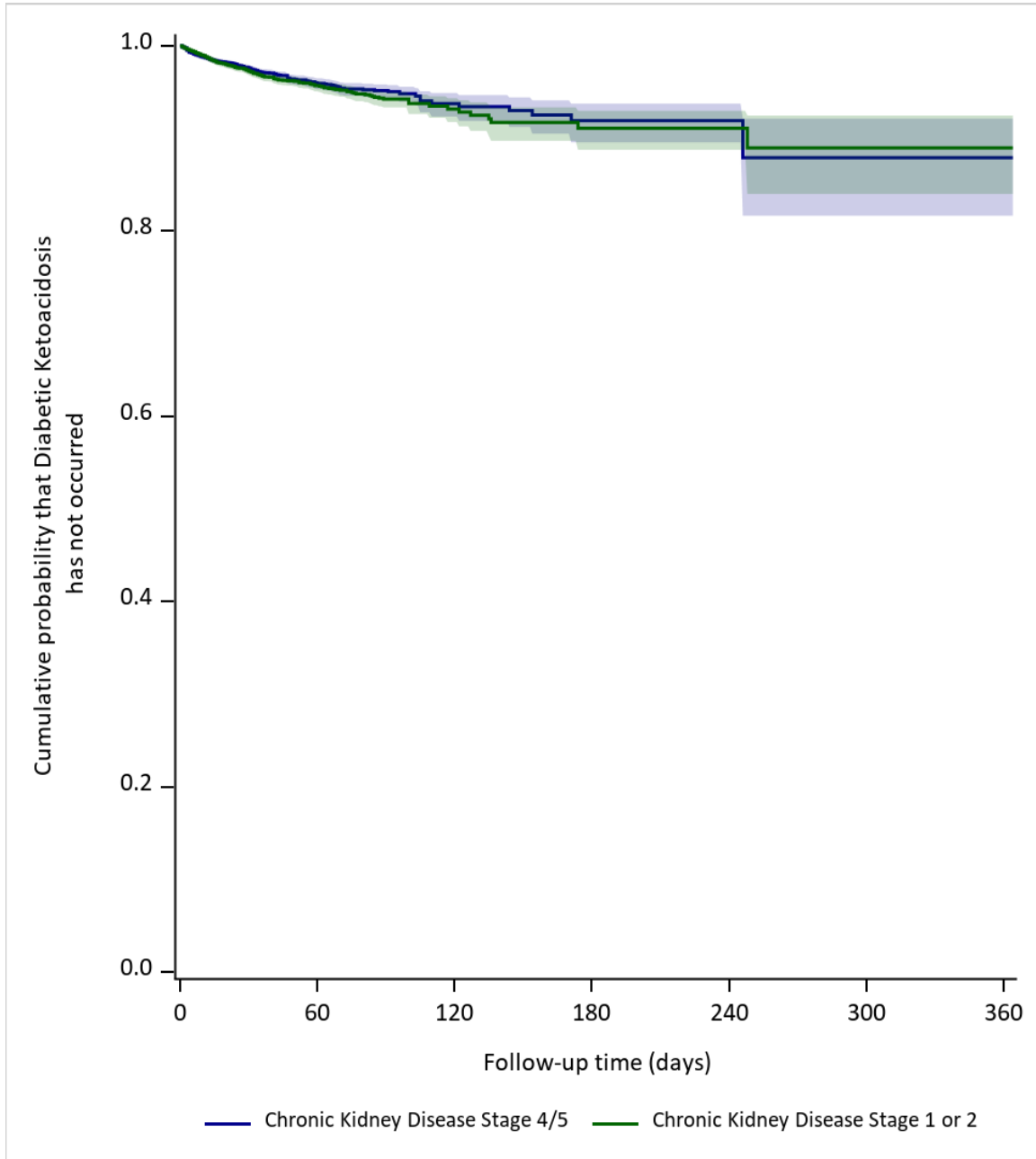


Figure 6f. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

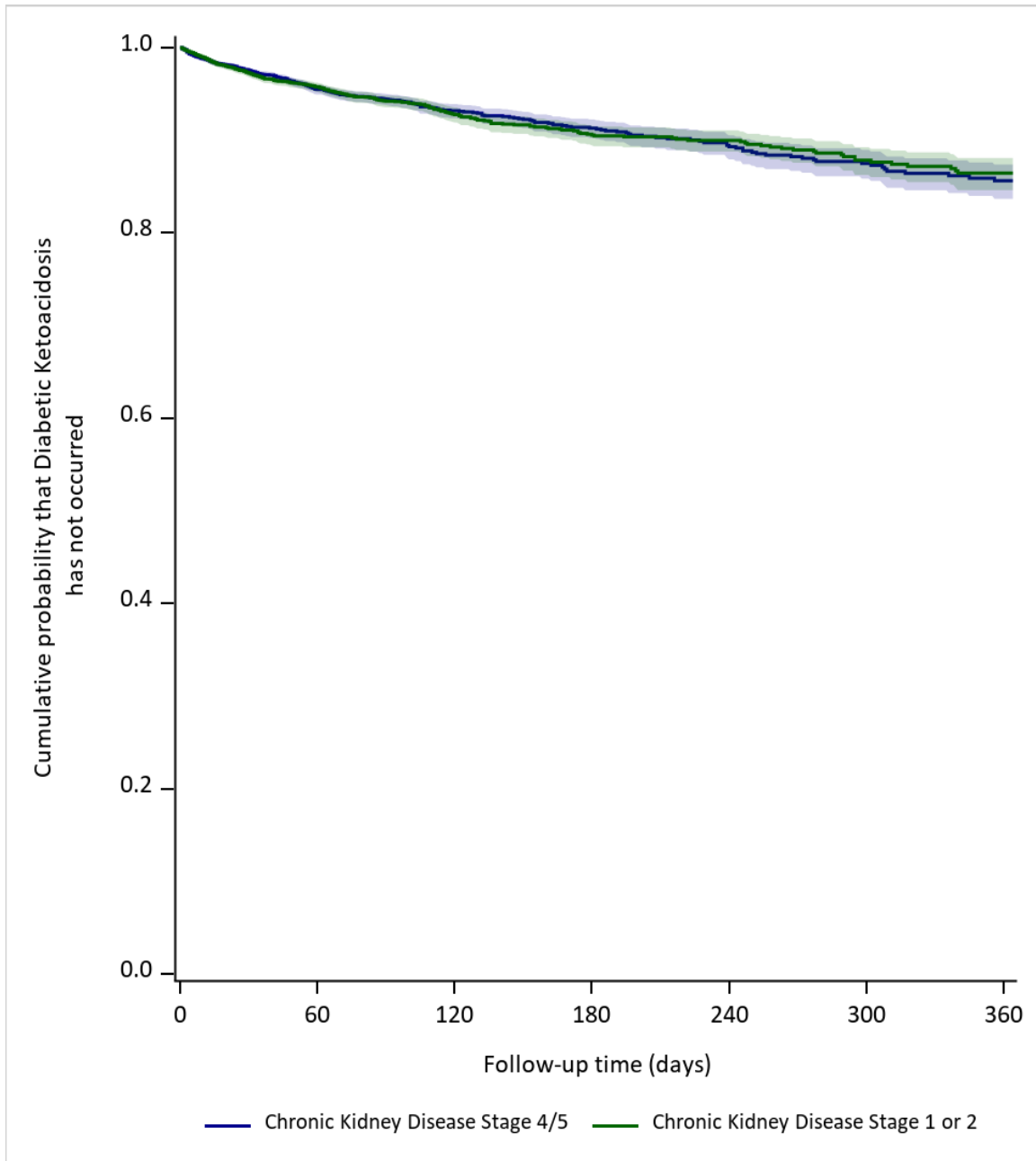


Figure 6g. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

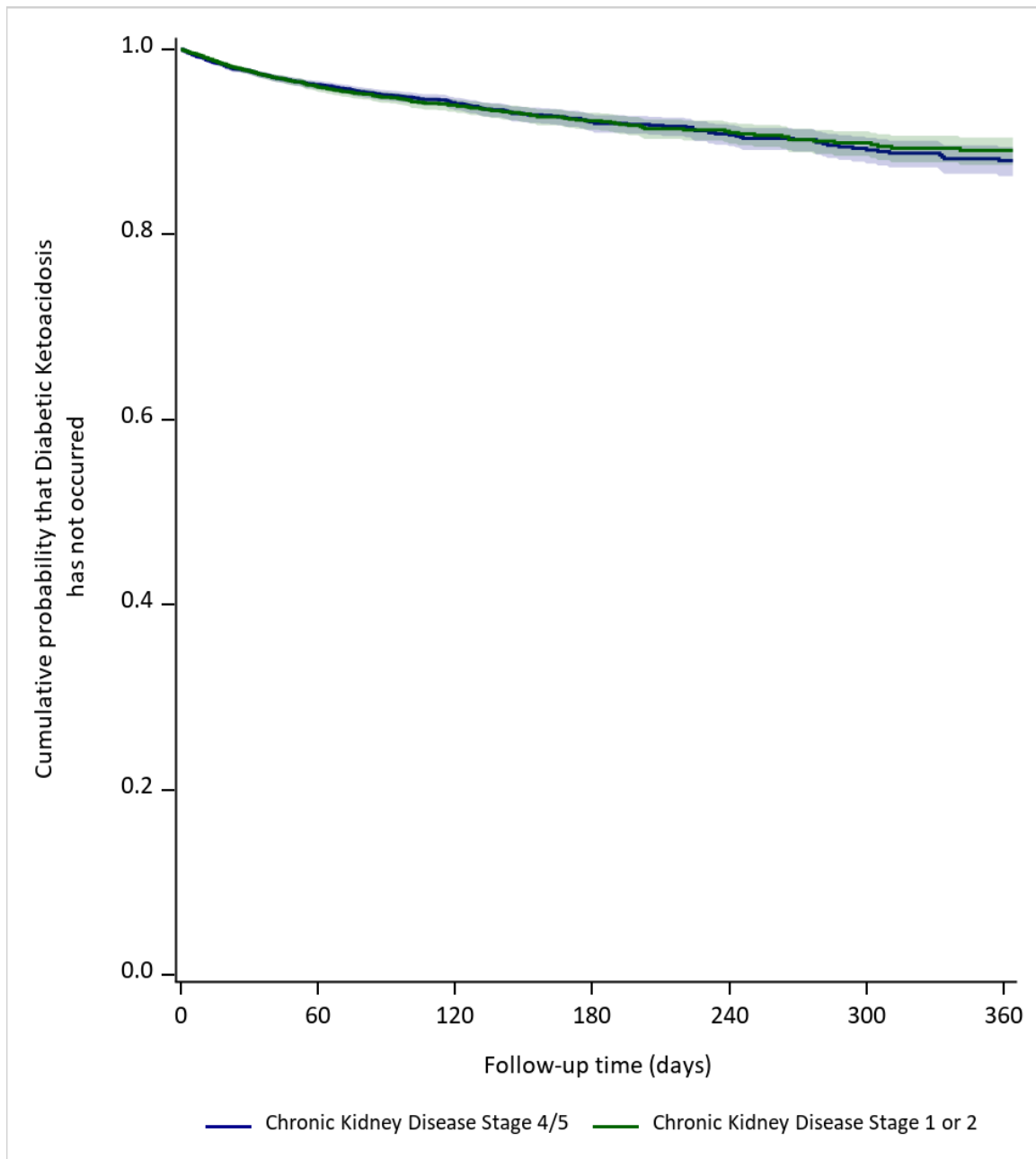


Figure 6h. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

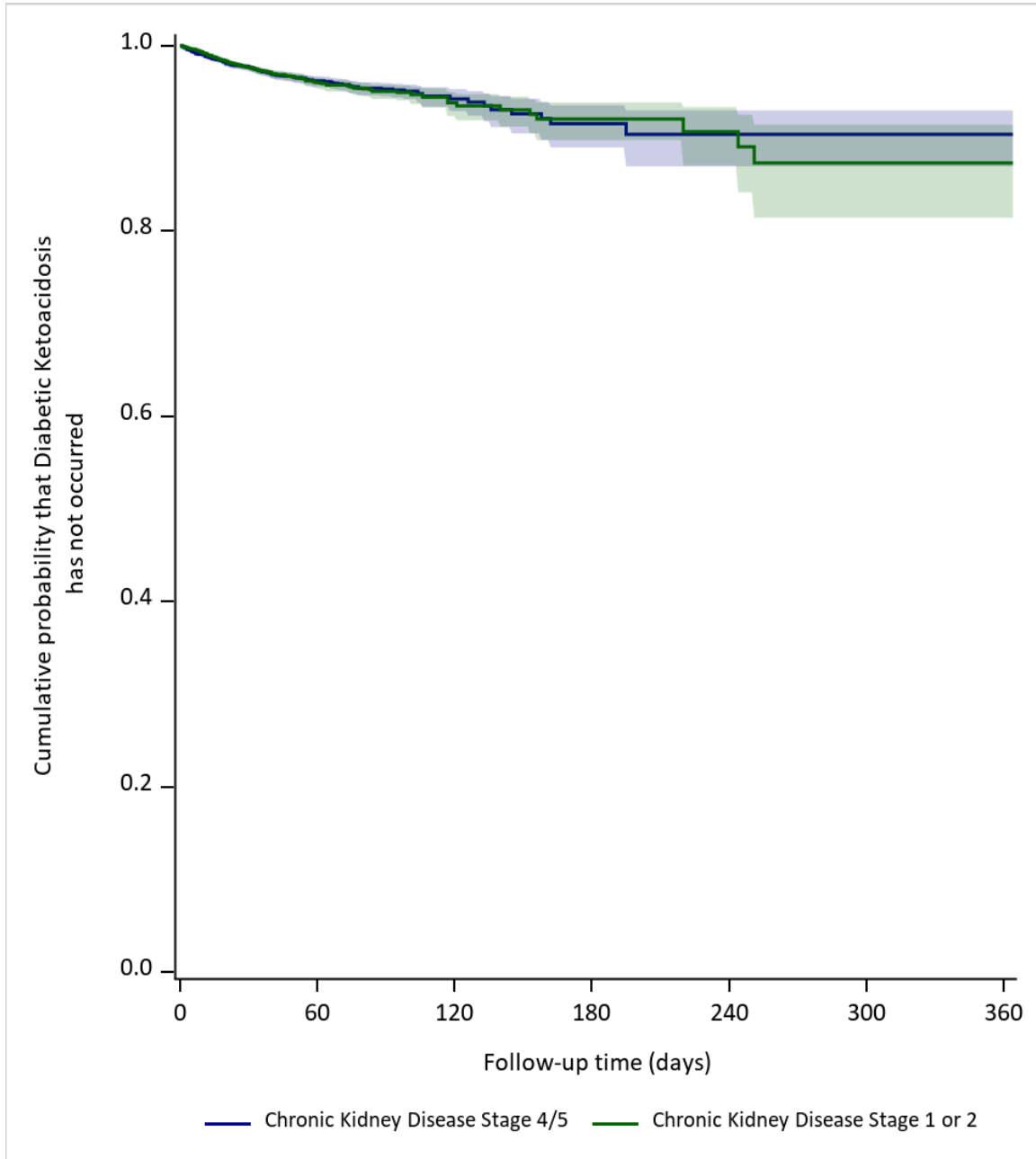


Figure 6i. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

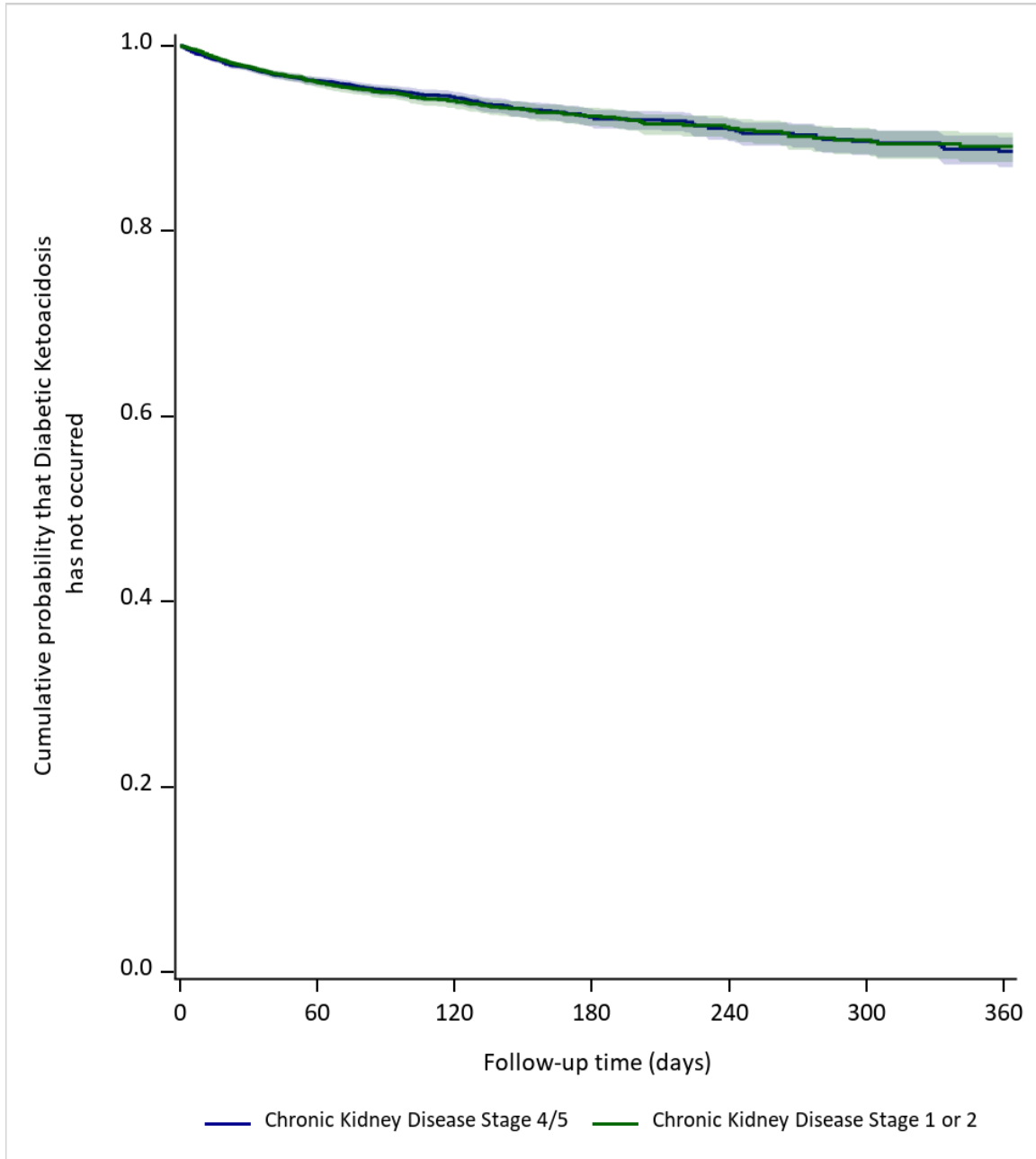


Figure 6j. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

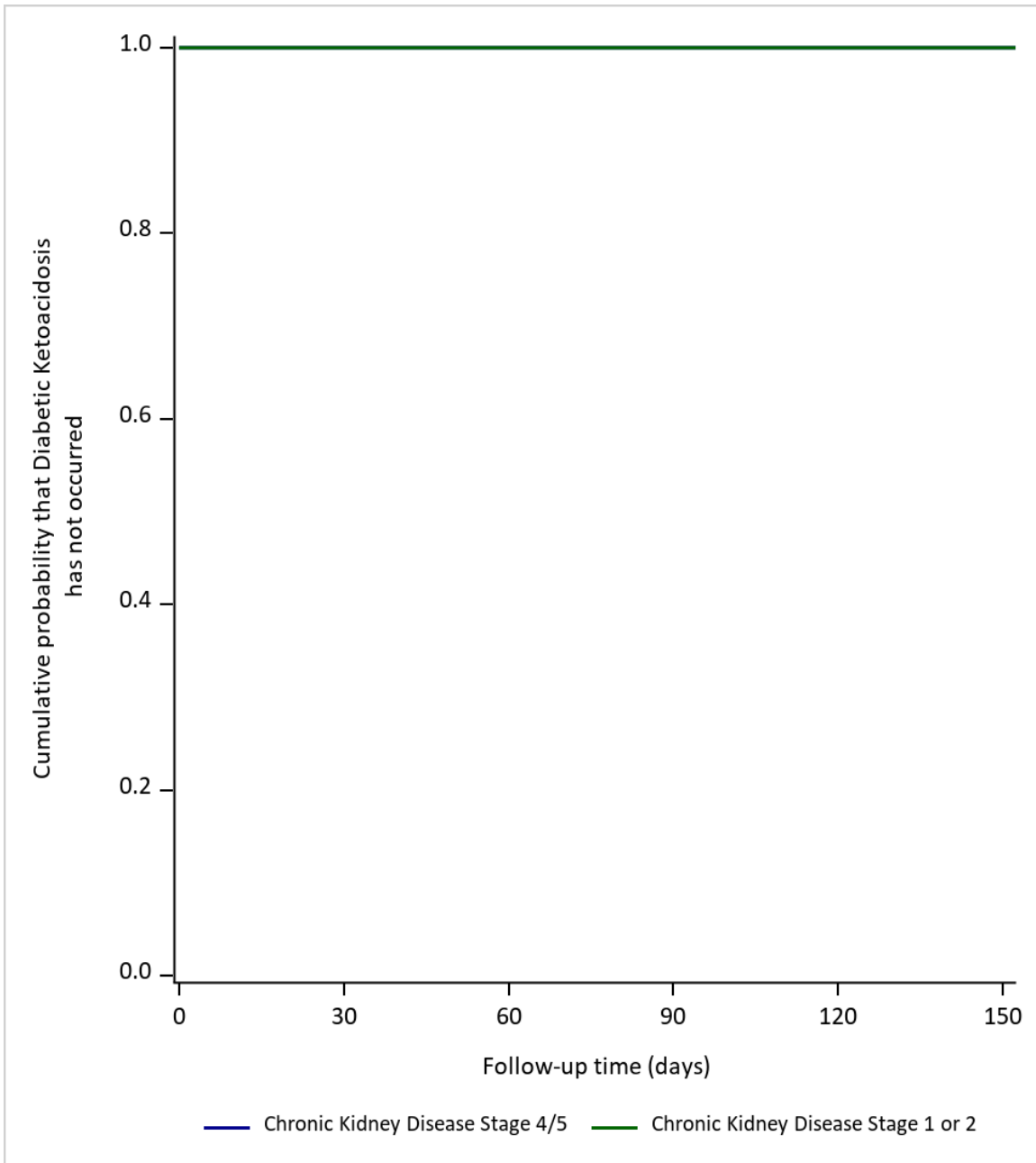


Figure 6k. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

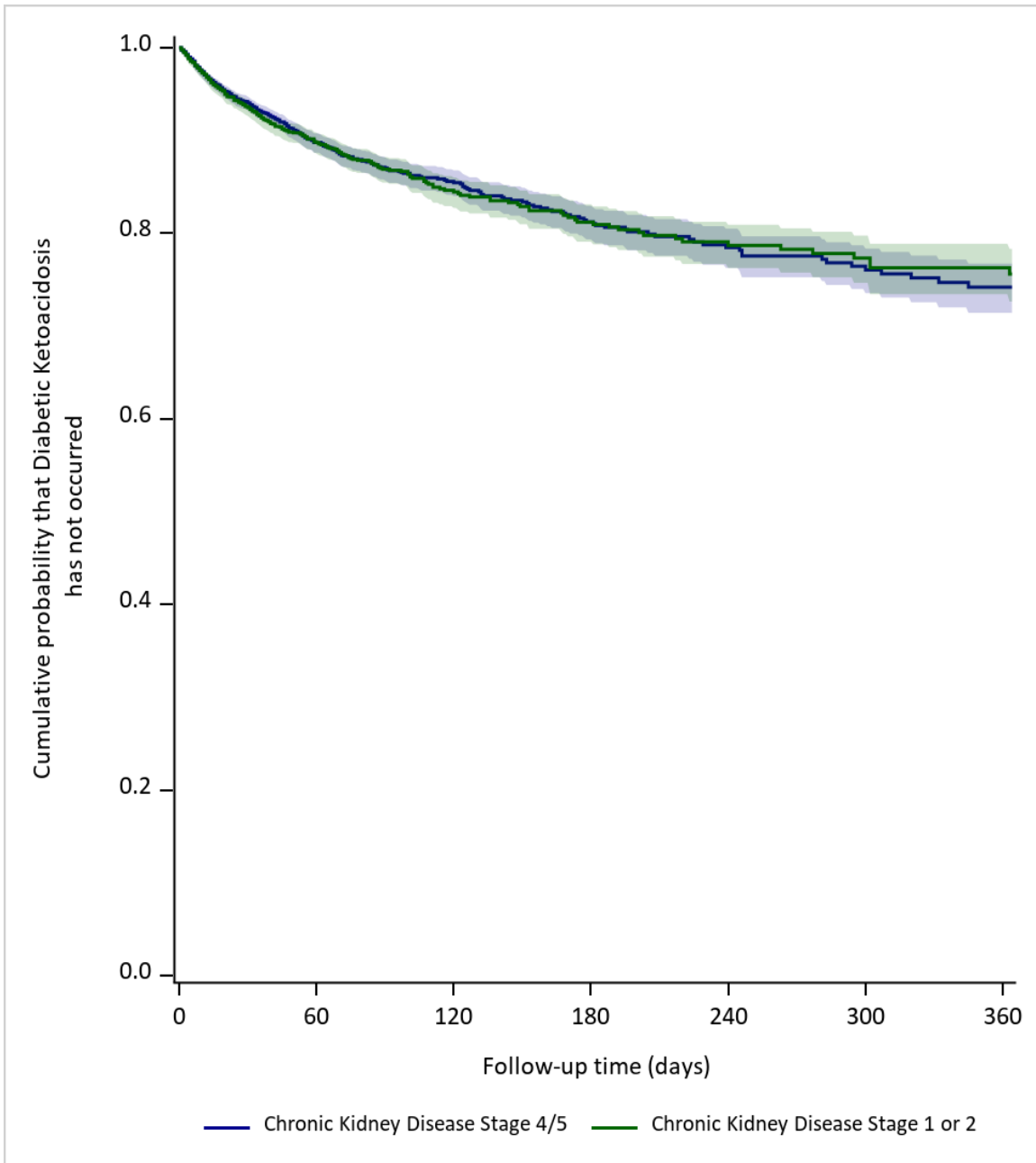


Figure 6l. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

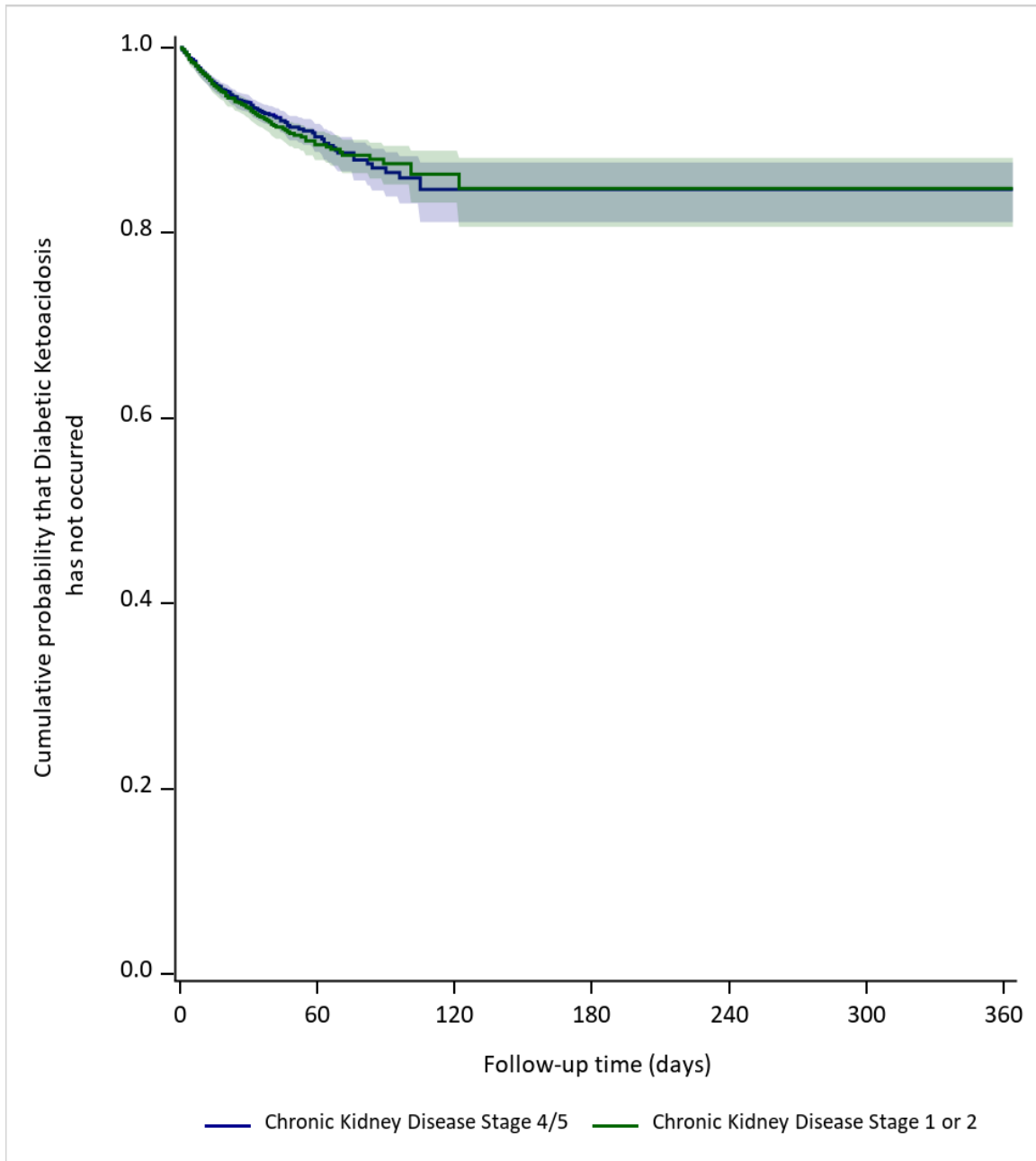


Figure 6m. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

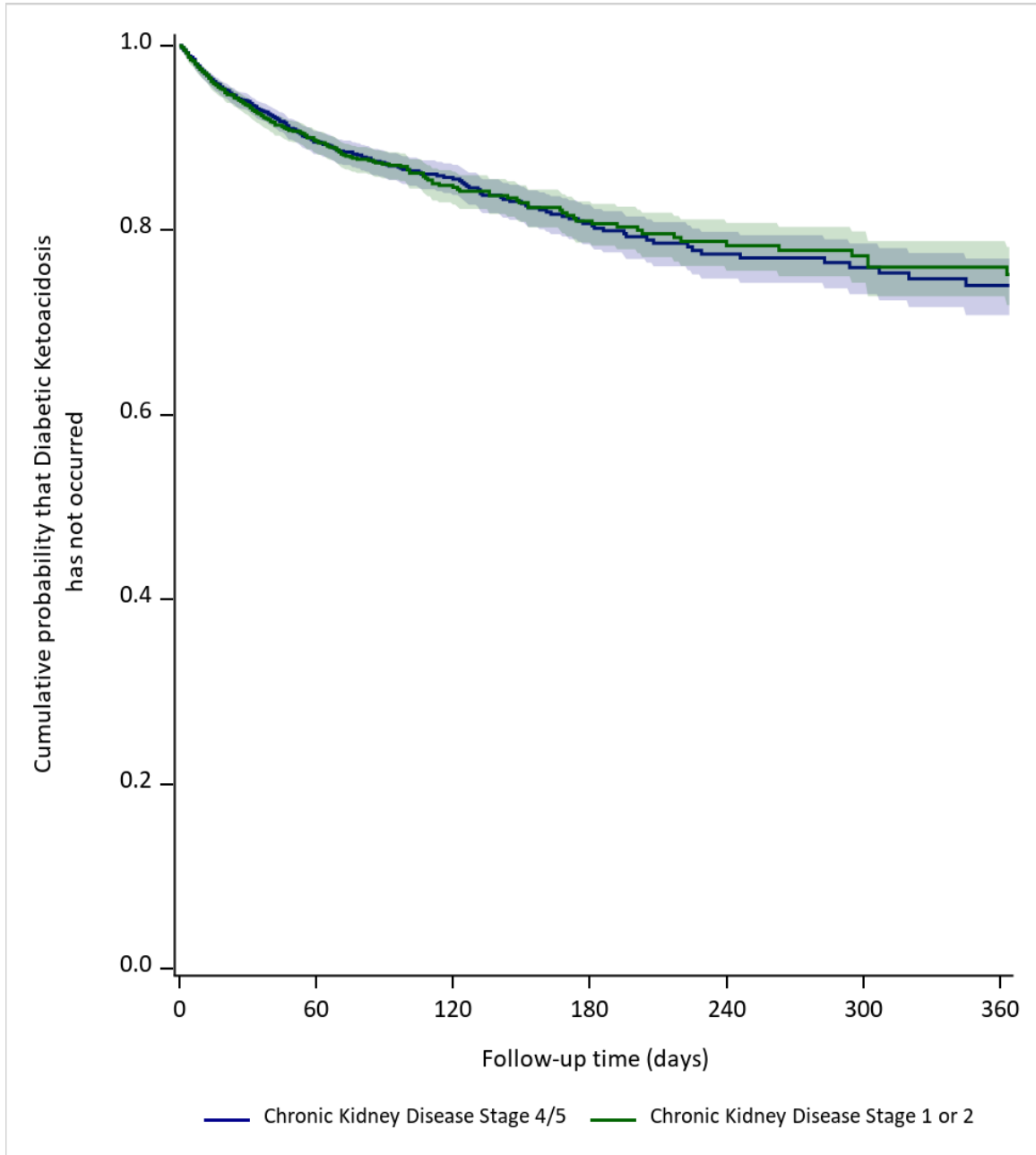


Figure 6n. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

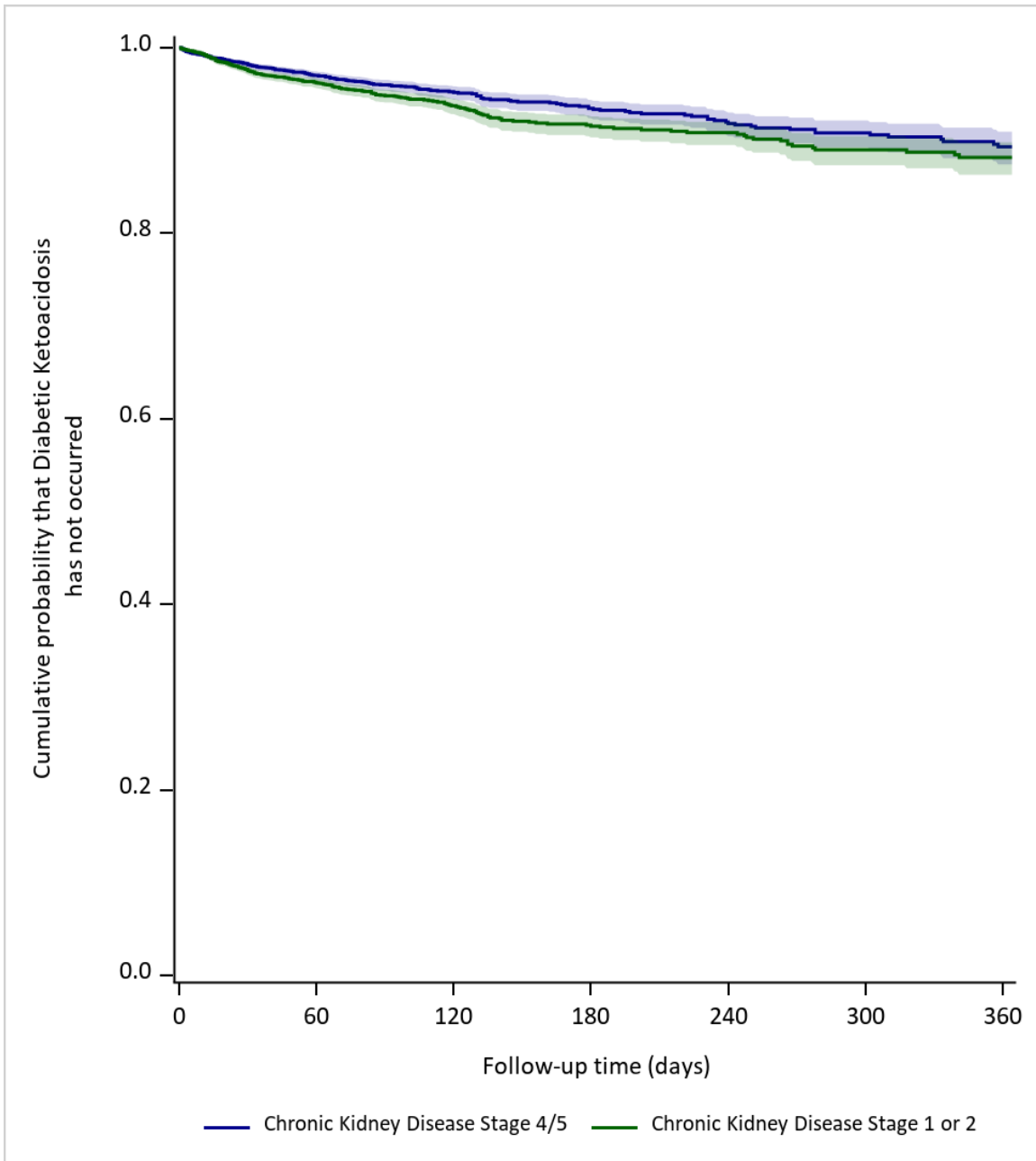


Figure 6o. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

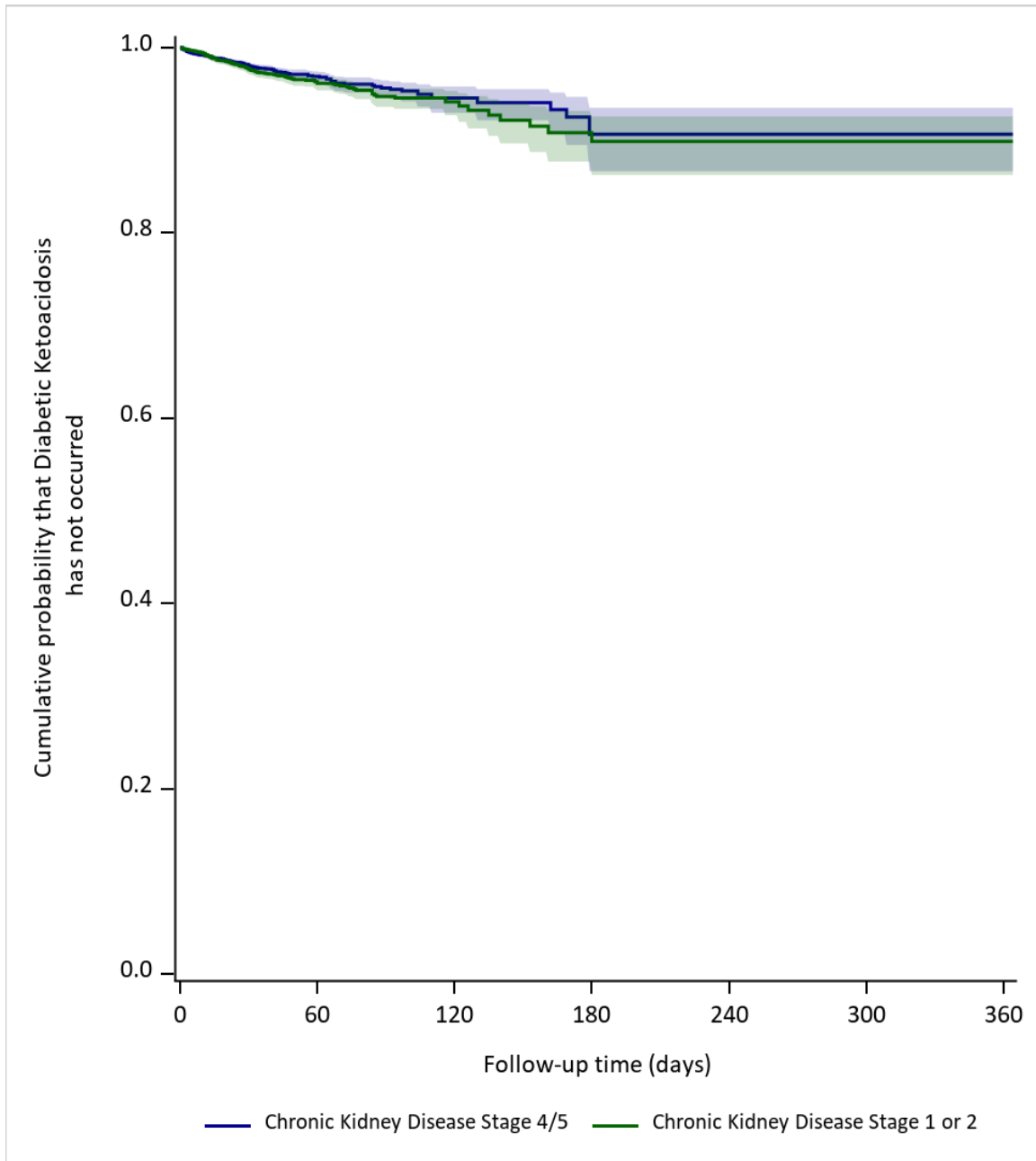


Figure 6p. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

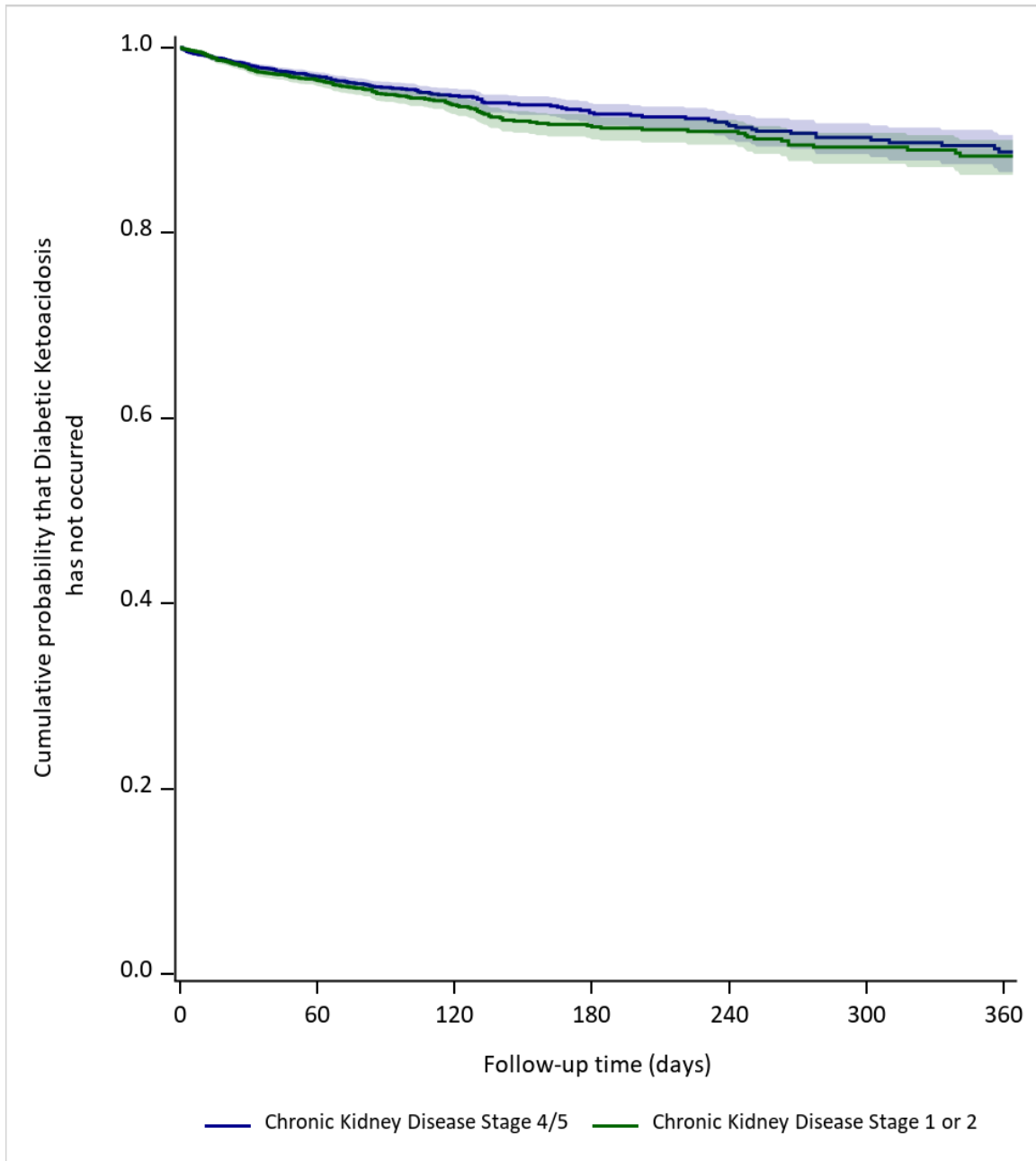


Figure 6q. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: \geq 65 years

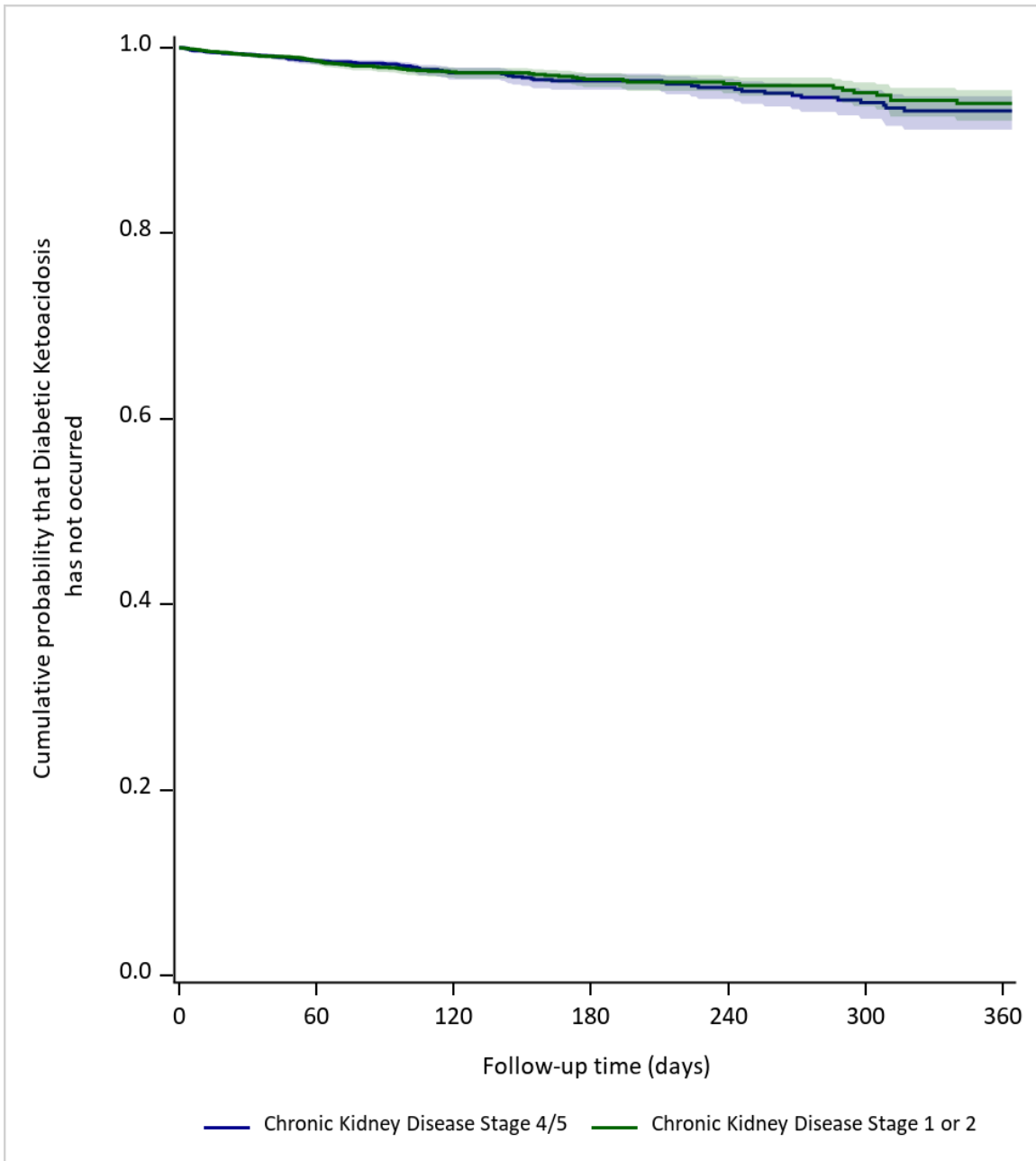


Figure 6r. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

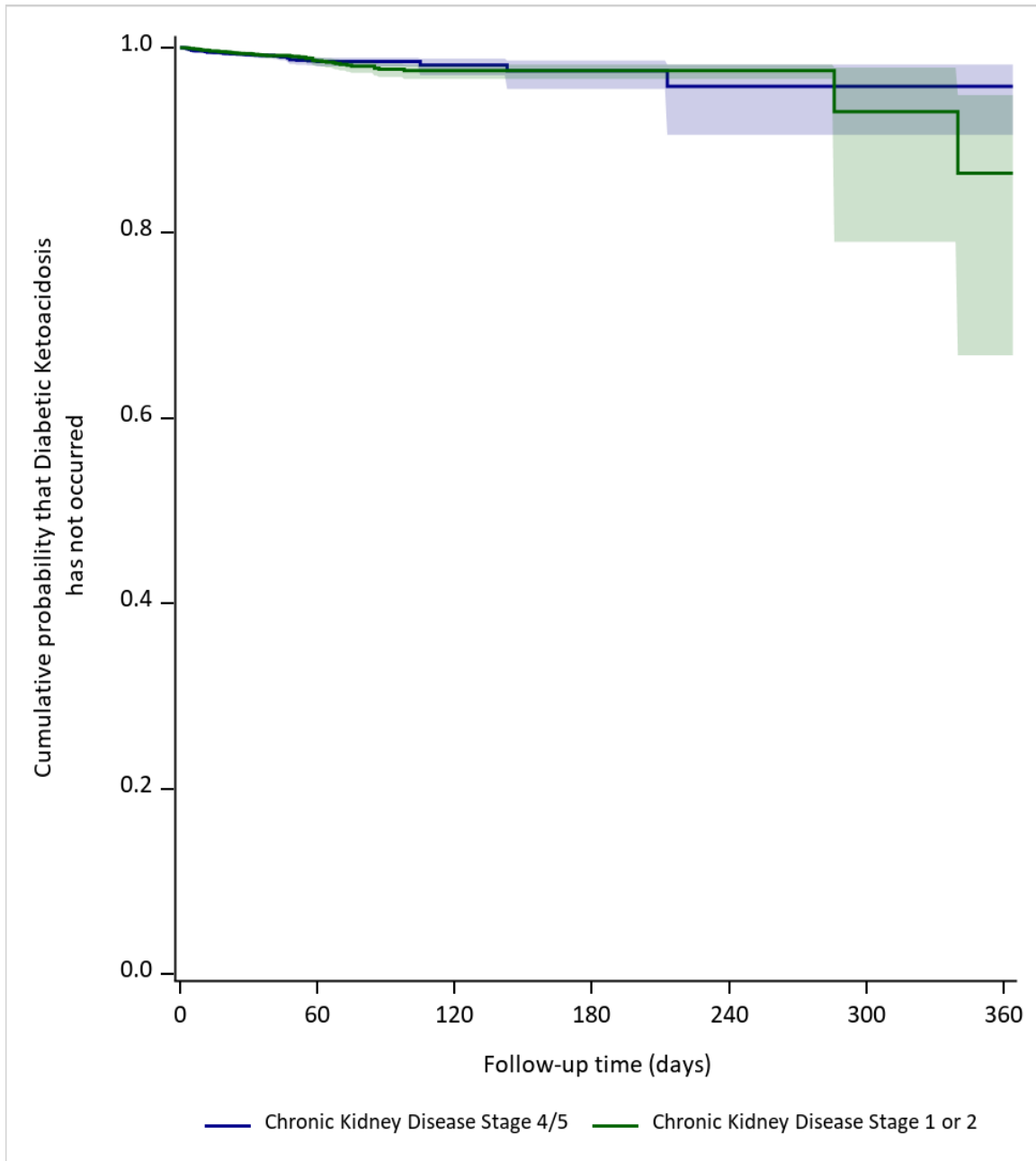


Figure 6s. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

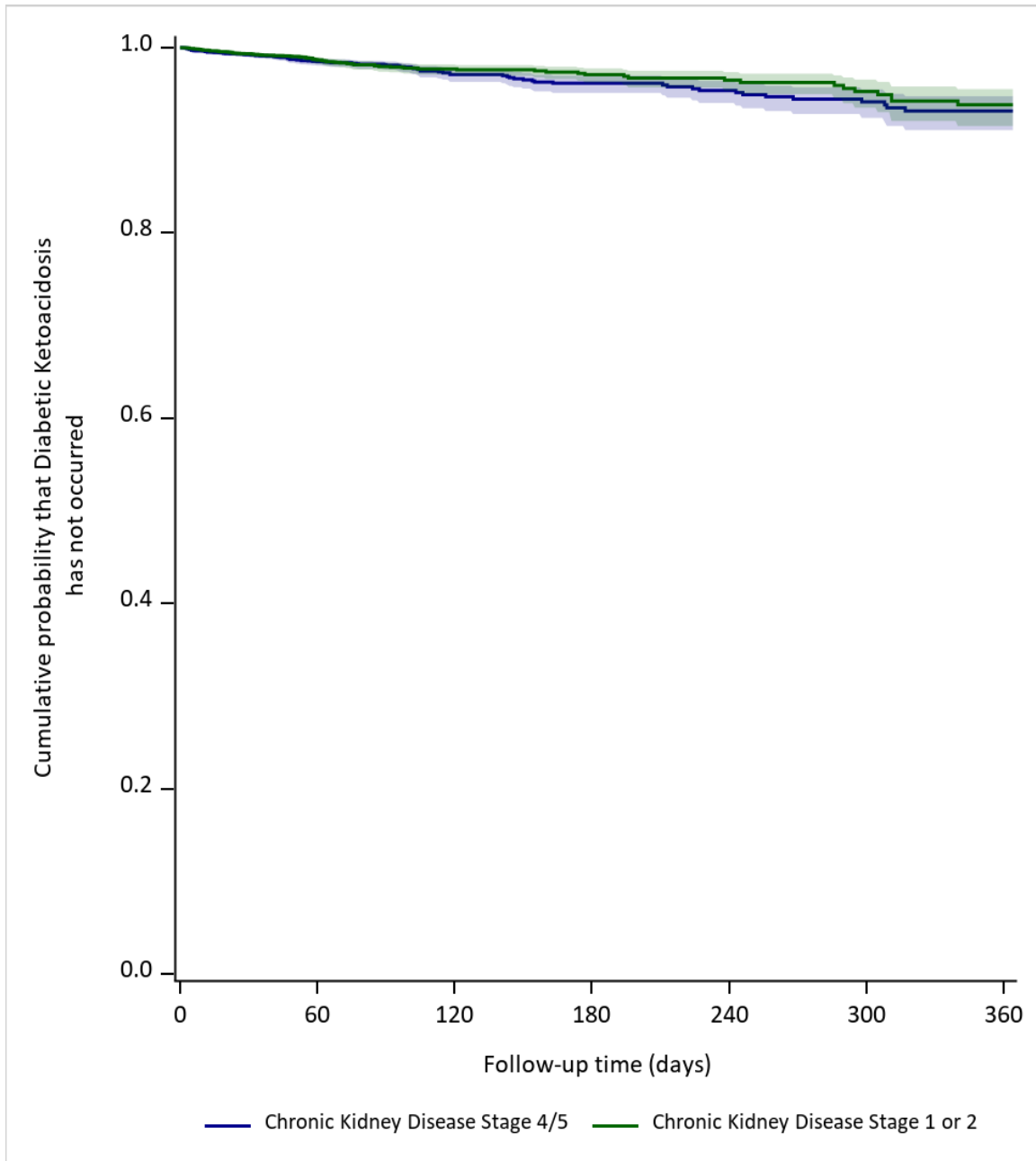


Figure 7a. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

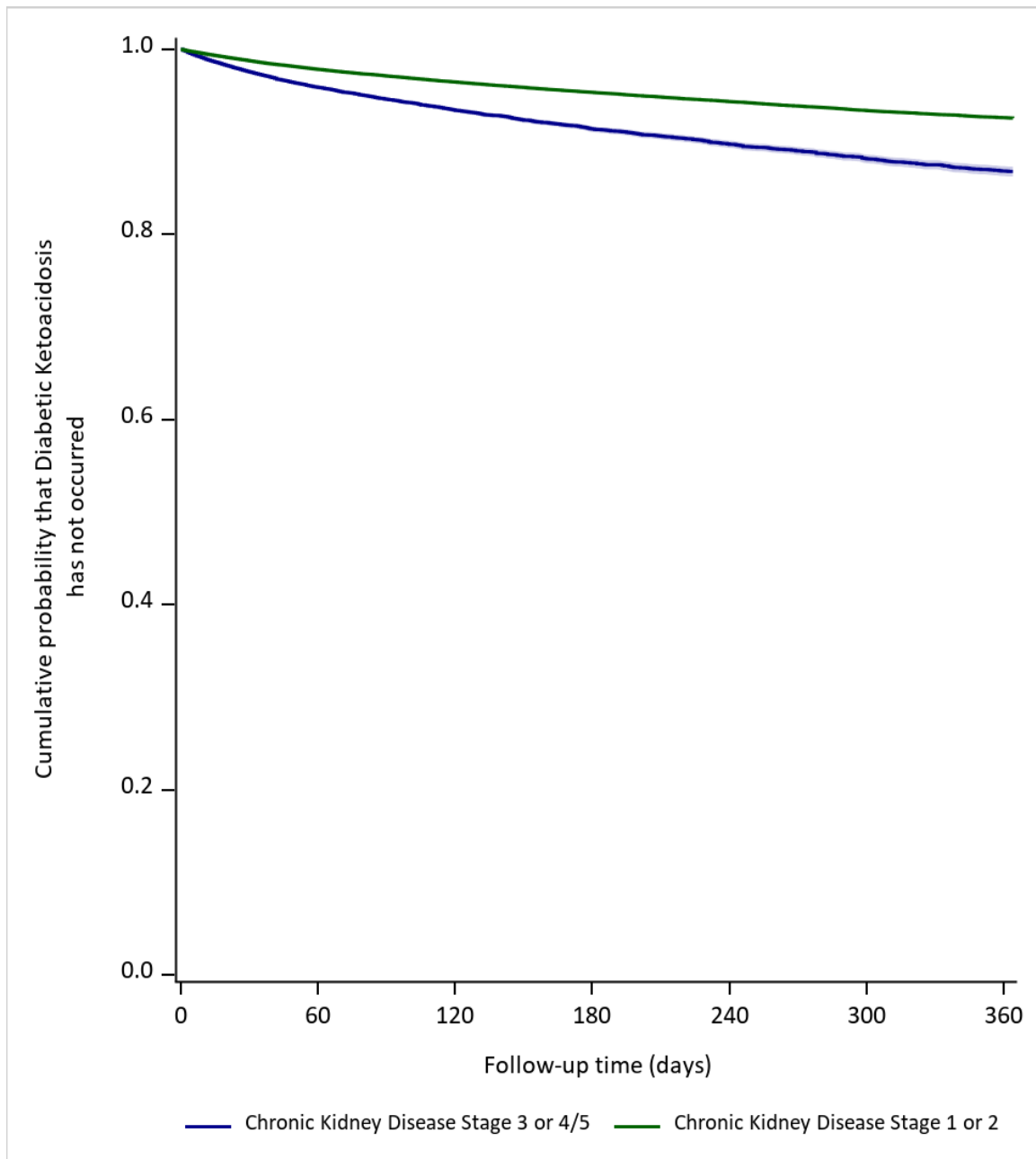


Figure 7b. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

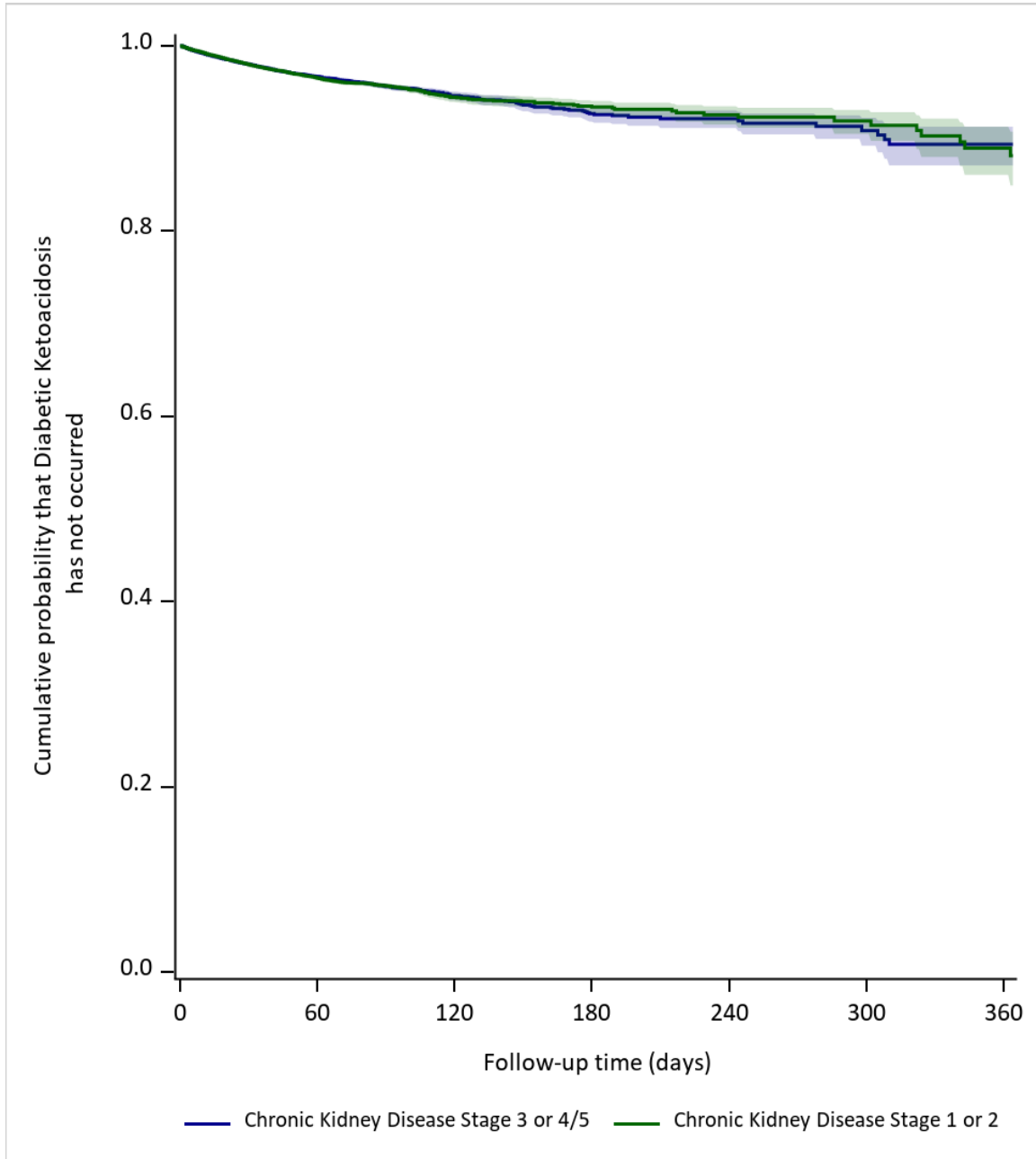


Figure 7c. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024

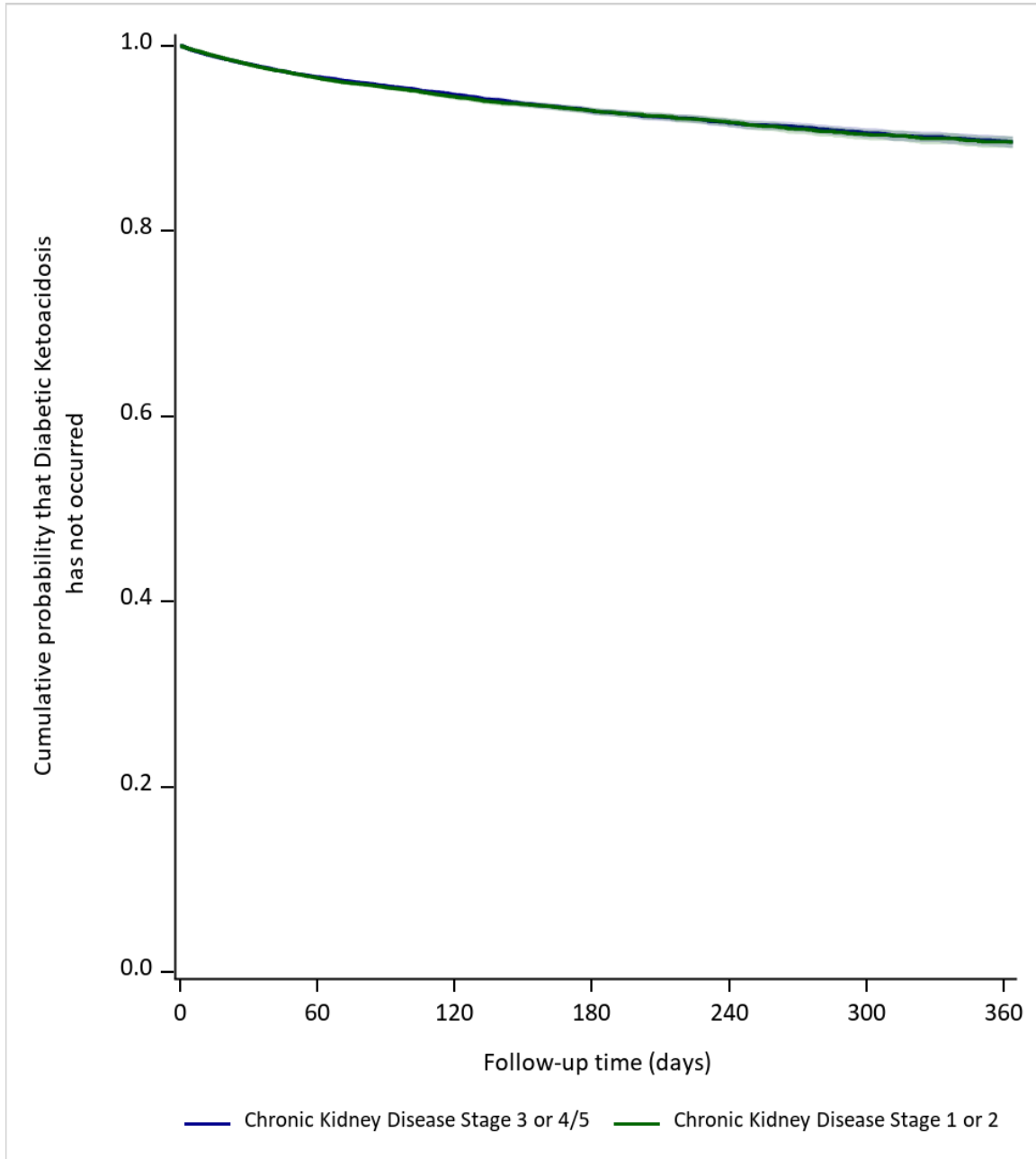


Figure 7d. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

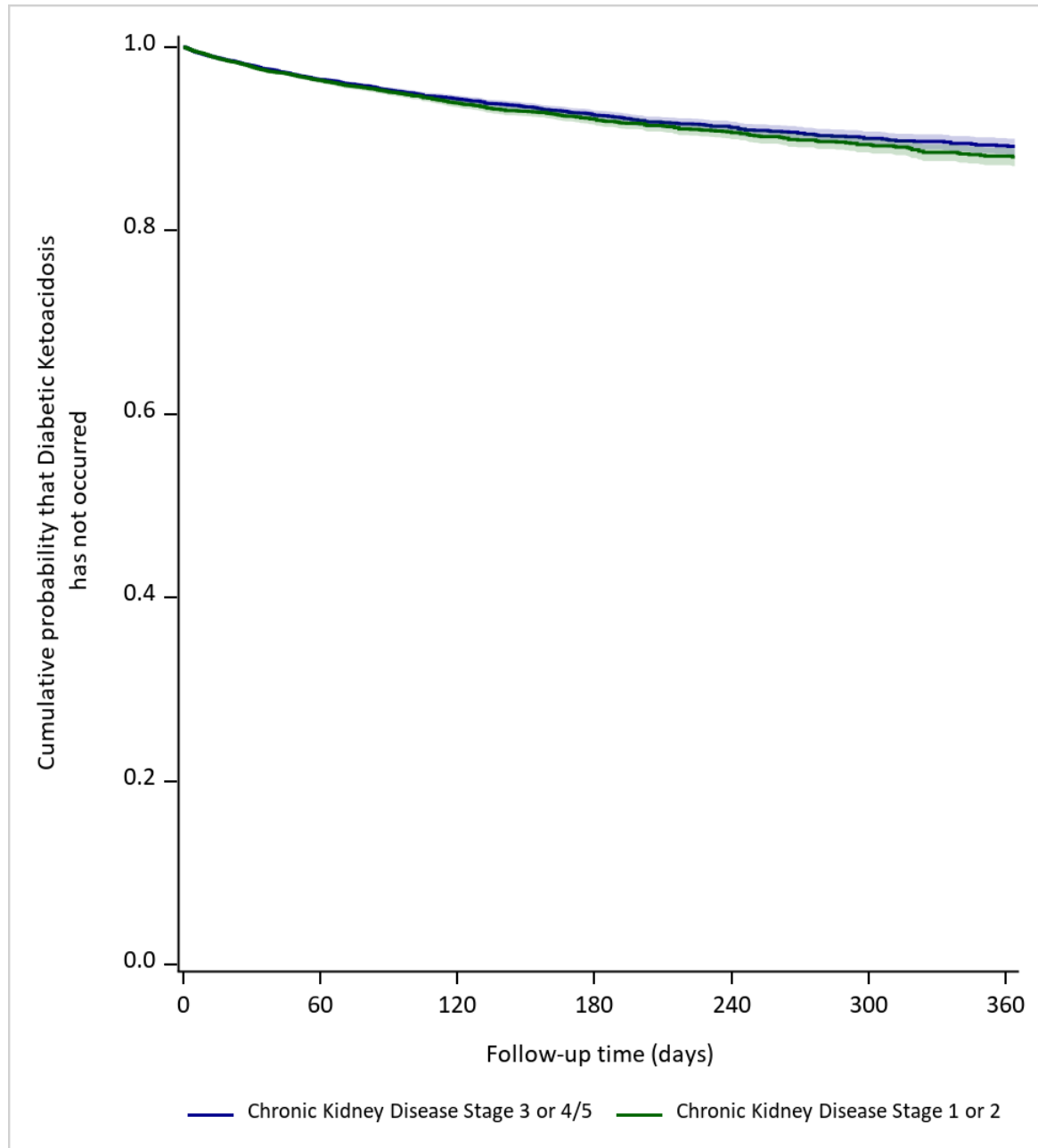


Figure 7e. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

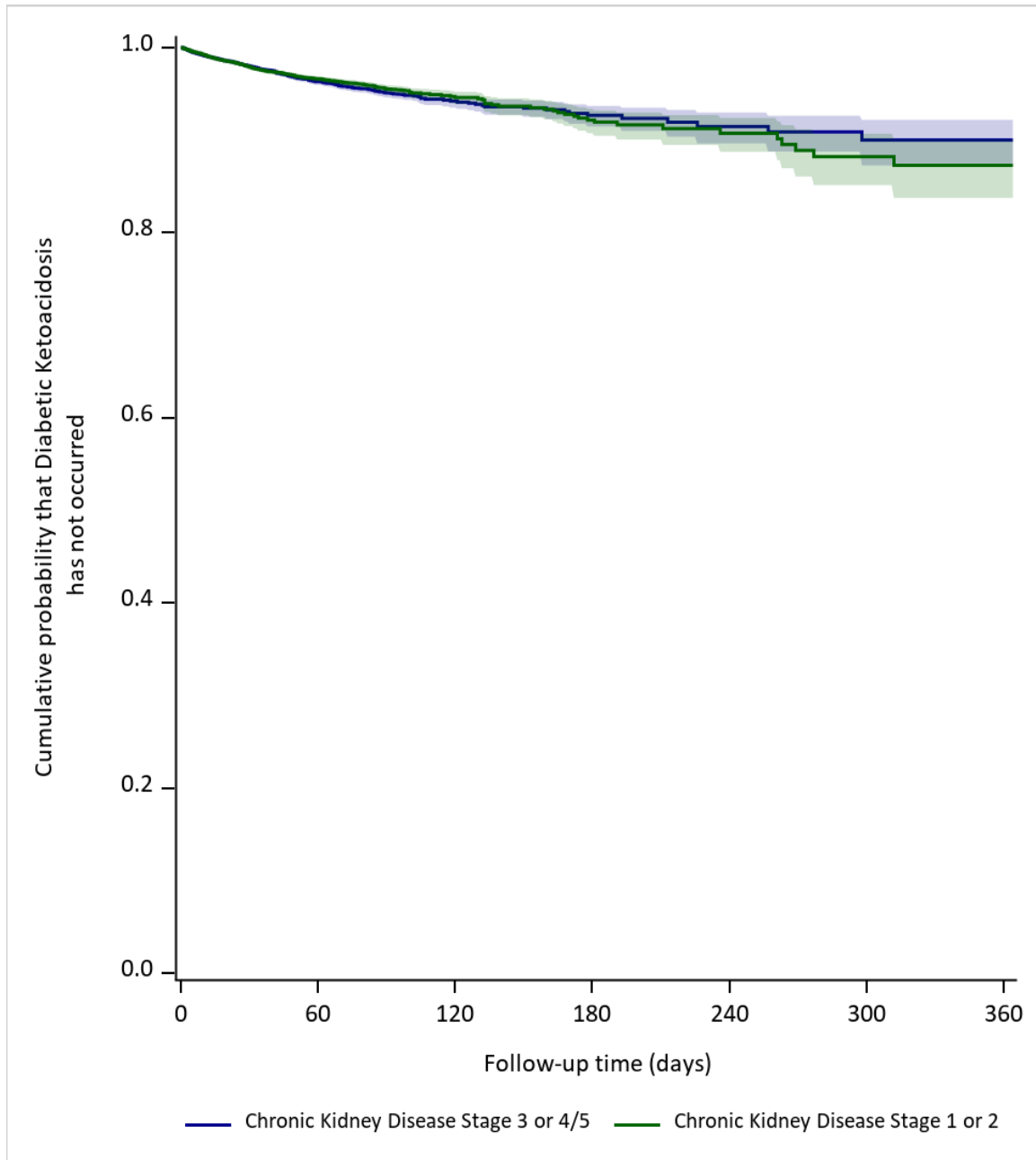


Figure 7f. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Female

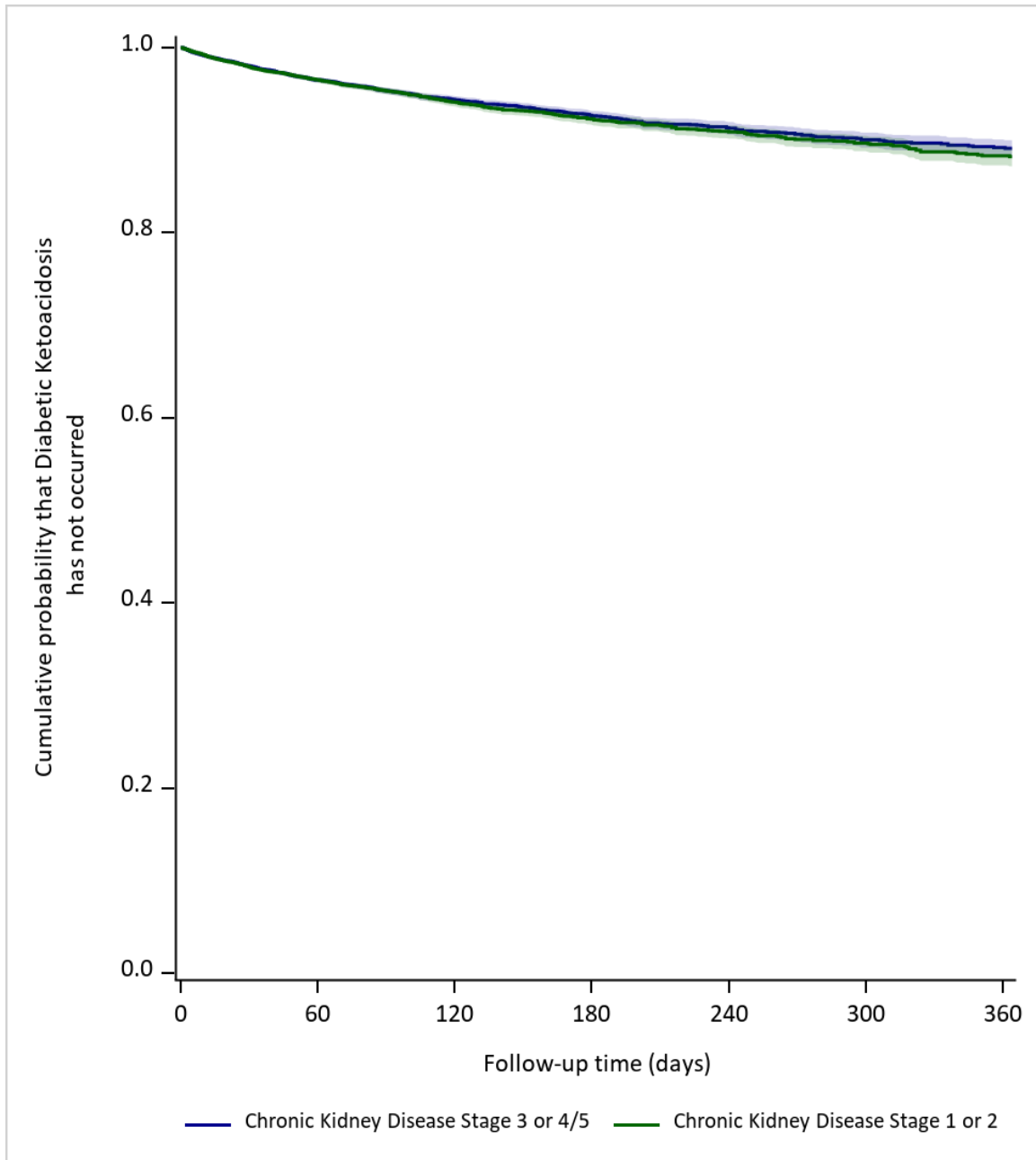


Figure 7g. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

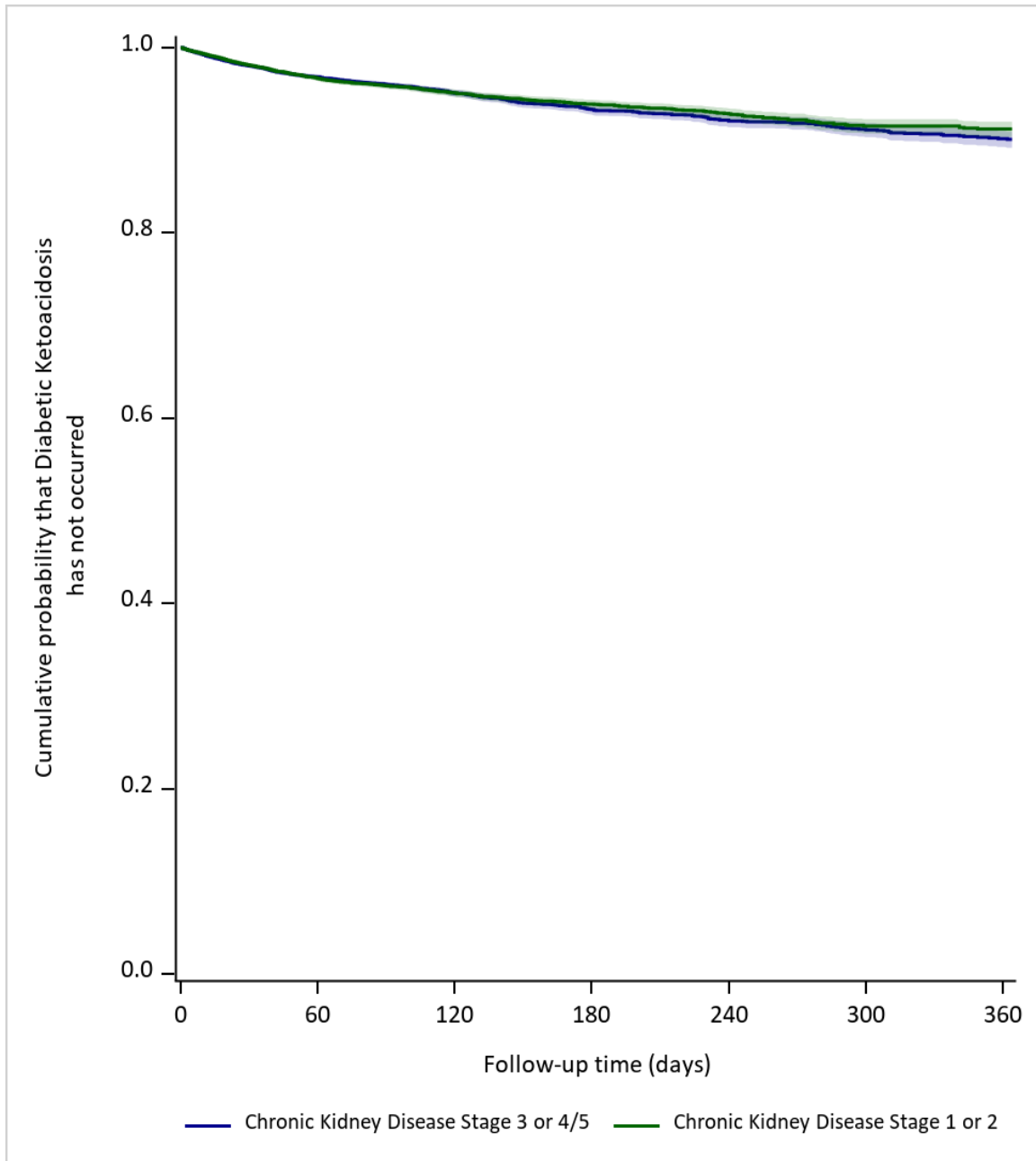


Figure 7h. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

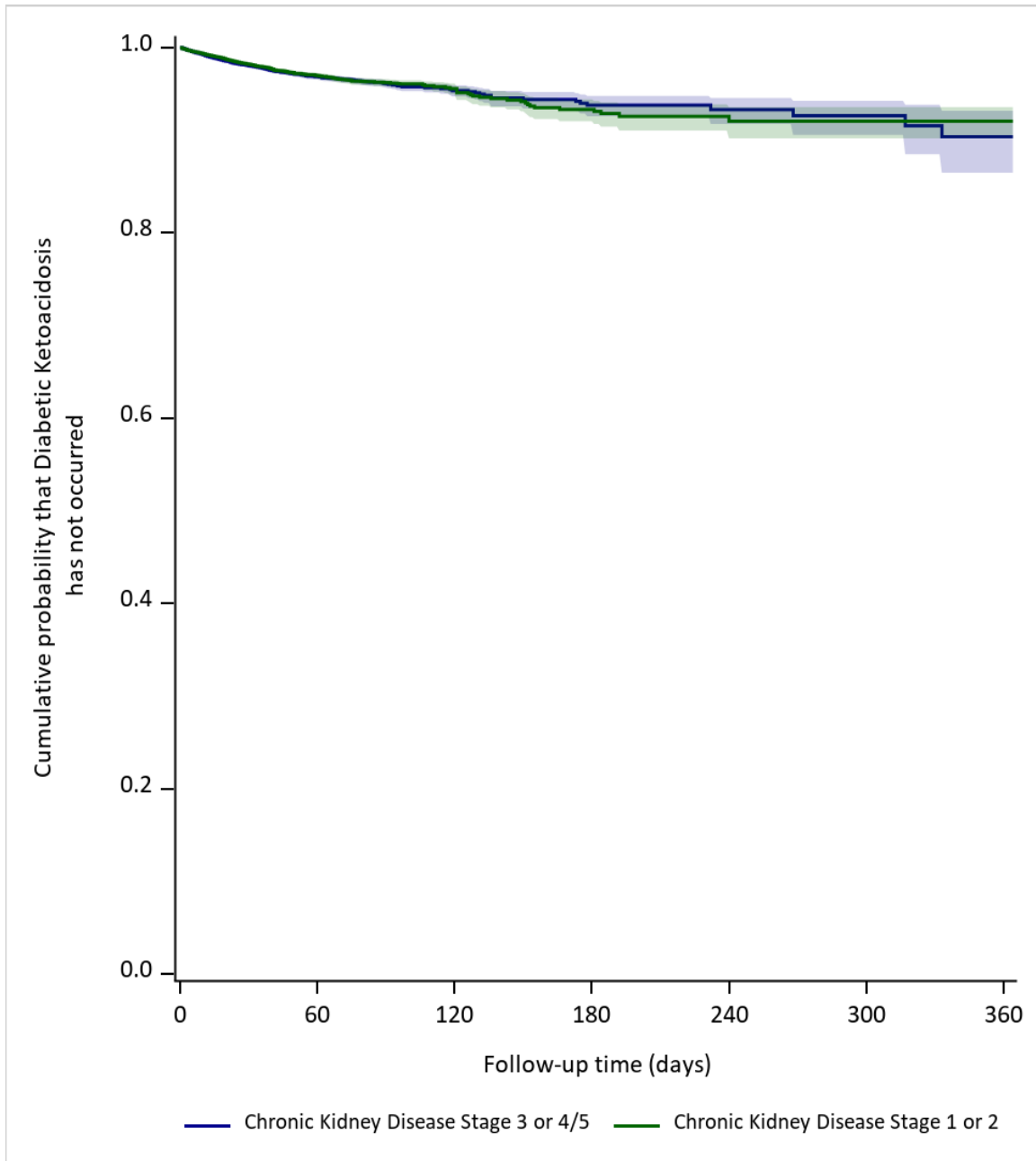


Figure 7i. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Sex: Male

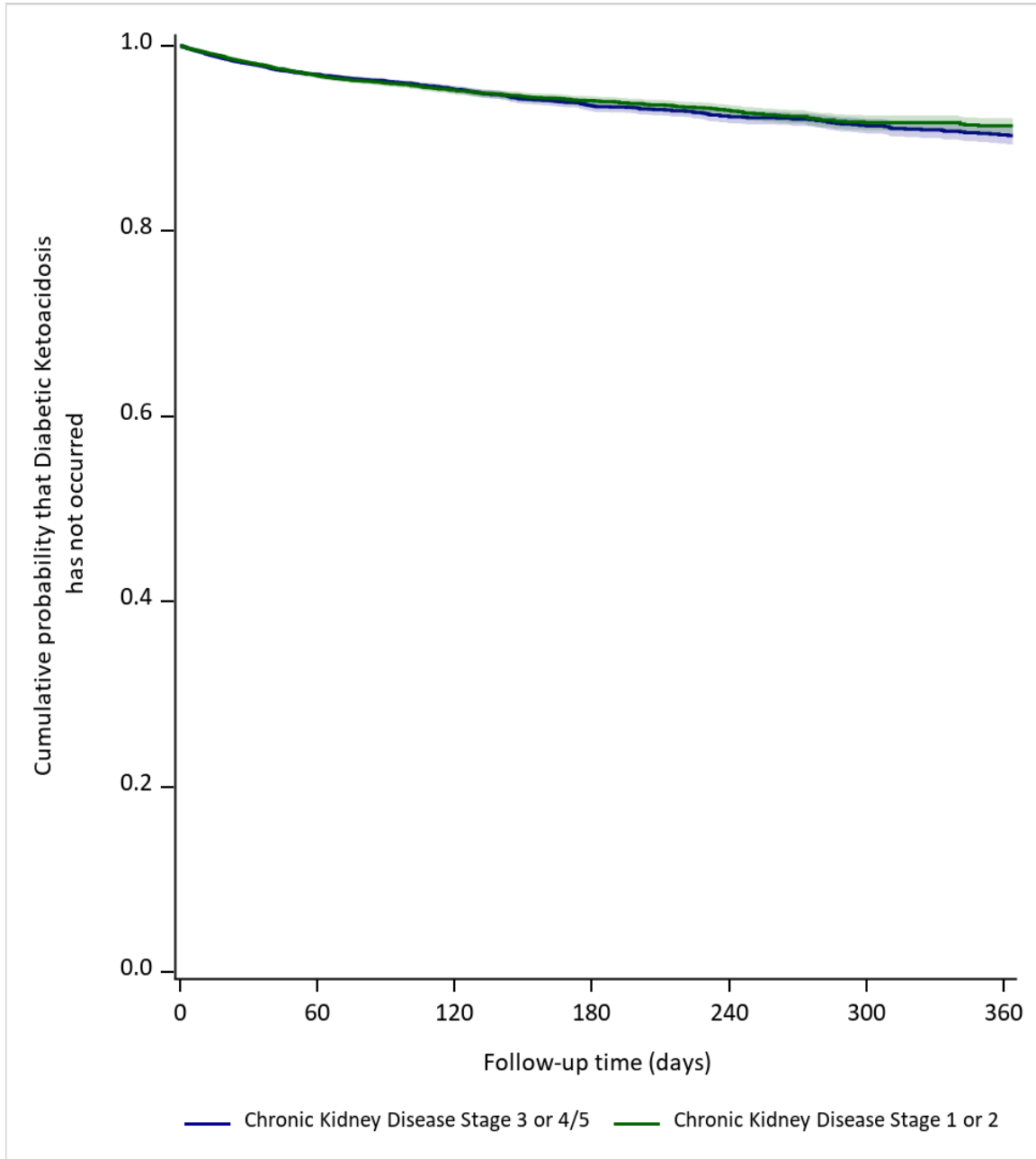


Figure 7j. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 0-11 years

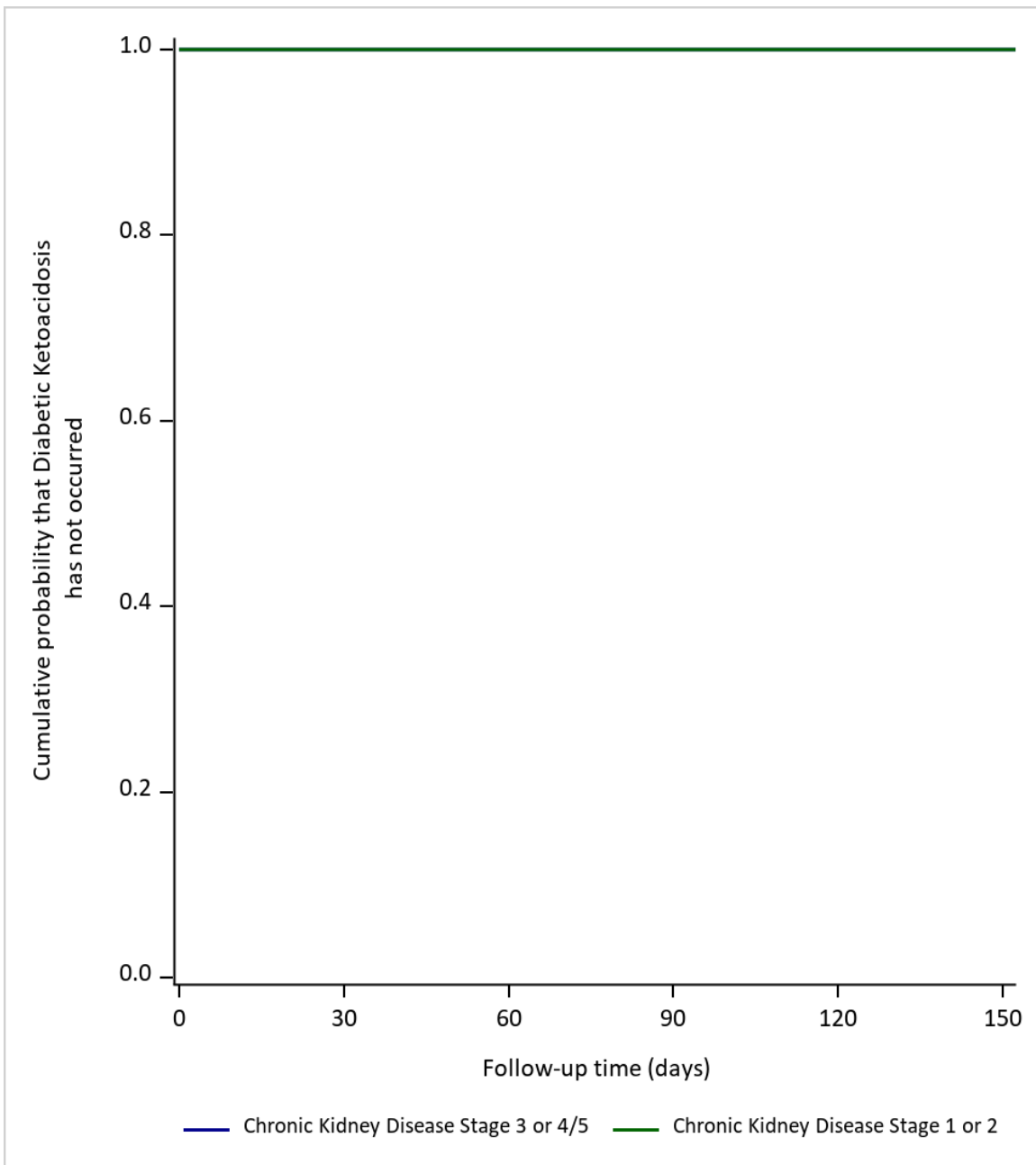


Figure 7k. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

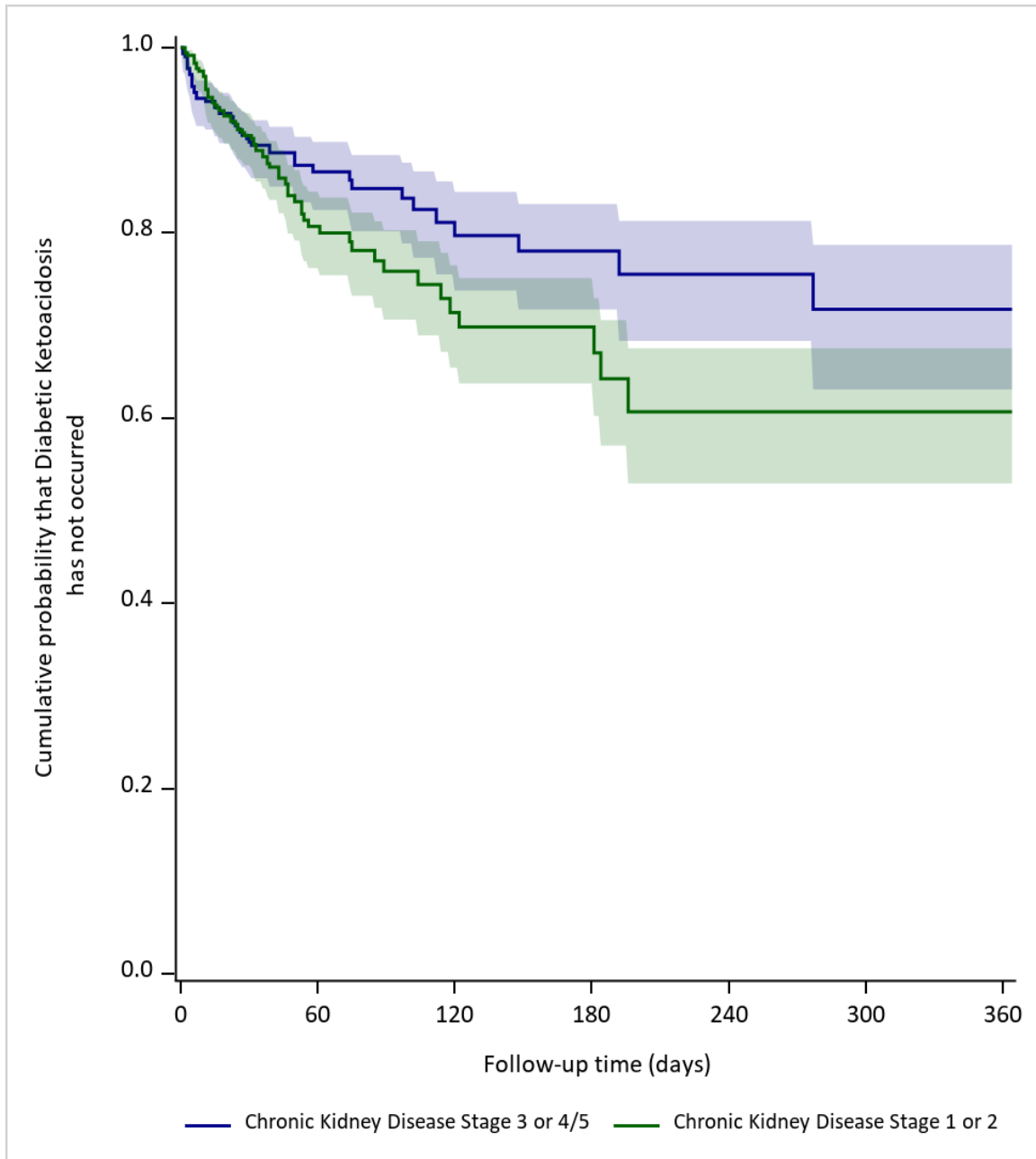


Figure 7I. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

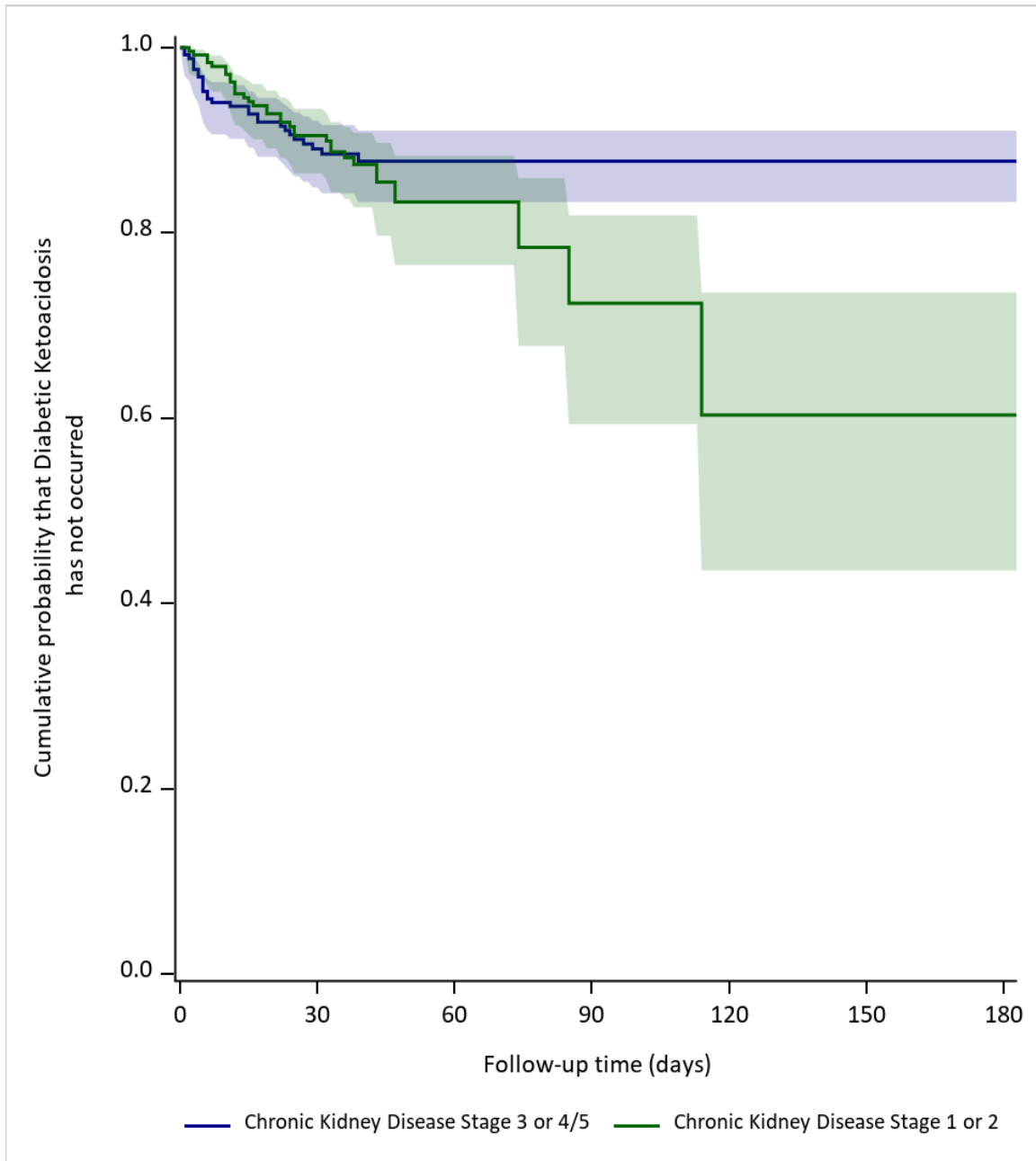


Figure 7m. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 19-24 years

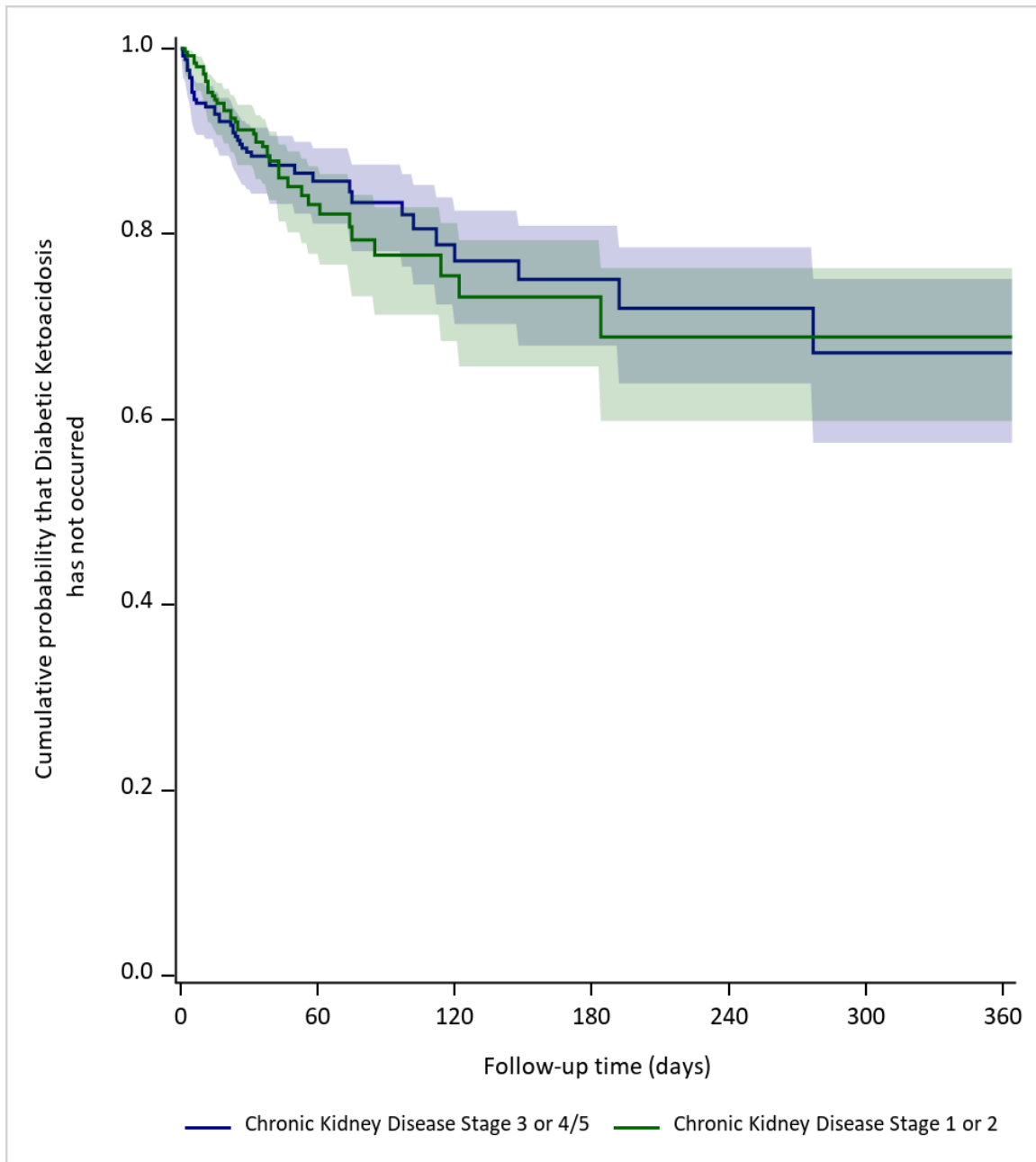


Figure 7n. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

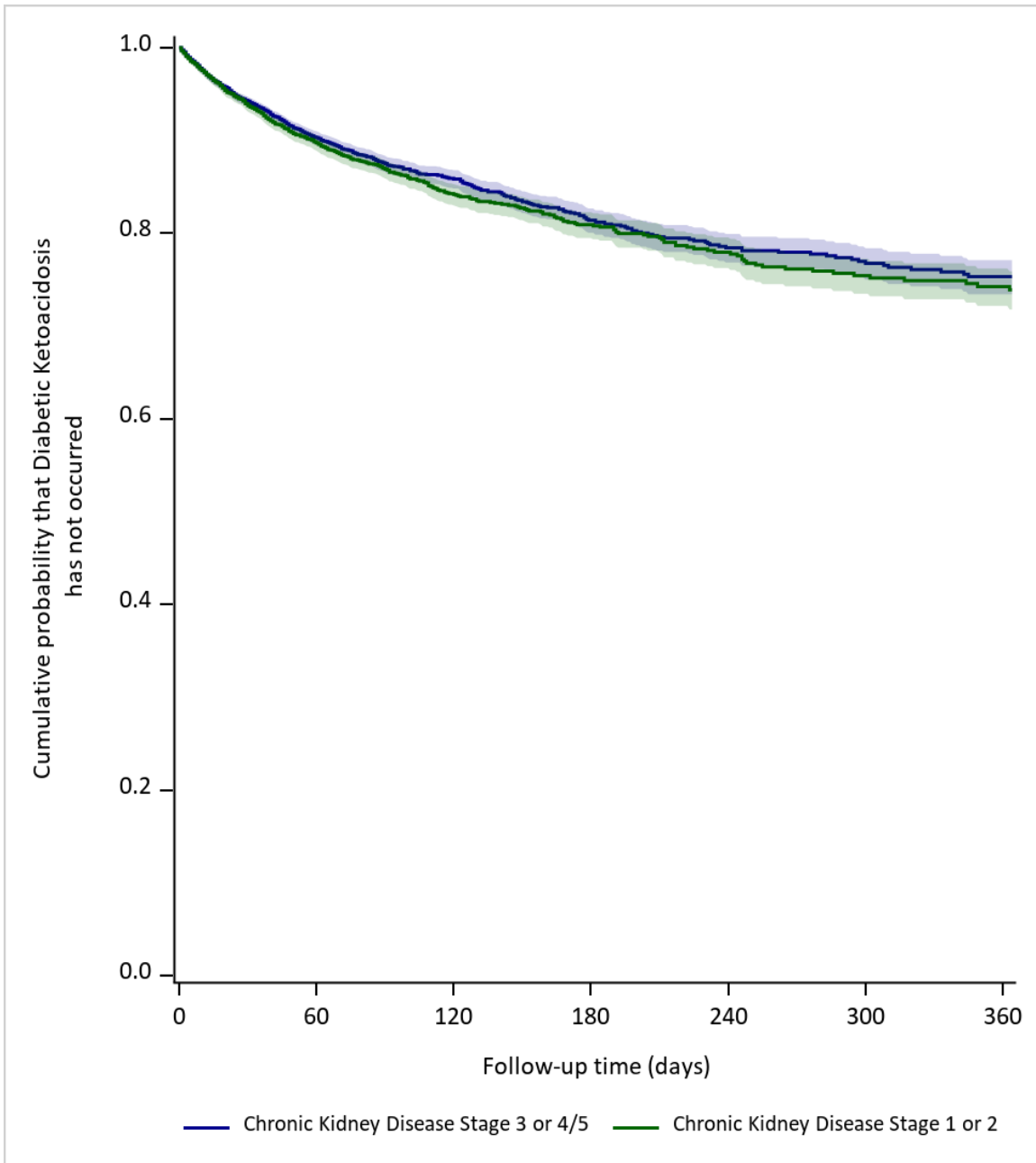


Figure 7o. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

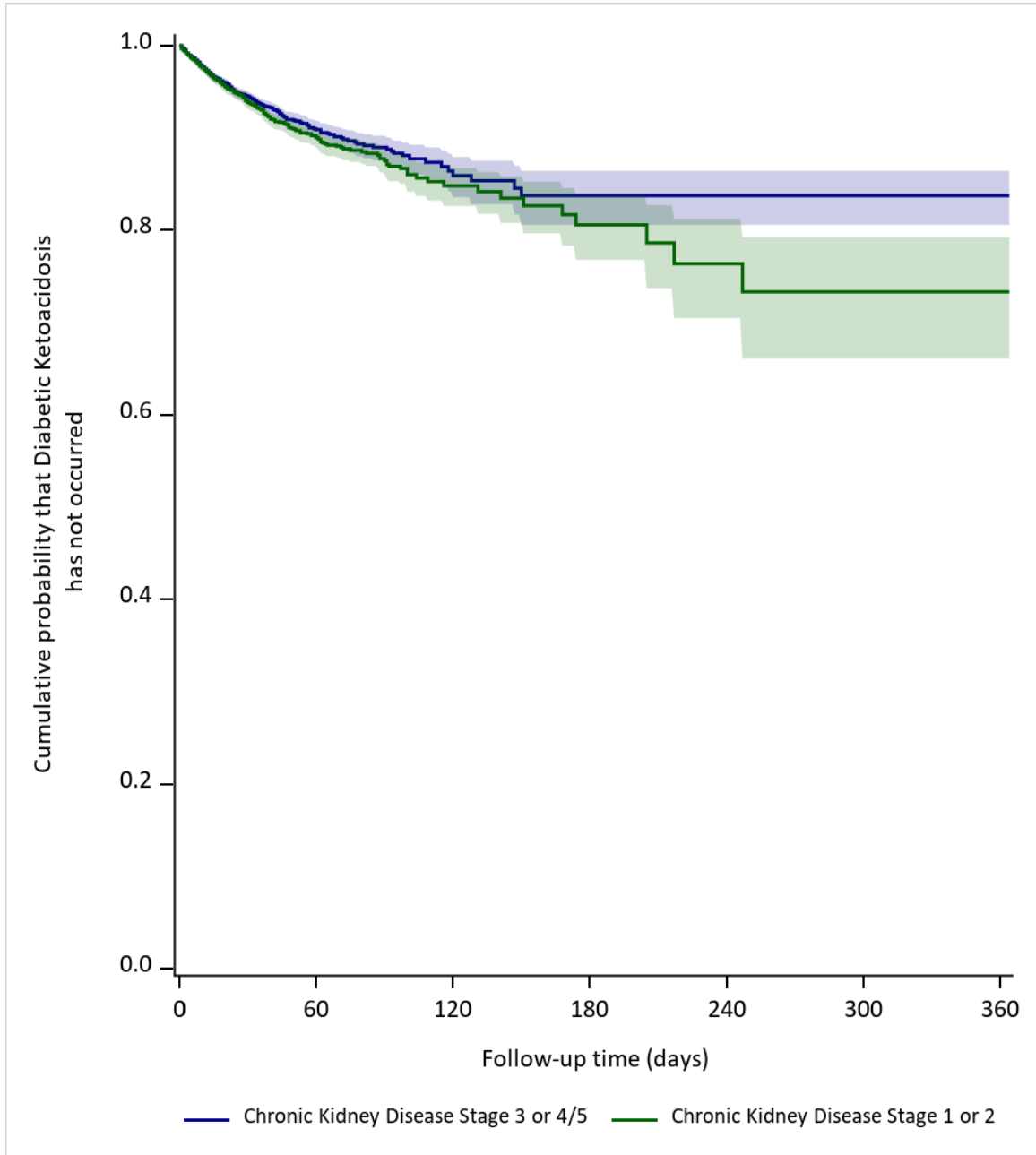


Figure 7p. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 25-44 years

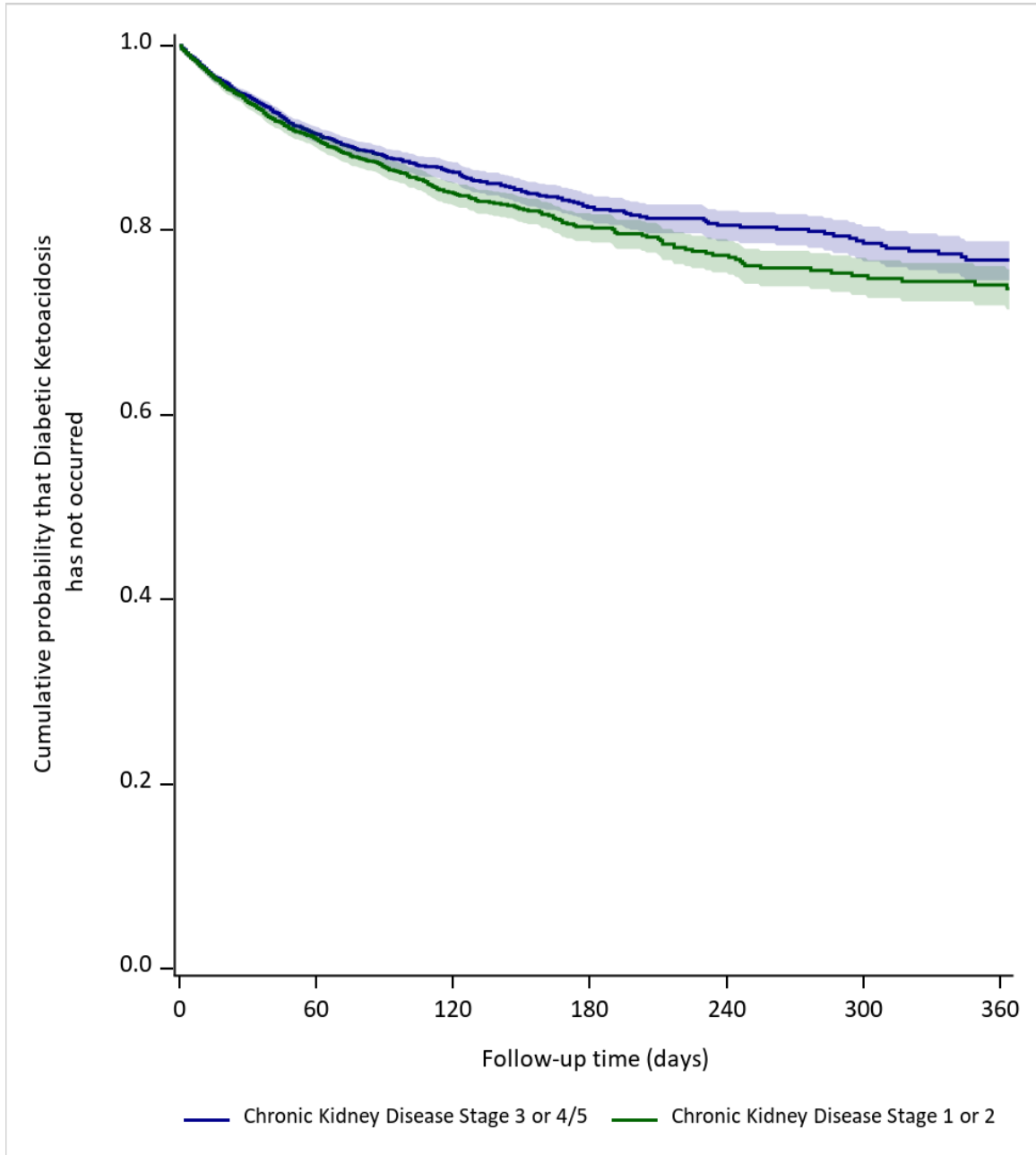


Figure 7q. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

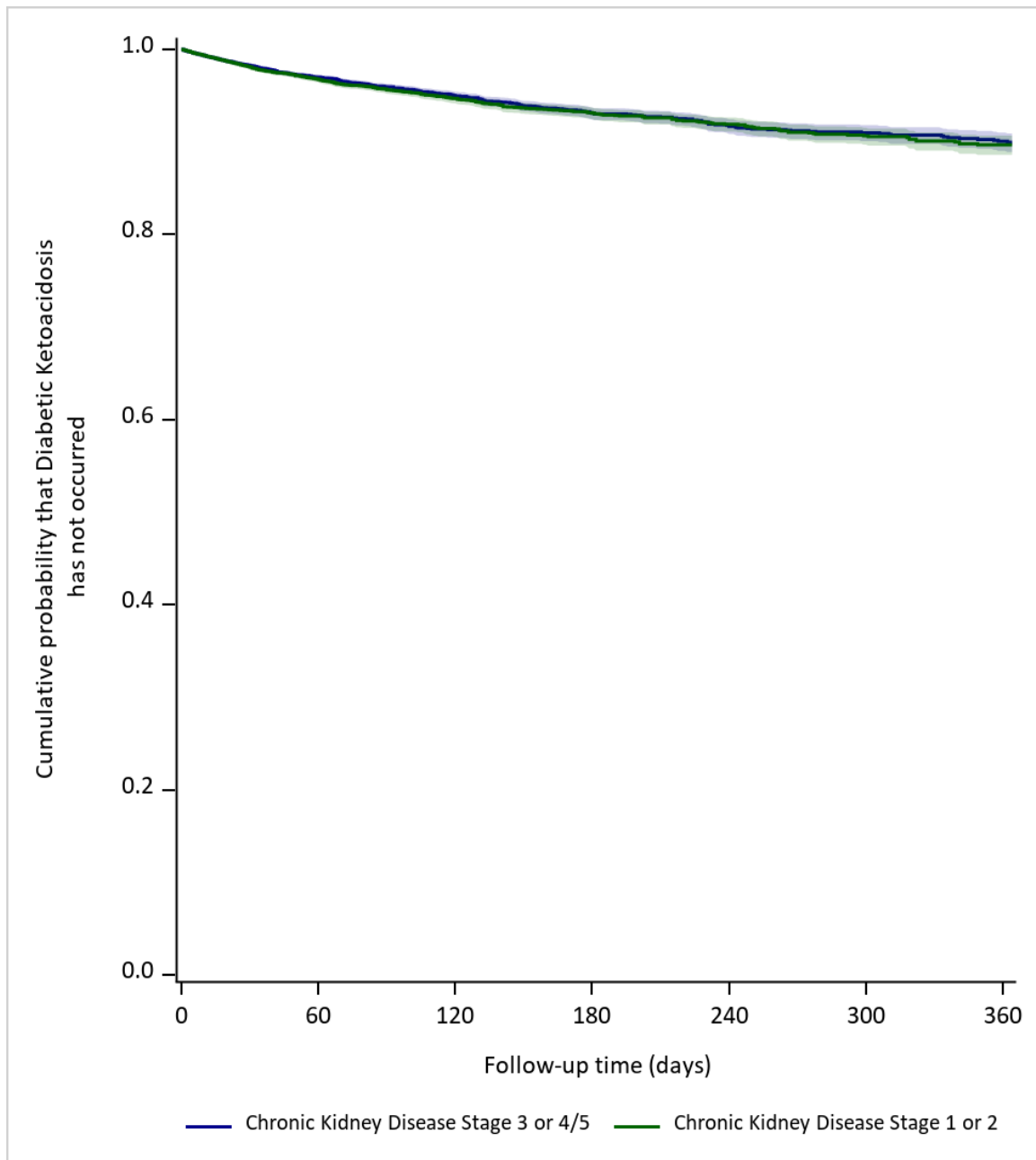


Figure 7r. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

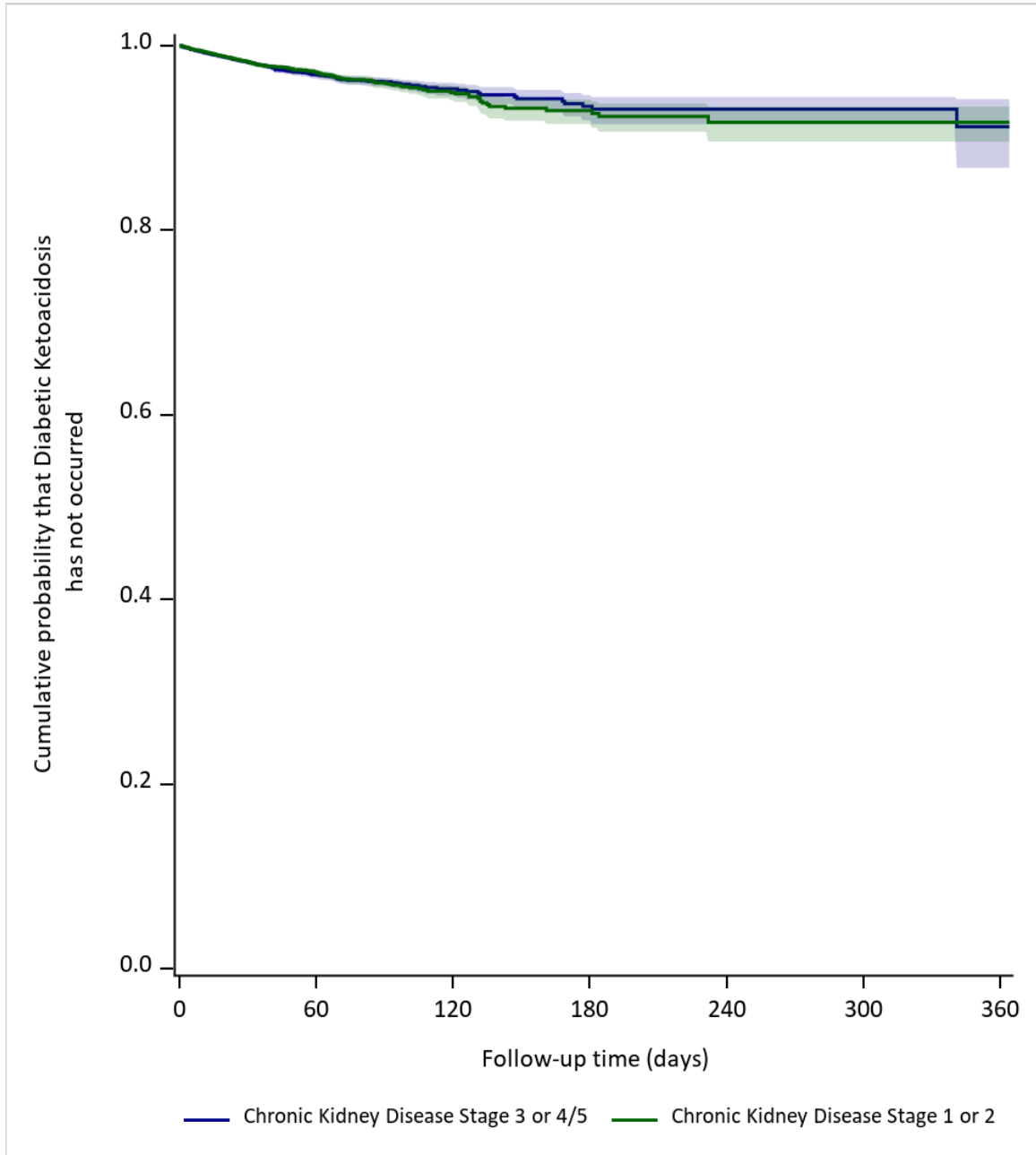


Figure 7s. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: 45-64 years

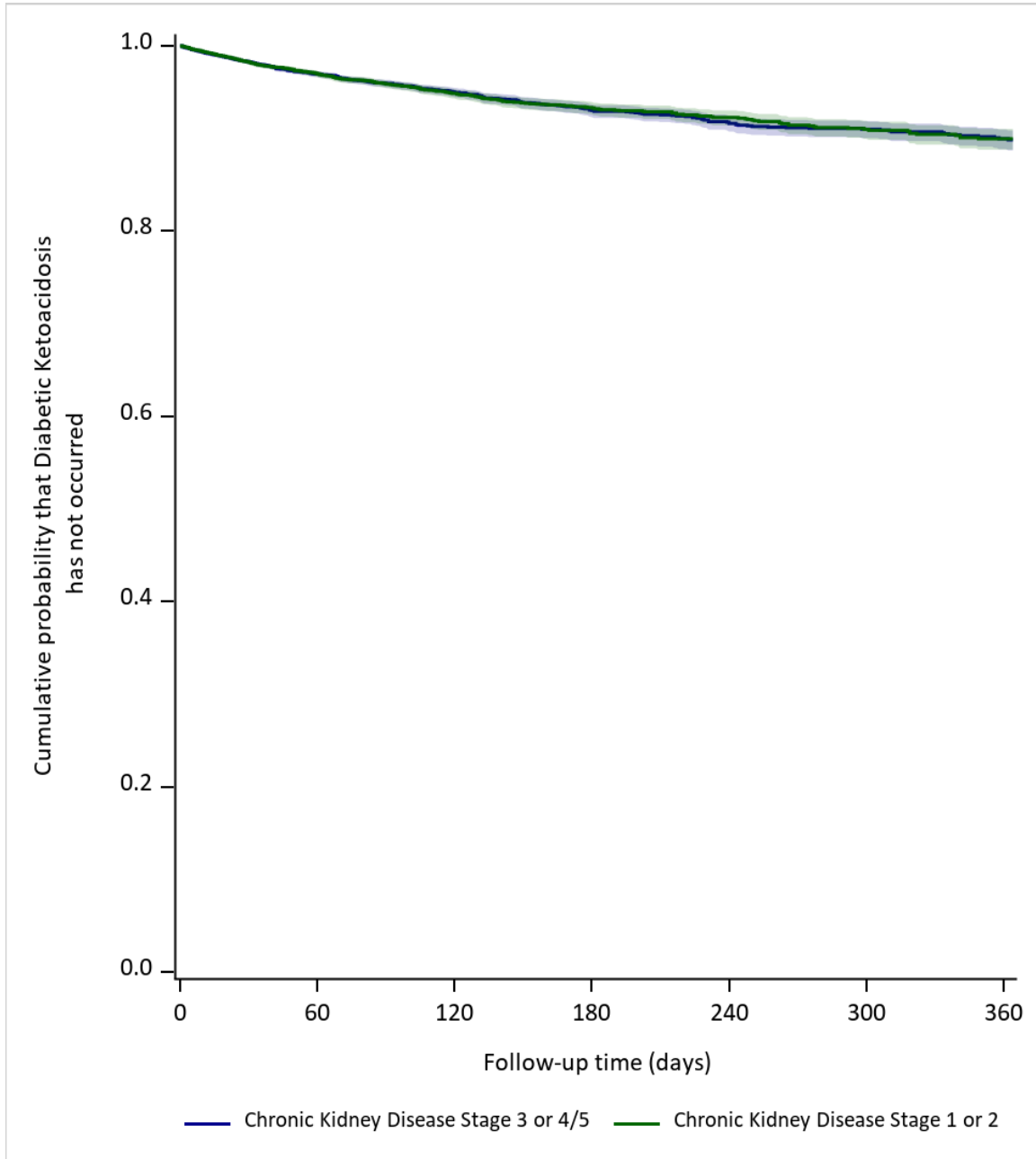


Figure 7t. Aggregated Unadjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Whole Population in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

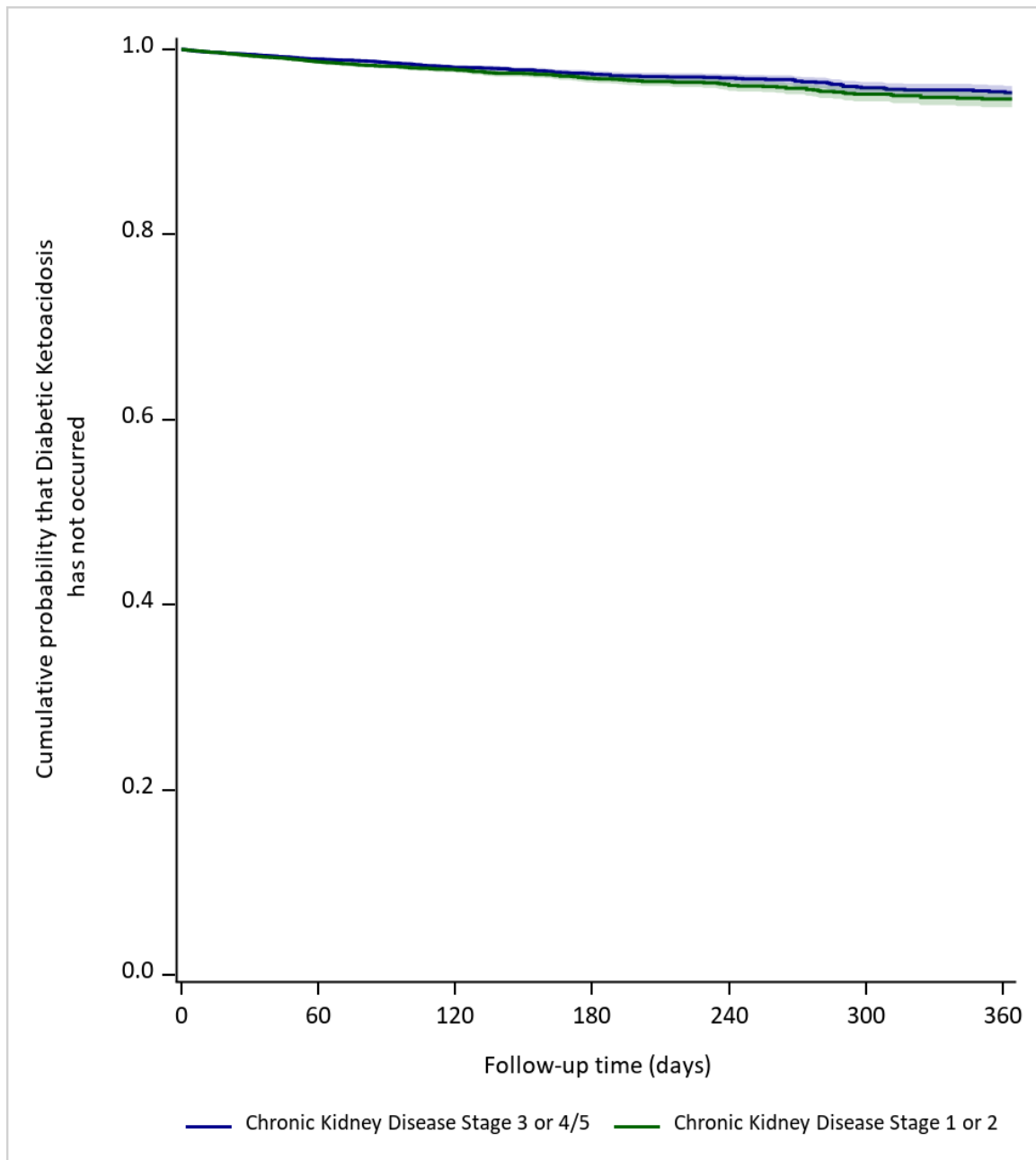


Figure 7u. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Conditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years

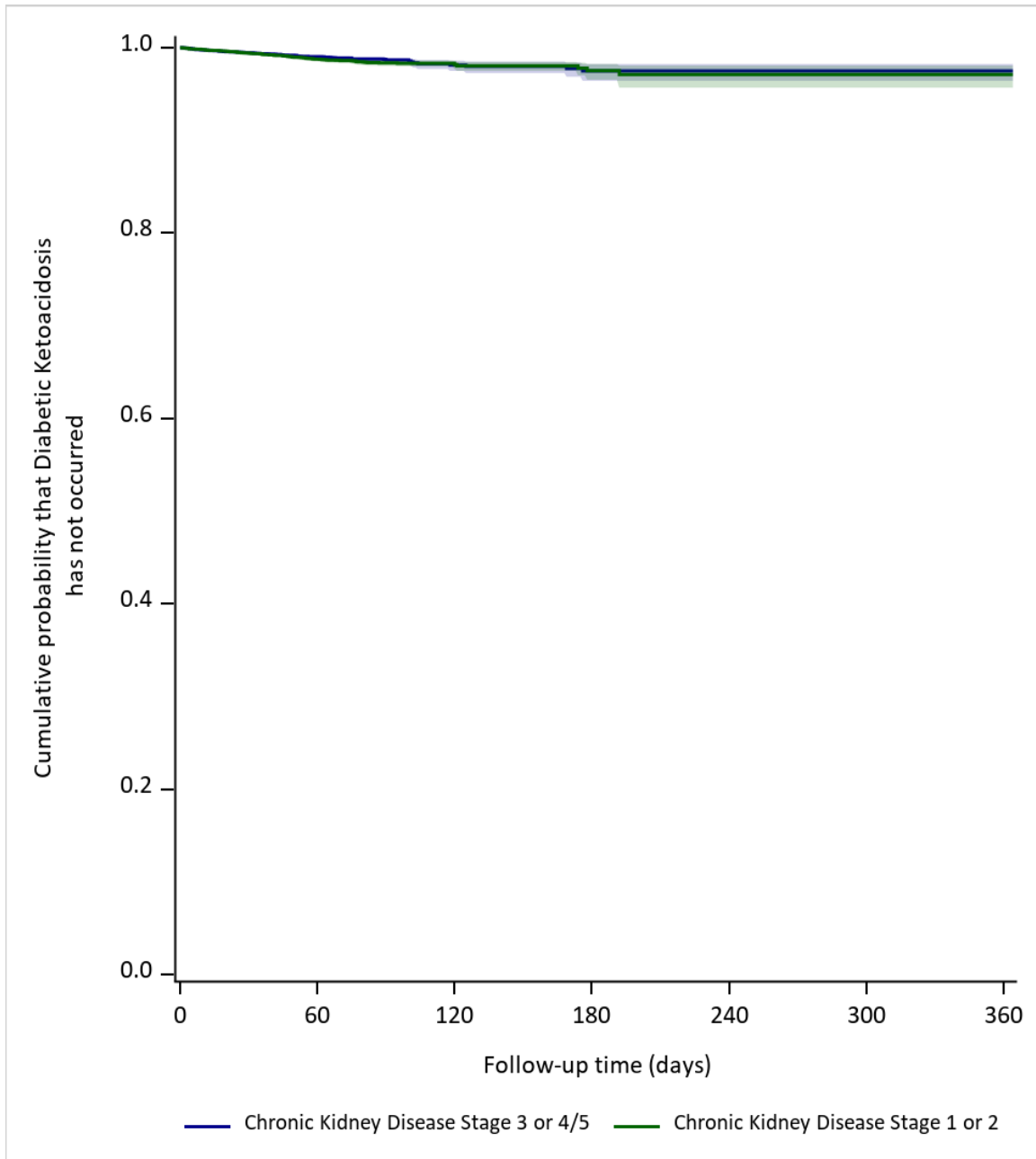
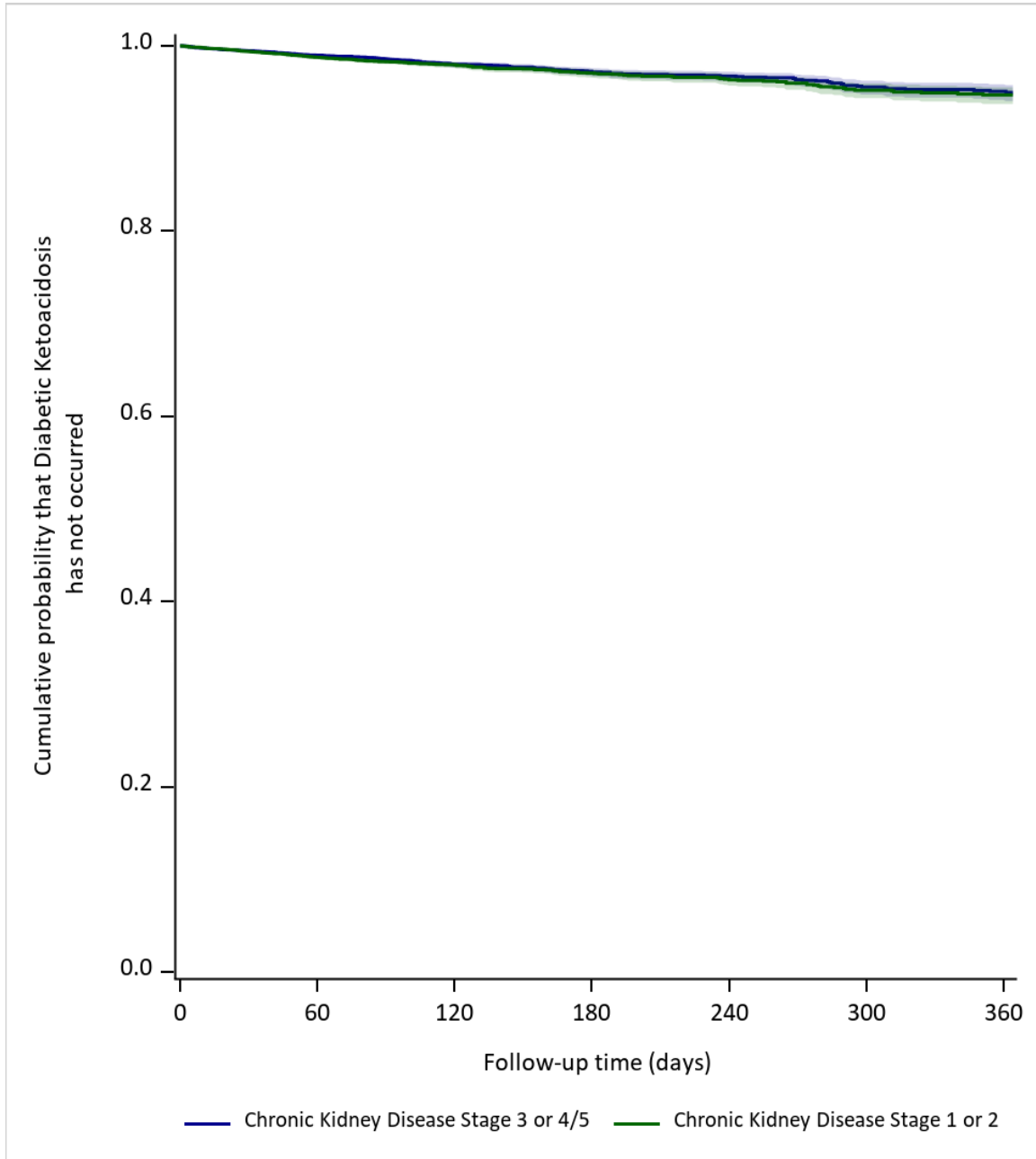


Figure 7v. Aggregated Adjusted Kaplan-Meier Estimate and 95% Confidence Interval of Diabetic Ketoacidosis Not Occurring Among Diabetic Ketoacidosis among Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 from the Unconditional Matched Population after Type 1 Diabetics with Chronic Kidney Disease Stage 3 or 4/5 Compared to Stage 1 or 2 in the Sentinel Distributed Database from March 1, 2013 to February 29, 2024, Age Group: ≥ 65 years



Appendix A. Dates of Available Data for Each Data Partner (DP) as of Request Distribution Date (November 21, 2024)

Masked DP ID	DP Start Date	DP End Date ¹
DP01	01/01/2006	02/29/2024
DP02	01/01/2007	10/31/2023
DP03	01/01/2008	12/31/2023
DP04	01/01/2014	12/31/2021
DP05	01/01/2008	01/31/2024
DP06	01/01/2010	09/30/2023

¹End Date represents the earliest of: (1) query end date, or (2) last day of the most recent month for which all of a Data Partner's data tables (enrollment, dispensing, etc.) have at least 80% of the record count relative to the prior month.

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

Generic Name	Brand Name
Short/Rapid-Acting Insulin	
insulin aspart	Novolog FlexPen U-100 Insulin
insulin aspart	Novolog PenFill U-100 Insulin
insulin aspart	Novolog U-100 Insulin aspart
insulin aspart	insulin aspart U-100
insulin aspart (niacinamide)	Fiasp FlexTouch U-100 Insulin
insulin aspart (niacinamide)	Fiasp Penfill U-100 Insulin
insulin aspart (niacinamide)	Fiasp U-100 Insulin
insulin aspart (niacinamide)/pump cartridge	Fiasp Pumpcart
insulin glulisine	Apidra SoloStar U-100 Insulin
insulin glulisine	Apidra U-100 Insulin
insulin lispro	Admelog SoloStar U-100 Insulin
insulin lispro	Admelog U-100 Insulin lispro
insulin lispro	Humalog Junior KwikPen U-100
insulin lispro	Humalog KwikPen Insulin
insulin lispro	Humalog Tempo Pen(U-100)Insuln
insulin lispro	Humalog U-100 Insulin
insulin lispro	insulin lispro
insulin lispro-aabc	Lyumjev KwikPen U-100 Insulin
insulin lispro-aabc	Lyumjev KwikPen U-200 Insulin
insulin lispro-aabc	Lyumjev Tempo Pen(U-100)Insuln
insulin lispro-aabc	Lyumjev U-100 Insulin
insulin regular, human	Afrezza
insulin regular, human	Humulin R Regular U-100 Insuln
insulin regular, human	Humulin R U-500 (Conc) Insulin
insulin regular, human	Humulin R U-500 (Conc) Kwikpen
insulin regular, human	Novolin R FlexPen
insulin regular, human	Novolin R Regular U100 Insulin
insulin regular, human in 0.9 % sodium chloride	Myxredlin

Appendix C. List of Healthcare Common Procedure Coding System, Level II (HCPCS) Codes Used to Define Exposures in this Request

Code	Description	Code Category	Code Type
Short/Rapid-Acting Insulin			
S5550	Insulin, rapid onset, 5 units	Procedure	HCPCS
S5551	Insulin, most rapid onset (Lispro or Aspart); 5 units	Procedure	HCPCS

Appendix D. 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) Codes Used to Define Outcomes in this Request

Code	Description	Code Category	Code Type
Diabetic Ketoacidosis			
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
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
E11.10	Type 2 diabetes mellitus with ketoacidosis without coma	Diagnosis	ICD-10-CM
E11.11	Type 2 diabetes mellitus with ketoacidosis 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

Appendix E. 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) Codes Used to Define Inclusion Criteria in this Request

Code	Description	Code Category	Code Type
Type 1 Diabetes			
250.01	Diabetes mellitus without mention of complication, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.03	Diabetes mellitus without mention of complication, type I [juvenile type],	Diagnosis	ICD-9-CM
250.11	Diabetes with ketoacidosis, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.13	Diabetes with ketoacidosis, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.21	Diabetes with hyperosmolarity, type I [juvenile 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
250.33	Diabetes with other coma, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.41	Diabetes with renal manifestations, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.43	Diabetes with renal manifestations, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.51	Diabetes with ophthalmic manifestations, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.53	Diabetes with ophthalmic manifestations, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.61	Diabetes with neurological manifestations, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.63	Diabetes with neurological manifestations, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.71	Diabetes with peripheral circulatory disorders, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.73	Diabetes with peripheral circulatory disorders, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.81	Diabetes with other specified manifestations, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.83	Diabetes with other specified manifestations, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
250.91	Diabetes with unspecified complication, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM
250.93	Diabetes with unspecified complication, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-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	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

Appendix E. 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) Codes Used to Define Inclusion Criteria in this Request

Code	Description	Code Category	Code Type
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
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

Appendix E. 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) Codes Used to Define Inclusion Criteria in this Request

Code	Description	Code Category	Code Type
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
E10.3513	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3519	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.3521	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM
E10.3522	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E10.3523	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM
E10.3529	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E10.3531	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM
E10.3532	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E10.3533	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E10.3539	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E10.3541	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E10.3542	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E10.3543	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM
E10.3549	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified	Diagnosis	ICD-10-CM
E10.3551	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM
E10.3552	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM
E10.3553	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
E10.3559	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, unspecified	Diagnosis	ICD-10-CM
E10.359	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E10.3591	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E10.3592	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM

Appendix E. 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) Codes Used to Define Inclusion Criteria in this Request

Code	Description	Code Category	Code Type
E10.3593	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3599	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.36	Type 1 diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E10.37X1	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, right eye	Diagnosis	ICD-10-CM
E10.37X2	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, left eye	Diagnosis	ICD-10-CM
E10.37X3	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, bilateral	Diagnosis	ICD-10-CM
E10.37X9	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, unspecified eye	Diagnosis	ICD-10-CM
E10.39	Type 1 diabetes mellitus with other diabetic ophthalmic complication	Diagnosis	ICD-10-CM
E10.40	Type 1 diabetes mellitus with diabetic neuropathy, unspecified	Diagnosis	ICD-10-CM
E10.41	Type 1 diabetes mellitus with diabetic mononeuropathy	Diagnosis	ICD-10-CM
E10.42	Type 1 diabetes mellitus with diabetic polyneuropathy	Diagnosis	ICD-10-CM
E10.43	Type 1 diabetes mellitus with diabetic autonomic (poly)neuropathy	Diagnosis	ICD-10-CM
E10.44	Type 1 diabetes mellitus with diabetic amyotrophy	Diagnosis	ICD-10-CM
E10.49	Type 1 diabetes mellitus with other diabetic neurological complication	Diagnosis	ICD-10-CM
E10.51	Type 1 diabetes mellitus with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E10.52	Type 1 diabetes mellitus with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E10.59	Type 1 diabetes mellitus with other circulatory complications	Diagnosis	ICD-10-CM
E10.610	Type 1 diabetes mellitus with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM
E10.618	Type 1 diabetes mellitus with other diabetic arthropathy	Diagnosis	ICD-10-CM
E10.620	Type 1 diabetes mellitus with diabetic dermatitis	Diagnosis	ICD-10-CM
E10.621	Type 1 diabetes mellitus with foot ulcer	Diagnosis	ICD-10-CM
E10.622	Type 1 diabetes mellitus with other skin ulcer	Diagnosis	ICD-10-CM
E10.628	Type 1 diabetes mellitus with other skin complications	Diagnosis	ICD-10-CM
E10.630	Type 1 diabetes mellitus with periodontal disease	Diagnosis	ICD-10-CM
E10.638	Type 1 diabetes mellitus with other oral complications	Diagnosis	ICD-10-CM
E10.641	Type 1 diabetes mellitus with hypoglycemia with coma	Diagnosis	ICD-10-CM
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
Type 2 Diabetes			
250.00	Diabetes mellitus without mention of complication, type II or unspecified 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
250.10	Diabetes with ketoacidosis, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.12	Diabetes with ketoacidosis, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.20	Diabetes with hyperosmolarity, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.22	Diabetes with hyperosmolarity, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM

Appendix E. 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) Codes Used to Define Inclusion Criteria in this Request

Code	Description	Code Category	Code Type
250.30	Diabetes with other coma, type II or unspecified 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
250.40	Diabetes with renal manifestations, type II or unspecified 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
250.50	Diabetes with ophthalmic manifestations, type II or unspecified 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
250.60	Diabetes with neurological manifestations, type II or unspecified 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
250.70	Diabetes with peripheral circulatory disorders, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.72	Diabetes with peripheral circulatory disorders, type II or unspecified type,	Diagnosis	ICD-9-CM
250.80	Diabetes with other specified manifestations, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.82	Diabetes with other specified manifestations, type II or unspecified type,	Diagnosis	ICD-9-CM
250.90	Diabetes with unspecified complication, type II or unspecified 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
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
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	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

Appendix E. 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) Codes Used to Define Inclusion Criteria in this Request

Code	Description	Code Category	Code Type
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
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

Appendix E. 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) Codes Used to Define Inclusion Criteria in this Request

Code	Description	Code Category	Code Type
E11.3511	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E11.3512	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E11.3513	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3519	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.3521	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM
E11.3522	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E11.3523	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM
E11.3529	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E11.3531	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM
E11.3532	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E11.3533	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E11.3539	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E11.3541	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E11.3542	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E11.3543	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM
E11.3549	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified	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	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

Appendix E. 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) Codes Used to Define Inclusion Criteria in this Request

Code	Description	Code Category	Code Type
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
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

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

Generic Name	Brand Name
Antidiabetics	
acarbose	Precose
acarbose	acarbose
acarbose	acarbose (bulk)
albiglutide	Tanzeum
alogliptin benzoate	Nesina
alogliptin benzoate	alogliptin
alogliptin benzoate/metformin HCl	Kazano
alogliptin benzoate/metformin HCl	alogliptin-metformin
alogliptin benzoate/pioglitazone HCl	Oseni
alogliptin benzoate/pioglitazone HCl	alogliptin-pioglitazone
bexagliflozin	Brenzavvy
bexagliflozin	bexagliflozin
bromocriptine mesylate	Cycloset
bromocriptine mesylate	Parlodel
bromocriptine mesylate	bromocriptine
canagliflozin	INVOKANA
canagliflozin	Invokana
canagliflozin/metformin HCl	Invokamet
canagliflozin/metformin HCl	Invokamet XR
chlorpropamide	chlorpropamide
colesevelam HCl	WelChol
colesevelam HCl	colesevelam
dapagliflozin propanediol	Farxiga
dapagliflozin propanediol/metformin HCl	Xigduo XR
dulaglutide	Trulicity
empagliflozin	Jardiance
empagliflozin/metformin HCl	Synjardy
empagliflozin/metformin HCl	Synjardy XR
ertugliflozin pidolate	Steglatro
ertugliflozin pidolate/metformin HCl	Segluromet
exenatide	Byetta
exenatide microspheres	Bydureon
exenatide microspheres	Bydureon BCise
glimepiride	Amaryl
glimepiride	glimepiride
glipizide	Glucotrol
glipizide	Glucotrol XL
glipizide	glipizide
glipizide	glipizide (bulk)
glipizide/metformin HCl	glipizide-metformin
glyburide	Diabeta
glyburide	glyburide
glyburide	glyburide (bulk)
glyburide, micronized	Glynase
glyburide, micronized	glyburide micronized
glyburide/metformin HCl	Glucovance
glyburide/metformin HCl	glyburide-metformin

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

Generic Name	Brand Name
insulin degludec/liraglutide	Xultophy 100/3.6
insulin glargine and lixisenatide	Soliqua 100/33
insulin glargine,human recombinant analog/lixisenatide	Soliqua 100/33
linagliptin	Tradjenta
linagliptin/metformin HCl	Jentadueto
linagliptin/metformin HCl	Jentadueto XR
liraglutide	Saxenda
liraglutide	Victoza 2-Pak
liraglutide	Victoza 3-Pak
lixisenatide	Adlyxin
miglitol	Glyset
miglitol	miglitol
nateglinide	Starlix
nateglinide	nateglinide
pioglitazone HCl	Actos
pioglitazone HCl	pioglitazone
pioglitazone HCl/glimepiride	DUETACT
pioglitazone HCl/glimepiride	pioglitazone-glimepiride
pioglitazone HCl/metformin HCl	Actoplus MET
pioglitazone HCl/metformin HCl	Actoplus Met XR
pioglitazone HCl/metformin HCl	pioglitazone-metformin
repaglinide	Prandin
repaglinide	repaglinide
repaglinide/metformin HCl	Prandimet
repaglinide/metformin HCl	repaglinide-metformin
rosiglitazone maleate	Avandia
rosiglitazone maleate/glimepiride	Avandaryl
rosiglitazone maleate/metformin HCl	Avandamet
saxagliptin HCl	Onglyza
saxagliptin HCl	saxagliptin
saxagliptin HCl/metformin HCl	Kombiglyze XR
saxagliptin HCl/metformin HCl	saxagliptin-metformin
semaglutide	Ozempic
semaglutide	Rybelsus
semaglutide	Wegovy
sotagliflozin	Inpefa
tirzepatide	Mounjaro
tirzepatide	Zepbound
tolazamide	tolazamide
tolbutamide	tolbutamide

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
Any Chronic Kidney Disease			
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
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
N18.1	Chronic kidney disease, stage 1	Diagnosis	ICD-10-CM
N18.2	Chronic kidney disease, stage 2 (mild)	Diagnosis	ICD-10-CM
N18.3	Chronic kidney disease, stage 3 (moderate)	Diagnosis	ICD-10-CM
N18.30	Chronic kidney disease, stage 3 unspecified	Diagnosis	ICD-10-CM
N18.31	Chronic kidney disease, stage 3a	Diagnosis	ICD-10-CM
N18.32	Chronic kidney disease, stage 3b	Diagnosis	ICD-10-CM
N18.4	Chronic kidney disease, stage 4 (severe)	Diagnosis	ICD-10-CM
N18.5	Chronic kidney disease, stage 5	Diagnosis	ICD-10-CM
N18.6	End stage renal disease	Diagnosis	ICD-10-CM
N18.9	Chronic kidney disease, unspecified	Diagnosis	ICD-10-CM
Chronic Kidney Disease Stage 4/5			
585.4	Chronic kidney disease, Stage IV (severe)	Diagnosis	ICD-9-CM
585.5	Chronic kidney disease, Stage V	Diagnosis	ICD-9-CM
N18.4	Chronic kidney disease, stage 4 (severe)	Diagnosis	ICD-10-CM
N18.5	Chronic kidney disease, stage 5	Diagnosis	ICD-10-CM
Chronic Kidney Disease Stage 3			
585.3	Chronic kidney disease, Stage III (moderate)	Diagnosis	ICD-9-CM
N18.3	Chronic kidney disease, stage 3 (moderate)	Diagnosis	ICD-10-CM
N18.30	Chronic kidney disease, stage 3 unspecified	Diagnosis	ICD-10-CM
N18.31	Chronic kidney disease, stage 3a	Diagnosis	ICD-10-CM
N18.32	Chronic kidney disease, stage 3b	Diagnosis	ICD-10-CM
Chronic Kidney Disease or Renal Failure			
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
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
585.1	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
585.5	Chronic kidney disease, Stage V	Diagnosis	ICD-9-CM

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
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
N17.0	Acute kidney failure with tubular necrosis	Diagnosis	ICD-10-CM
N17.1	Acute kidney failure with acute cortical necrosis	Diagnosis	ICD-10-CM
N17.2	Acute kidney failure with medullary necrosis	Diagnosis	ICD-10-CM
N17.8	Other acute kidney failure	Diagnosis	ICD-10-CM
N17.9	Acute kidney failure, unspecified	Diagnosis	ICD-10-CM
N18.1	Chronic kidney disease, stage 1	Diagnosis	ICD-10-CM
N18.2	Chronic kidney disease, stage 2 (mild)	Diagnosis	ICD-10-CM
N18.3	Chronic kidney disease, stage 3 (moderate)	Diagnosis	ICD-10-CM
N18.30	Chronic kidney disease, stage 3 unspecified	Diagnosis	ICD-10-CM
N18.31	Chronic kidney disease, stage 3a	Diagnosis	ICD-10-CM
N18.32	Chronic kidney disease, stage 3b	Diagnosis	ICD-10-CM
N18.4	Chronic kidney disease, stage 4 (severe)	Diagnosis	ICD-10-CM
N18.5	Chronic kidney disease, stage 5	Diagnosis	ICD-10-CM
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
Dialysis			
0505F	Hemodialysis plan of care documented (ESRD, P-ESRD)	Procedure	CPT-2
0507F	Peritoneal dialysis plan of care documented (ESRD)	Procedure	CPT-2
0800	Inpatient renal dialysis-general classification	Procedure	RE
0801	Inpatient renal dialysis-inpatient hemodialysis	Procedure	RE
0802	Inpatient renal dialysis-inpatient peritoneal (non-CAPD)	Procedure	RE
0803	Inpatient renal dialysis-inpatient CAPD	Procedure	RE
0804	Inpatient renal dialysis-inpatient CCPD	Procedure	RE
0809	Inpatient renal dialysis-other inpatient dialysis	Procedure	RE
0820	Hemodialysis OP or home dialysis-general classification	Procedure	RE
0821	Hemodialysis OP or home dialysis-hemodialysis-composite or other rate	Procedure	RE
0822	Hemodialysis OP or home dialysis-home supplies	Procedure	RE
0823	Hemodialysis OP or home dialysis-home equipment	Procedure	RE
0824	Hemodialysis OP or home dialysis-maintenance/100%	Procedure	RE
0825	Hemodialysis OP or home dialysis-support services	Procedure	RE
0829	Hemodialysis OP or home dialysis-other	Procedure	RE
0830	Peritoneal dialysis OP or home-general classification	Procedure	RE
0831	Peritoneal dialysis OP or home-peritoneal-composite or other rate	Procedure	RE
0832	Peritoneal dialysis OP or home-home supplies	Procedure	RE
0833	Peritoneal dialysis OP or home-home equipment	Procedure	RE
0834	Peritoneal dialysis OP or home-maintenance/100%	Procedure	RE
0835	Peritoneal dialysis OP or home-support services	Procedure	RE
0839	Peritoneal dialysis OP or home-other	Procedure	RE
0840	CAPD outpatient-general classification	Procedure	RE
0841	CAPD outpatient-CAPD/composite or other rate	Procedure	RE

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Code	Description	Code Category	Code Type
0842	CAPD outpatient-home supplies	Procedure	RE
0843	CAPD outpatient-home equipment	Procedure	RE
0844	CAPD outpatient-maintenance/100%	Procedure	RE
0845	CAPD outpatient-support services	Procedure	RE
0849	CAPD outpatient-other	Procedure	RE
0850	CCPD outpatient-general classification	Procedure	RE
0851	CCPD outpatient-CCPD/composite or other rate	Procedure	RE
0852	CCPD outpatient-home supplies	Procedure	RE
0853	CCPD outpatient-home equipment	Procedure	RE
0854	CCPD outpatient-maintenance/100%	Procedure	RE
0855	CCPD outpatient-support services	Procedure	RE
0859	CCPD outpatient-other	Procedure	RE
0880	Miscellaneous dialysis-general classification	Procedure	RE
0881	Miscellaneous dialysis-ultrafiltration	Procedure	RE
0882	Miscellaneous dialysis-home dialysis aide visit (eff 9/93)	Procedure	RE
0889	Miscellaneous dialysis-other	Procedure	RE
39.95	Hemodialysis	Procedure	ICD-9-CM
3E1M39Z	Irrigation of Peritoneal Cavity using Dialysate, Percutaneous Approach	Procedure	ICD-10-PCS
4052F	Hemodialysis via functioning arteriovenous (AV) fistula (ESRD)	Procedure	CPT-2
4053F	Hemodialysis via functioning arteriovenous (AV) graft (ESRD)	Procedure	CPT-2
4054F	Hemodialysis via catheter (ESRD)	Procedure	CPT-2
4055F	Patient receiving peritoneal dialysis (ESRD)	Procedure	CPT-2
458.21	Hypotension of hemodialysis	Diagnosis	ICD-9-CM
54.98	Peritoneal dialysis	Procedure	ICD-9-CM
75791	Angiography, arteriovenous shunt (eg, dialysis patient fistula/graft), complete evaluation of dialysis access, including fluoroscopy, image documentation and report (includes injections of contrast and all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava), radiological supervision and interpretation	Procedure	CPT-4
792.5	Cloudy (hemodialysis) (peritoneal) dialysis affluent	Diagnosis	ICD-9-CM
90935	Hemodialysis procedure with single evaluation by a physician or other qualified health care professional	Procedure	CPT-4
90937	Hemodialysis procedure requiring repeated evaluation(s) with or without substantial revision of dialysis prescription	Procedure	CPT-4
90939	Hemodialysis access flow study to determine blood flow in grafts and arteriovenous fistulae by an indicator dilution method, hook-up; transcutaneous measurement and disconnection	Procedure	CPT-4
90940	Hemodialysis access flow study to determine blood flow in grafts and arteriovenous fistulae by an indicator method	Procedure	CPT-4
90941	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4
90942	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4
90943	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4
90944	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
90945	Dialysis procedure other than hemodialysis (eg, peritoneal dialysis, hemofiltration, or other continuous renal replacement therapies), with single evaluation by a physician or other qualified health care professional	Procedure	CPT-4
90947	Dialysis procedure other than hemodialysis (eg, peritoneal dialysis, hemofiltration, or other continuous renal replacement therapies) requiring repeated evaluations by a physician or other qualified health care professional, with or without substantial revision of dialysis prescription	Procedure	CPT-4
90951	End-stage renal disease (ESRD) related services monthly, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90952	End-stage renal disease (ESRD) related services monthly, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90953	End-stage renal disease (ESRD) related services monthly, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 1 face-to-face visit by a physician or other qualified health care professional per month	Procedure	CPT-4
90954	End-stage renal disease (ESRD) related services monthly, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90955	End-stage renal disease (ESRD) related services monthly, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90956	End-stage renal disease (ESRD) related services monthly, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 1 face-to-face visit by a physician or other qualified health care professional per month	Procedure	CPT-4
90957	End-stage renal disease (ESRD) related services monthly, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90958	End-stage renal disease (ESRD) related services monthly, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90959	End-stage renal disease (ESRD) related services monthly, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 1 face-to-face visit by a physician or other qualified health care professional per month	Procedure	CPT-4

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
90960	End-stage renal disease (ESRD) related services monthly, for patients 20 years of age and older; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90961	End-stage renal disease (ESRD) related services monthly, for patients 20 years of age and older; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90962	End-stage renal disease (ESRD) related services monthly, for patients 20 years of age and older; with 1 face-to-face visit by a physician or other qualified health care professional per month	Procedure	CPT-4
90963	End-stage renal disease (ESRD) related services for home dialysis per full month, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	Procedure	CPT-4
90964	End-stage renal disease (ESRD) related services for home dialysis per full month, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	Procedure	CPT-4
90965	End-stage renal disease (ESRD) related services for home dialysis per full month, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	Procedure	CPT-4
90966	End-stage renal disease (ESRD) related services for home dialysis per full month, for patients 20 years of age and older	Procedure	CPT-4
90967	End-stage renal disease (ESRD) related services for dialysis less than a full month of service, per day; for patients younger than 2 years of age	Procedure	CPT-4
90968	End-stage renal disease (ESRD) related services for dialysis less than a full month of service, per day; for patients 2-11 years of age	Procedure	CPT-4
90969	End-stage renal disease (ESRD) related services for dialysis less than a full month of service, per day; for patients 12-19 years of age	Procedure	CPT-4
90970	End-stage renal disease (ESRD) related services for dialysis less than a full month of service, per day; for patients 20 years of age and older	Procedure	CPT-4
90976	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90977	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90978	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90979	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90982	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90983	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90984	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90985	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90988	Supervision Of Hemodialysis In Hospital Or Other Facility (excluding Home Dialysis), On Monthly Basis	Procedure	CPT-4
90989	Dialysis training, patient, including helper where applicable, any mode, completed course	Procedure	CPT-4
90990	Hemodialysis Training And/or Counseling	Procedure	CPT-4
90991	Home Hemodialysis Care, Outpatient, For Those Services Either Provided By The Physician Primarily Responsible	Procedure	CPT-4
90992	Peritoneal Dialysis Training And/or Counseling	Procedure	CPT-4

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
90993	Dialysis training, patient, including helper where applicable, any mode, course not completed, per training session	Procedure	CPT-4
90994	Supervision Of Chronic Ambulatory Peritoneal Dialysis (capd), Home Or Out-patient (monthly)	Procedure	CPT-4
90995	End Stage Renal Disease (esrd) Related Services, Per Full Month	Procedure	CPT-4
90996	Continuous Arteriovenous Hemofiltration (cavh) (per Day)	Procedure	CPT-4
90998	End Stage Renal Disease (esrd) Related Services (less Than Full Month), Per Day	Procedure	CPT-4
90999	Unlisted dialysis procedure, inpatient or outpatient	Procedure	CPT-4
99512	Home visit for hemodialysis	Procedure	CPT-4
99559	Home infusion of peritoneal dialysis, per visit	Procedure	CPT-4
996.56	Mechanical complications due to peritoneal dialysis catheter	Diagnosis	ICD-9-CM
996.68	Infection and inflammatory reaction due to peritoneal dialysis catheter	Diagnosis	ICD-9-CM
996.73	Other complications due to renal dialysis device, implant, and graft	Diagnosis	ICD-9-CM
A4655	Needles and syringes for dialysis	Procedure	HCPCS
A4663	Blood pressure cuff only	Procedure	HCPCS
A4672	Drainage extension line, sterile, for dialysis, each	Procedure	HCPCS
A4690	Dialyzer (artificial kidneys), all types, all sizes, for hemodialysis, each	Procedure	HCPCS
A4700	Standard dialysate solution, each	Procedure	HCPCS
A4705	Bicarbonate dialysate solution, each	Procedure	HCPCS
A4720	Dialysate solution, any concentration of dextrose, fluid volume greater than 249 cc, but less than or equal to 999 cc, for peritoneal dialysis	Procedure	HCPCS
A4721	Dialysate solution, any concentration of dextrose, fluid volume greater than 999 cc but less than or equal to 1999 cc, for peritoneal dialysis	Procedure	HCPCS
A4722	Dialysate solution, any concentration of dextrose, fluid volume greater than 1999 cc but less than or equal to 2999 cc, for peritoneal dialysis	Procedure	HCPCS
A4723	Dialysate solution, any concentration of dextrose, fluid volume greater than 2999 cc but less than or equal to 3999 cc, for peritoneal dialysis	Procedure	HCPCS
A4724	Dialysate solution, any concentration of dextrose, fluid volume greater than 3999 cc but less than or equal to 4999 cc, for peritoneal dialysis	Procedure	HCPCS
A4725	Dialysate solution, any concentration of dextrose, fluid volume greater than 4999 cc but less than or equal to 5999 cc, for peritoneal dialysis	Procedure	HCPCS
A4726	Dialysate solution, any concentration of dextrose, fluid volume greater than 5999 cc, for peritoneal dialysis	Procedure	HCPCS
A4728	Dialysate solution, nondextrose containing, 500 ml	Procedure	HCPCS
A4760	Dialysate solution test kit, for peritoneal dialysis, any type, each	Procedure	HCPCS
A4765	Dialysate concentrate, powder, additive for peritoneal dialysis, per packet	Procedure	HCPCS
A4766	Dialysate concentrate, solution, additive for peritoneal dialysis, per 10 ml	Procedure	HCPCS
A4780	Sterilizing agent for dialysis equipment, per gallon	Procedure	HCPCS
A4790	Cleansing agents for equipment for dialysis only	Procedure	HCPCS
A4800	Heparin for dialysis and antidote, any strength, porcine or beef, up to 1000 units, 10-30 ml (for parenteral use see b4216)	Procedure	HCPCS
A4820	Hemodialysis kit supplies	Procedure	HCPCS
A4910	Non-medical supplies for dialysis, (i.e., scale, scissors, stopwatch, etc.)	Procedure	HCPCS
A4913	Miscellaneous dialysis supplies, not otherwise specified	Procedure	HCPCS

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
A4919	Dialyzer holder, each	Procedure	HCPCS
A4929	Tourniquet for dialysis, each	Procedure	HCPCS
B50W0ZZ	Plain Radiography of Dialysis Shunt/Fistula using High Osmolar Contrast	Procedure	ICD-10-PCS
B50W1ZZ	Plain Radiography of Dialysis Shunt/Fistula using Low Osmolar Contrast	Procedure	ICD-10-PCS
B50WYZZ	Plain Radiography of Dialysis Shunt/Fistula using Other Contrast	Procedure	ICD-10-PCS
B51W0ZA	Fluoroscopy of Dialysis Shunt/Fistula using High Osmolar Contrast, Guidance	Procedure	ICD-10-PCS
B51W0ZZ	Fluoroscopy of Dialysis Shunt/Fistula using High Osmolar Contrast	Procedure	ICD-10-PCS
B51W1ZA	Fluoroscopy of Dialysis Shunt/Fistula using Low Osmolar Contrast, Guidance	Procedure	ICD-10-PCS
B51W1ZZ	Fluoroscopy of Dialysis Shunt/Fistula using Low Osmolar Contrast	Procedure	ICD-10-PCS
B51WYZA	Fluoroscopy of Dialysis Shunt/Fistula using Other Contrast, Guidance	Procedure	ICD-10-PCS
B51WYZZ	Fluoroscopy of Dialysis Shunt/Fistula using Other Contrast	Procedure	ICD-10-PCS
B51WZZA	Fluoroscopy of Dialysis Shunt/Fistula, Guidance	Procedure	ICD-10-PCS
B51WZZZ	Fluoroscopy of Dialysis Shunt/Fistula	Procedure	ICD-10-PCS
C1037	Catheter, vaxcel chronic dialysis catheter, medcomp bio flex tesio catheter, medcomp silicone tesio catheter, medcomp hemo-cath long term silicone catheter, bard niagara dual lumen catheter, bard opti-flow dual lumen catheter, medcomp ash split catheter	Procedure	HCPCS
C1750	Catheter, hemodialysis/peritoneal, long-term	Procedure	HCPCS
C1752	Catheter, hemodialysis/peritoneal, short-term	Procedure	HCPCS
C1881	Dialysis access system (implantable)	Procedure	HCPCS
E1510	Kidney, dialysate delivery system kidney machine, pump recirculating, air removal system, flowrate meter, power off, heater and temperature control with alarm, IV poles, pressure gauge, concentrate container	Procedure	HCPCS
E1570	Adjustable chair, for ESRD patients	Procedure	HCPCS
E1590	Hemodialysis machine	Procedure	HCPCS
E1592	Automatic intermittent peritoneal dialysis system	Procedure	HCPCS
E1594	Cycler dialysis machine for peritoneal dialysis	Procedure	HCPCS
E1632	Wearable artificial kidney, each	Procedure	HCPCS
E1634	Peritoneal dialysis clamps, each	Procedure	HCPCS
E1635	Compact (portable) travel hemodialyzer system	Procedure	HCPCS
E1637	Hemostats, each	Procedure	HCPCS
E1638	Heating pad, for peritoneal dialysis, any size, each	Procedure	HCPCS
E1639	Scale, each	Procedure	HCPCS
E1699	Dialysis equipment, not otherwise specified	Procedure	HCPCS
E872.2	Failure of sterile precautions during kidney dialysis and other perfusion	Diagnosis	ICD-9-CM
E879.1	Kidney dialysis as the cause of abnormal reaction of patient, or of later complication, without mention of misadventure at time of procedure	Diagnosis	ICD-9-CM
G0257	Unscheduled or emergency dialysis treatment for an ESRD patient in a hospital outpatient department that is not certified as an ESRD facility	Procedure	HCPCS
G0321	ESRD related services for home dialysis patients per full month; for patients 2 to 11 years of age to include monitoring for adequacy of nutrition, assessment of growth and development, and counseling of parents	Procedure	HCPCS
G0322	End Stage Renal disease (ESRD) related services for home dialysis patients per full month; for patients 12 to 19 years of age to include monitoring for adequacy of nutrition, assessment of growth and development, and counseling of parents	Procedure	HCPCS

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
G0323	End Stage Renal disease (ESRD) related services for home dialysis patients per full month; for patients 20 years of age and older	Procedure	HCPCS
G0324	ESRD related services for home dialysis (less than full month), per day; for patients under 2 years of age	Procedure	HCPCS
G0325	ESRD related services for home dialysis (less than full month), per day; for patients between 2 and 11 years of age	Procedure	HCPCS
G0326	ESRD related services for home dialysis (less than full month), per day; for patients between twelve and nineteen years of age	Procedure	HCPCS
G0327	ESRD related services for home dialysis (less than full month), per day; for patients twenty years of age and over	Procedure	HCPCS
G8075	ESRD patient with documented dialysis dose of URR greater than or equal to 65% (or Kt/ V greater than or equal to 1.2)	Procedure	HCPCS
G8076	ESRD patient with documented dialysis dose of URR less than 65% (or Kt/V less than 1.2)	Procedure	HCPCS
G8081	ESRD patient requiring hemodialysis vascular access documented to have received autogenous AV fistula	Procedure	HCPCS
G8082	ESRD patient requiring hemodialysis documented to have received vascular access other than autogenous AV fistula	Procedure	HCPCS
G8085	ESRD patient requiring hemodialysis vascular access was not an eligible candidate for autogenous AV fistula	Procedure	HCPCS
G8714	Hemodialysis treatment performed exactly 3 times per week > 90 days	Procedure	HCPCS
G8715	Hemodialysis treatment performed less than 3 times per week or greater than 3 times per week	Procedure	HCPCS
G8727	Patient receiving hemodialysis, peritoneal dialysis or kidney transplantation	Procedure	HCPCS
G9231	Documentation of end stage renal disease (ESRD), dialysis, renal transplant before or during the measurement period or pregnancy during the measurement period	Procedure	HCPCS
I95.3	Hypotension of hemodialysis	Diagnosis	ICD-10-CM
J0882	Injection, darbepoetin alfa, 1 mcg (for ESRD on dialysis)	Procedure	HCPCS
J0886	Injection, epoetin alfa, 1000 units (for ESRD on dialysis)	Procedure	HCPCS
J0887	Injection, epoetin beta, 1 mcg, (for ESRD on dialysis)	Procedure	HCPCS
K0610	Peritoneal dialysis clamp, each	Procedure	HCPCS
K0612	Drainage extension line, sterile, for dialysis, each	Procedure	HCPCS
Q0139	Injection, ferumoxytol, for treatment of iron deficiency anemia, 1 mg (for ESRD on dialysis)	Procedure	HCPCS
Q4054	Injection, darbepoetin alfa, 1 mcg (for ESRD on dialysis)	Procedure	HCPCS
Q4055	Injection, epoetin alfa, 1000 units (for ESRD on dialysis)	Procedure	HCPCS
Q4081	Injection, epoetin alfa, 100 units (for ESRD on dialysis)	Procedure	HCPCS
Q9972	Injection, epoetin beta, 1 microgram, (for ESRD on dialysis)	Procedure	HCPCS
R88.0	Cloudy (hemodialysis) (peritoneal) dialysis effluent	Diagnosis	ICD-10-CM
S9335	Home therapy, hemodialysis; administrative services, professional pharmacy services, care coordination, and all necessary supplies and equipment (drugs and nursing services coded separately), per diem	Procedure	HCPCS

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
S9339	Home therapy; peritoneal dialysis, administrative services, professional pharmacy services, care coordination and all necessary supplies and equipment (drugs and nursing visits coded separately), per diem	Procedure	HCPCS
T81.502	Unspecified complication of foreign body accidentally left in body following kidney dialysis	Diagnosis	ICD-10-CM
T81.502A	Unspecified complication of foreign body accidentally left in body following kidney dialysis, initial encounter	Diagnosis	ICD-10-CM
T81.502D	Unspecified complication of foreign body accidentally left in body following kidney dialysis, subsequent encounter	Diagnosis	ICD-10-CM
T81.502S	Unspecified complication of foreign body accidentally left in body following kidney dialysis, sequela	Diagnosis	ICD-10-CM
T81.512	Adhesions due to foreign body accidentally left in body following kidney dialysis	Diagnosis	ICD-10-CM
T81.512A	Adhesions due to foreign body accidentally left in body following kidney dialysis, initial encounter	Diagnosis	ICD-10-CM
T81.512D	Adhesions due to foreign body accidentally left in body following kidney dialysis, subsequent encounter	Diagnosis	ICD-10-CM
T81.512S	Adhesions due to foreign body accidentally left in body following kidney dialysis, sequela	Diagnosis	ICD-10-CM
T81.522	Obstruction due to foreign body accidentally left in body following kidney dialysis	Diagnosis	ICD-10-CM
T81.522A	Obstruction due to foreign body accidentally left in body following kidney dialysis, initial encounter	Diagnosis	ICD-10-CM
T81.522D	Obstruction due to foreign body accidentally left in body following kidney dialysis, subsequent encounter	Diagnosis	ICD-10-CM
T81.522S	Obstruction due to foreign body accidentally left in body following kidney dialysis, sequela	Diagnosis	ICD-10-CM
T81.532	Perforation due to foreign body accidentally left in body following kidney dialysis	Diagnosis	ICD-10-CM
T81.532A	Perforation due to foreign body accidentally left in body following kidney dialysis, initial encounter	Diagnosis	ICD-10-CM
T81.532D	Perforation due to foreign body accidentally left in body following kidney dialysis, subsequent encounter	Diagnosis	ICD-10-CM
T81.532S	Perforation due to foreign body accidentally left in body following kidney dialysis, sequela	Diagnosis	ICD-10-CM
T81.592	Other complications of foreign body accidentally left in body following kidney dialysis	Diagnosis	ICD-10-CM
T81.592A	Other complications of foreign body accidentally left in body following kidney dialysis, initial encounter	Diagnosis	ICD-10-CM
T81.592D	Other complications of foreign body accidentally left in body following kidney dialysis, subsequent encounter	Diagnosis	ICD-10-CM
T81.592S	Other complications of foreign body accidentally left in body following kidney dialysis, sequela	Diagnosis	ICD-10-CM
T82.41XA	Breakdown (mechanical) of vascular dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T82.41XD	Breakdown (mechanical) of vascular dialysis catheter, subsequent encounter	Diagnosis	ICD-10-CM
T82.41XS	Breakdown (mechanical) of vascular dialysis catheter, sequela	Diagnosis	ICD-10-CM
T82.42XA	Displacement of vascular dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T82.42XD	Displacement of vascular dialysis catheter, subsequent encounter	Diagnosis	ICD-10-CM

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
T82.42XS	Displacement of vascular dialysis catheter, sequela	Diagnosis	ICD-10-CM
T82.43XA	Leakage of vascular dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T82.43XD	Leakage of vascular dialysis catheter, subsequent encounter	Diagnosis	ICD-10-CM
T82.43XS	Leakage of vascular dialysis catheter, sequela	Diagnosis	ICD-10-CM
T82.49XA	Other complication of vascular dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T82.49XD	Other complication of vascular dialysis catheter, subsequent encounter	Diagnosis	ICD-10-CM
T82.49XS	Other complication of vascular dialysis catheter, sequela	Diagnosis	ICD-10-CM
T85.611	Breakdown (mechanical) of intraperitoneal dialysis catheter	Diagnosis	ICD-10-CM
T85.611A	Breakdown (mechanical) of intraperitoneal dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T85.611D	Breakdown (mechanical) of intraperitoneal dialysis catheter, subsequent encounter	Diagnosis	ICD-10-CM
T85.611S	Breakdown (mechanical) of intraperitoneal dialysis catheter, sequela	Diagnosis	ICD-10-CM
T85.621	Displacement of intraperitoneal dialysis catheter	Diagnosis	ICD-10-CM
T85.621A	Displacement of intraperitoneal dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T85.621D	Displacement of intraperitoneal dialysis catheter, subsequent encounter	Diagnosis	ICD-10-CM
T85.621S	Displacement of intraperitoneal dialysis catheter, sequela	Diagnosis	ICD-10-CM
T85.631	Leakage of intraperitoneal dialysis catheter	Diagnosis	ICD-10-CM
T85.631A	Leakage of intraperitoneal dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T85.631D	Leakage of intraperitoneal dialysis catheter, subsequent encounter	Diagnosis	ICD-10-CM
T85.631S	Leakage of intraperitoneal dialysis catheter, sequela	Diagnosis	ICD-10-CM
T85.691	Other mechanical complication of intraperitoneal dialysis catheter	Diagnosis	ICD-10-CM
T85.691A	Other mechanical complication of intraperitoneal dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T85.691D	Other mechanical complication of intraperitoneal dialysis catheter, subsequent encounter	Diagnosis	ICD-10-CM
T85.691S	Other mechanical complication of intraperitoneal dialysis catheter, sequela	Diagnosis	ICD-10-CM
T85.71XA	Infection and inflammatory reaction due to peritoneal dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T85.71XD	Infection and inflammatory reaction due to peritoneal dialysis catheter, subsequent encounter	Diagnosis	ICD-10-CM
T85.71XS	Infection and inflammatory reaction due to peritoneal dialysis catheter, sequela	Diagnosis	ICD-10-CM
V45.1	Renal dialysis status	Diagnosis	ICD-9-CM
V45.11	Renal dialysis status	Diagnosis	ICD-9-CM
V45.12	Noncompliance with renal dialysis	Diagnosis	ICD-9-CM
V56.0	Encounter for extracorporeal dialysis	Diagnosis	ICD-9-CM
V56.1	Fitting and adjustment of extracorporeal dialysis catheter	Diagnosis	ICD-9-CM
V56.2	Fitting and adjustment of peritoneal dialysis catheter	Diagnosis	ICD-9-CM
V56.3	Encounter for adequacy testing for dialysis	Diagnosis	ICD-9-CM
V56.31	Encounter for adequacy testing for hemodialysis	Diagnosis	ICD-9-CM
V56.32	Encounter for adequacy testing for peritoneal dialysis	Diagnosis	ICD-9-CM
V56.8	Encounter other dialysis	Diagnosis	ICD-9-CM
Y62.2	Failure of sterile precautions during kidney dialysis and other perfusion	Diagnosis	ICD-10-CM
Y84.1	Kidney dialysis as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure	Diagnosis	ICD-10-CM
Z49.01	Encounter for fitting and adjustment of extracorporeal dialysis catheter	Diagnosis	ICD-10-CM
Z49.02	Encounter for fitting and adjustment of peritoneal dialysis catheter	Diagnosis	ICD-10-CM

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
Z49.31	Encounter for adequacy testing for hemodialysis	Diagnosis	ICD-10-CM
Z49.32	Encounter for adequacy testing for peritoneal dialysis	Diagnosis	ICD-10-CM
Z91.15	Patient's noncompliance with renal dialysis	Diagnosis	ICD-10-CM
Z94.0	Kidney transplant status	Diagnosis	ICD-10-CM
Z99.2	Dependence on renal dialysis	Diagnosis	ICD-10-CM
Chronic Kidney Disease Treatment			
C1774	Injection, darbepoetin alfa (for non esrd use), per 1 mcg	Procedure	HCPCS
J0635	Injection, calcitriol, 1 mcg amp.	Procedure	HCPCS
J0636	Injection, calcitriol, 0.1 mcg	Procedure	HCPCS
J0880	Injection, darbepoetin alfa, 5 mcg	Procedure	HCPCS
J0881	Injection, darbepoetin alfa, 1 mcg (non-ESRD use)	Procedure	HCPCS
J0882	Injection, darbepoetin alfa, 1 mcg (for ESRD on dialysis)	Procedure	HCPCS
J0885	Injection, epoetin alfa, (for non-ESRD use), 1000 units	Procedure	HCPCS
J0886	Injection, epoetin alfa, 1000 units (for ESRD on dialysis)	Procedure	HCPCS
Q0137	Injection, darbepoetin alfa, 1 mcg (non-ESRD use)	Procedure	HCPCS
Q4054	Injection, darbepoetin alfa, 1 mcg (for ESRD on dialysis)	Procedure	HCPCS
Q4055	Injection, epoetin alfa, 1000 units (for ESRD on dialysis)	Procedure	HCPCS
Q4081	Injection, epoetin alfa, 100 units (for ESRD on dialysis)	Procedure	HCPCS
Q5105	Injection, epoetin alfa-epbx, biosimilar, (Retacrit) (for ESRD on dialysis), 100 units	Procedure	HCPCS
Q5106	Injection, epoetin alfa-epbx, biosimilar, (Retacrit) (for non-ESRD use), 1000 units	Procedure	HCPCS
S0112	INJECTION, DARBEPOETIN ALFA, 1 MCG	Procedure	HCPCS
S0169	Calcitriol, 0.25 mcg	Procedure	HCPCS
Diabetic Ketoacidosis			
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
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
E11.10	Type 2 diabetes mellitus with ketoacidosis without coma	Diagnosis	ICD-10-CM
E11.11	Type 2 diabetes mellitus with ketoacidosis 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
Long/Intermediate-Acting Insulin			
S5552	Insulin, intermediate acting (NPH or LENTE); 5 units	Procedure	HCPCS
S5553	Insulin, long acting; 5 units	Procedure	HCPCS
Short/Rapid-Acting Insulin			
S5550	Insulin, rapid onset, 5 units	Procedure	HCPCS
S5551	Insulin, most rapid onset (Lispro or Aspart); 5 units	Procedure	HCPCS
Insulin Pump			
A4225	Supplies for external insulin infusion pump, syringe type cartridge, sterile, each	Procedure	HCPCS
A4230	Infusion set for external insulin pump, nonneedle cannula type	Procedure	HCPCS
A4231	Infusion set for external insulin pump, needle type	Procedure	HCPCS
A4232	Syringe with needle for external insulin pump, sterile, 3 cc	Procedure	HCPCS

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Code	Description	Code Category	Code Type
E0784	External ambulatory infusion pump, insulin	Procedure	HCPCS
J1811	Insulin (Fiasp) for administration through DME (i.e., insulin pump) per 50 units	Procedure	HCPCS
J1813	Insulin (Lyumjev) for administration through DME (i.e., insulin pump) per 50 units	Procedure	HCPCS
J1817	Insulin for administration through DME (i.e., insulin pump) per 50 units	Procedure	HCPCS
S1034	Artificial pancreas device system (e.g., low glucose suspend [LGS] feature) including continuous glucose monitor, blood glucose device, insulin pump and computer algorithm that communicates with all of the devices	Procedure	HCPCS
S5565	Insulin cartridge for use in insulin delivery device other than pump; 150 units	Procedure	HCPCS
S5566	Insulin cartridge for use in insulin delivery device other than pump; 300 units	Procedure	HCPCS
S9145	Insulin pump initiation, instruction in initial use of pump (pump not included)	Procedure	HCPCS
Obesity/Overweight			
00HE0MZ	Insertion of Neurostimulator Lead into Cranial Nerve, Open Approach	Procedure	ICD-10-PCS
00HE3MZ	Insertion of Neurostimulator Lead into Cranial Nerve, Percutaneous Approach	Procedure	ICD-10-PCS
00HE4MZ	Insertion of Neurostimulator Lead into Cranial Nerve, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0155T	Laparoscopy, surgical; implantation or replacement of gastric stimulation electrodes, lesser curvature (ie, morbid obesity)	Procedure	CPT-3
0157T	Laparotomy, implantation or replacement of gastric stimulation electrodes, lesser curvature (ie, morbid obesity)	Procedure	CPT-3
02.93	Implantation or replacement of intracranial neurostimulator lead(s)	Procedure	ICD-9-CM
0312T	Vagus nerve blocking therapy (morbid obesity); laparoscopic implantation of neurostimulator electrode array, anterior and posterior vagal trunks adjacent to esophagogastric junction (EGJ), with implantation of pulse generator, includes programming	Procedure	CPT-3
04.92	Implantation or replacement of peripheral neurostimulator lead(s)	Procedure	ICD-9-CM
0D16079	Bypass Stomach to Duodenum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1607A	Bypass Stomach to Jejunum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1607B	Bypass Stomach to Ileum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D160J9	Bypass Stomach to Duodenum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D160JA	Bypass Stomach to Jejunum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D160JB	Bypass Stomach to Ileum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D160K9	Bypass Stomach to Duodenum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D160KA	Bypass Stomach to Jejunum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D160KB	Bypass Stomach to Ileum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D160Z9	Bypass Stomach to Duodenum, Open Approach	Procedure	ICD-10-PCS
0D160ZA	Bypass Stomach to Jejunum, Open Approach	Procedure	ICD-10-PCS
0D160ZB	Bypass Stomach to Ileum, Open Approach	Procedure	ICD-10-PCS
0D16479	Bypass Stomach to Duodenum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1647A	Bypass Stomach to Jejunum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1647B	Bypass Stomach to Ileum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

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Code	Description	Code Category	Code Type
0D164J9	Bypass Stomach to Duodenum with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164JA	Bypass Stomach to Jejunum with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164JB	Bypass Stomach to Ileum with Synthetic Substitute, Percutaneous Endoscopic	Procedure	ICD-10-PCS
0D164K9	Bypass Stomach to Duodenum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164KA	Bypass Stomach to Jejunum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164KB	Bypass Stomach to Ileum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164Z9	Bypass Stomach to Duodenum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164ZA	Bypass Stomach to Jejunum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164ZB	Bypass Stomach to Ileum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D16879	Bypass Stomach to Duodenum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1687A	Bypass Stomach to Jejunum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1687B	Bypass Stomach to Ileum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168J9	Bypass Stomach to Duodenum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168JA	Bypass Stomach to Jejunum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168JB	Bypass Stomach to Ileum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168K9	Bypass Stomach to Duodenum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168KA	Bypass Stomach to Jejunum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168KB	Bypass Stomach to Ileum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168Z9	Bypass Stomach to Duodenum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168ZA	Bypass Stomach to Jejunum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168ZB	Bypass Stomach to Ileum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0DB60Z3	Excision of Stomach, Open Approach, Vertical	Procedure	ICD-10-PCS
0DB60ZZ	Excision of Stomach, Open Approach	Procedure	ICD-10-PCS
0DB63Z3	Excision of Stomach, Percutaneous Approach, Vertical	Procedure	ICD-10-PCS
0DB63ZZ	Excision of Stomach, Percutaneous Approach	Procedure	ICD-10-PCS
0DB64Z3	Excision of Stomach, Percutaneous Endoscopic Approach, Vertical	Procedure	ICD-10-PCS
0DB64ZZ	Excision of Stomach, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0DB67Z3	Excision of Stomach, Via Natural or Artificial Opening, Vertical	Procedure	ICD-10-PCS
0DB67ZZ	Excision of Stomach, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
0DB68Z3	Excision of Stomach, Via Natural or Artificial Opening Endoscopic, Vertical	Procedure	ICD-10-PCS

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
0DB68ZZ	Excision of Stomach, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0DH60MZ	Insertion of Stimulator Lead into Stomach, Open Approach	Procedure	ICD-10-PCS
0DH63DZ	Insertion of Intraluminal Device into Stomach, Percutaneous Approach	Procedure	ICD-10-PCS
0DH63MZ	Insertion of Stimulator Lead into Stomach, Percutaneous Approach	Procedure	ICD-10-PCS
0DH64MZ	Insertion of Stimulator Lead into Stomach, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0DH64YZ	Insertion of Other Device into Stomach, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0DH67DZ	Insertion of Intraluminal Device into Stomach, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
0DH68DZ	Insertion of Intraluminal Device into Stomach, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0DL60CZ	Occlusion of Stomach with Extraluminal Device, Open Approach	Procedure	ICD-10-PCS
0DL60DZ	Occlusion of Stomach with Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
0DL60ZZ	Occlusion of Stomach, Open Approach	Procedure	ICD-10-PCS
0DL63CZ	Occlusion of Stomach with Extraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
0DL63DZ	Occlusion of Stomach with Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
0DL63ZZ	Occlusion of Stomach, Percutaneous Approach	Procedure	ICD-10-PCS
0DL64CZ	Occlusion of Stomach with Extraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0DL64DZ	Occlusion of Stomach with Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0DL64ZZ	Occlusion of Stomach, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0DL67DZ	Occlusion of Stomach with Intraluminal Device, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
0DL68DZ	Occlusion of Stomach with Intraluminal Device, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0DV60CZ	Restriction of Stomach with Extraluminal Device, Open Approach	Procedure	ICD-10-PCS
0DV60DZ	Restriction of Stomach with Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
0DV60ZZ	Restriction of Stomach, Open Approach	Procedure	ICD-10-PCS
0DV63CZ	Restriction of Stomach with Extraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
0DV63DZ	Restriction of Stomach with Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
0DV63ZZ	Restriction of Stomach, Percutaneous Approach	Procedure	ICD-10-PCS
0DV64CZ	Restriction of Stomach with Extraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0DV64DZ	Restriction of Stomach with Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0DV64ZZ	Restriction of Stomach, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0DV67DZ	Restriction of Stomach with Intraluminal Device, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
0DV67ZZ	Restriction of Stomach, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
0DV68DZ	Restriction of Stomach with Intraluminal Device, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0DV68ZZ	Restriction of Stomach, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
278.00	Obesity, unspecified	Diagnosis	ICD-9-CM
278.01	Morbid obesity	Diagnosis	ICD-9-CM
278.03	Obesity hypoventilation syndrome	Diagnosis	ICD-9-CM
43.0	Gastrotomy	Procedure	ICD-9-CM
43.41	Endoscopic excision or destruction of lesion or tissue of stomach	Procedure	ICD-9-CM
43.42	Local excision of other lesion or tissue of stomach	Procedure	ICD-9-CM
43.6	Partial gastrectomy with anastomosis to duodenum	Procedure	ICD-9-CM
43.7	Partial gastrectomy with anastomosis to jejunum	Procedure	ICD-9-CM
43.81	Partial gastrectomy with jejunal transposition	Procedure	ICD-9-CM

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
43.82	Laparoscopic vertical (sleeve) gastrectomy	Procedure	ICD-9-CM
43.89	Open and other partial gastrectomy	Procedure	ICD-9-CM
43246	Esophagogastroduodenoscopy, flexible, transoral; with directed placement of percutaneous gastrostomy tube	Procedure	CPT-4
43631	Gastrectomy, partial, distal; with gastroduodenostomy	Procedure	CPT-4
43632	Gastrectomy, partial, distal; with gastrojejunostomy	Procedure	CPT-4
43633	Gastrectomy, partial, distal; with Roux-en-Y reconstruction	Procedure	CPT-4
43634	Gastrectomy, partial, distal; with formation of intestinal pouch	Procedure	CPT-4
43644	Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and Roux-en-Y gastroenterostomy (roux limb 150 cm or less)	Procedure	CPT-4
43645	Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and small intestine reconstruction to limit absorption	Procedure	CPT-4
43647	Laparoscopy, surgical; implantation or replacement of gastric neurostimulator electrodes, antrum	Procedure	CPT-4
43770	Laparoscopy, surgical, gastric restrictive procedure; placement of adjustable gastric restrictive device (eg, gastric band and subcutaneous port components)	Procedure	CPT-4
43775	Laparoscopy, surgical, gastric restrictive procedure; longitudinal gastrectomy (ie, sleeve gastrectomy)	Procedure	CPT-4
43842	Gastric restrictive procedure, without gastric bypass, for morbid obesity; vertical-banded gastroplasty	Procedure	CPT-4
43843	Gastric restrictive procedure, without gastric bypass, for morbid obesity; other than vertical-banded gastroplasty	Procedure	CPT-4
43845	Gastric restrictive procedure with partial gastrectomy, pylorus-preserving duodenoileostomy and ileoileostomy (50 to 100 cm common channel) to limit absorption (biliopancreatic diversion with duodenal switch)	Procedure	CPT-4
43846	Gastric restrictive procedure, with gastric bypass for morbid obesity; with short limb (150 cm or less) Roux-en-Y gastroenterostomy	Procedure	CPT-4
43847	Gastric restrictive procedure, with gastric bypass for morbid obesity; with small intestine reconstruction to limit absorption	Procedure	CPT-4
43881	Implantation or replacement of gastric neurostimulator electrodes, antrum, open	Procedure	CPT-4
44.31	High gastric bypass	Procedure	ICD-9-CM
44.38	Laparoscopic gastroenterostomy	Procedure	ICD-9-CM
44.39	Other gastroenterostomy without gastrectomy	Procedure	ICD-9-CM
44.68	Laparoscopic gastroplasty	Procedure	ICD-9-CM
44.69	Other repair of stomach	Procedure	ICD-9-CM
44.93	Insertion of gastric bubble (balloon)	Procedure	ICD-9-CM
44.95	Laparoscopic gastric restrictive procedure	Procedure	ICD-9-CM
44.99	Other operations on stomach	Procedure	ICD-9-CM
45.51	Isolation of segment of small intestine	Procedure	ICD-9-CM
52.7	Radical pancreaticoduodenectomy	Procedure	ICD-9-CM
539.0	Complications of gastric band procedure	Diagnosis	ICD-9-CM
539.01	Infection due to gastric band procedure	Diagnosis	ICD-9-CM
539.09	Other complications of gastric band procedure	Diagnosis	ICD-9-CM
539.8	Complications of other bariatric procedure	Diagnosis	ICD-9-CM

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
539.81	Infection due to other bariatric procedure	Diagnosis	ICD-9-CM
539.89	Other complications of other bariatric procedure	Diagnosis	ICD-9-CM
649.1	Obesity complicating pregnancy, childbirth, or the puerperium	Diagnosis	ICD-9-CM
649.10	Obesity complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	Diagnosis	ICD-9-CM
649.11	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
649.12	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
649.13	Obesity complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	Diagnosis	ICD-9-CM
649.14	Obesity complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	Diagnosis	ICD-9-CM
649.2	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium	Diagnosis	ICD-9-CM
649.20	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	Diagnosis	ICD-9-CM
649.21	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
649.22	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
649.23	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	Diagnosis	ICD-9-CM
649.24	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	Diagnosis	ICD-9-CM
E66.01	Morbid (severe) obesity due to excess calories	Diagnosis	ICD-10-CM
E66.09	Other obesity due to excess calories	Diagnosis	ICD-10-CM
E66.1	Drug-induced obesity	Diagnosis	ICD-10-CM
E66.2	Morbid (severe) obesity with alveolar hypoventilation	Diagnosis	ICD-10-CM
E66.8	Other obesity	Diagnosis	ICD-10-CM
E66.9	Obesity, unspecified	Diagnosis	ICD-10-CM
K95.01	Infection due to gastric band procedure	Diagnosis	ICD-10-CM
K95.09	Other complications of gastric band procedure	Diagnosis	ICD-10-CM
K95.81	Infection due to other bariatric procedure	Diagnosis	ICD-10-CM
K95.89	Other complications of other bariatric procedure	Diagnosis	ICD-10-CM
O99.210	Obesity complicating pregnancy, unspecified trimester	Diagnosis	ICD-10-CM
O99.211	Obesity complicating pregnancy, first trimester	Diagnosis	ICD-10-CM
O99.212	Obesity complicating pregnancy, second trimester	Diagnosis	ICD-10-CM
O99.213	Obesity complicating pregnancy, third trimester	Diagnosis	ICD-10-CM
O99.214	Obesity complicating childbirth	Diagnosis	ICD-10-CM
O99.215	Obesity complicating the puerperium	Diagnosis	ICD-10-CM
O99.840	Bariatric surgery status complicating pregnancy, unspecified trimester	Diagnosis	ICD-10-CM
O99.841	Bariatric surgery status complicating pregnancy, first trimester	Diagnosis	ICD-10-CM
O99.842	Bariatric surgery status complicating pregnancy, second trimester	Diagnosis	ICD-10-CM
O99.843	Bariatric surgery status complicating pregnancy, third trimester	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
O99.844	Bariatric surgery status complicating childbirth	Diagnosis	ICD-10-CM
O99.845	Bariatric surgery status complicating the puerperium	Diagnosis	ICD-10-CM
S2082	Laparoscopy, surgical; gastric restrictive procedure, adjustable gastric band includes placement of subcutaneous port	Procedure	HCPCS
V45.86	Bariatric surgery status	Diagnosis	ICD-9-CM
V85.3	Body Mass Index between 30-39, adult	Diagnosis	ICD-9-CM
V85.30	Body Mass Index 30.0-30.9, adult	Diagnosis	ICD-9-CM
V85.31	Body Mass Index 31.0-31.9, adult	Diagnosis	ICD-9-CM
V85.32	Body Mass Index 32.0-32.9, adult	Diagnosis	ICD-9-CM
V85.33	Body Mass Index 33.0-33.9, adult	Diagnosis	ICD-9-CM
V85.34	Body Mass Index 34.0-34.9, adult	Diagnosis	ICD-9-CM
V85.35	Body Mass Index 35.0-35.9, adult	Diagnosis	ICD-9-CM
V85.36	Body Mass Index 36.0-36.9, adult	Diagnosis	ICD-9-CM
V85.37	Body Mass Index 37.0-37.9, adult	Diagnosis	ICD-9-CM
V85.38	Body Mass Index 38.0-38.9, adult	Diagnosis	ICD-9-CM
V85.39	Body Mass Index 39.0-39.9, adult	Diagnosis	ICD-9-CM
V85.4	Body Mass Index 40 and over, adult	Diagnosis	ICD-9-CM
V85.41	Body Mass Index 40.0-44.9, adult	Diagnosis	ICD-9-CM
V85.42	Body Mass Index 45.0-49.9, adult	Diagnosis	ICD-9-CM
V85.43	Body Mass Index 50.0-59.9, adult	Diagnosis	ICD-9-CM
V85.44	Body Mass Index 60.0-69.9, adult	Diagnosis	ICD-9-CM
V85.45	Body Mass Index 70 and over, adult	Diagnosis	ICD-9-CM
Z68.30	Body mass index (BMI) 30.0-30.9, adult	Diagnosis	ICD-10-CM
Z68.31	Body mass index (BMI) 31.0-31.9, adult	Diagnosis	ICD-10-CM
Z68.32	Body mass index (BMI) 32.0-32.9, adult	Diagnosis	ICD-10-CM
Z68.33	Body mass index (BMI) 33.0-33.9, adult	Diagnosis	ICD-10-CM
Z68.34	Body mass index (BMI) 34.0-34.9, adult	Diagnosis	ICD-10-CM
Z68.35	Body mass index (BMI) 35.0-35.9, adult	Diagnosis	ICD-10-CM
Z68.36	Body mass index (BMI) 36.0-36.9, adult	Diagnosis	ICD-10-CM
Z68.37	Body mass index (BMI) 37.0-37.9, adult	Diagnosis	ICD-10-CM
Z68.38	Body mass index (BMI) 38.0-38.9, adult	Diagnosis	ICD-10-CM
Z68.39	Body mass index (BMI) 39.0-39.9, adult	Diagnosis	ICD-10-CM
Z68.41	Body mass index (BMI) 40.0-44.9, adult	Diagnosis	ICD-10-CM
Z68.42	Body mass index (BMI) 45.0-49.9, adult	Diagnosis	ICD-10-CM
Z68.43	Body mass index (BMI) 50-59.9, adult	Diagnosis	ICD-10-CM
Z68.44	Body mass index (BMI) 60.0-69.9, adult	Diagnosis	ICD-10-CM
Z68.45	Body mass index (BMI) 70 or greater, adult	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

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Code	Description	Code Category	Code Type
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
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

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Code	Description	Code Category	Code Type
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
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
Hyperlipidemia			
272.0	Pure hypercholesterolemia	Diagnosis	ICD-9-CM
272.1	Pure hyperglyceridemia	Diagnosis	ICD-9-CM
272.2	Mixed hyperlipidemia	Diagnosis	ICD-9-CM
272.3	Hyperchylomicronemia	Diagnosis	ICD-9-CM
272.4	Other and unspecified hyperlipidemia	Diagnosis	ICD-9-CM
E78.0	Elevated Lipoprotein(a)	Diagnosis	ICD-10-CM
E78.00	Pure hypercholesterolemia, unspecified	Diagnosis	ICD-10-CM
E78.01	Familial hypercholesterolemia	Diagnosis	ICD-10-CM
E78.1	Pure hyperglyceridemia	Diagnosis	ICD-10-CM
E78.2	Mixed hyperlipidemia	Diagnosis	ICD-10-CM
E78.3	Hyperchylomicronemia	Diagnosis	ICD-10-CM
E78.4	Other hyperlipidemia	Diagnosis	ICD-10-CM
E78.41	Other hyperlipidemia	Diagnosis	ICD-10-CM
E78.49	Pure hypercholesterolemia	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
E78.5	Hyperlipidemia, unspecified	Diagnosis	ICD-10-CM
Tobacco Smoking			
1034F	Current tobacco smoker (CAD, CAP, COPD, PV) (DM)	Procedure	CPT-4
305.1	Nondependent tobacco use disorder	Diagnosis	ICD-9-CM
4001F	Tobacco use cessation intervention, pharmacologic therapy (COPD, CAD, CAP, PV, Asthma) (DM) (PV)	Procedure	CPT-4
4004F	Patient screened for tobacco use and received tobacco cessation intervention (counseling, pharmacotherapy, or both), if identified as a tobacco user (PV, CAD)	Procedure	CPT-4
649.0	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium	Diagnosis	ICD-9-CM
649.00	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	Diagnosis	ICD-9-CM
649.01	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
649.02	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
649.03	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	Diagnosis	ICD-9-CM
649.04	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	Diagnosis	ICD-9-CM
989.84	Toxic effect of tobacco	Diagnosis	ICD-9-CM
99406	Smoking and tobacco use cessation counseling visit; intermediate, greater than 3 minutes up to 10 minutes	Procedure	CPT-4
99407	Smoking and tobacco use cessation counseling visit; intensive, greater than 10 minutes	Procedure	CPT-4
F17.200	Nicotine dependence, unspecified, uncomplicated	Diagnosis	ICD-10-CM
F17.201	Nicotine dependence, unspecified, in remission	Diagnosis	ICD-10-CM
F17.210	Nicotine dependence, cigarettes, uncomplicated	Diagnosis	ICD-10-CM
F17.211	Nicotine dependence, cigarettes, in remission	Diagnosis	ICD-10-CM
F17.220	Nicotine dependence, chewing tobacco, uncomplicated	Diagnosis	ICD-10-CM
F17.221	Nicotine dependence, chewing tobacco, in remission	Diagnosis	ICD-10-CM
F17.290	Nicotine dependence, other tobacco product, uncomplicated	Diagnosis	ICD-10-CM
F17.291	Nicotine dependence, other tobacco product, in remission	Diagnosis	ICD-10-CM
G0436	Smoking and tobacco cessation counseling visit for the asymptomatic patient; intermediate, greater than 3 minutes, up to 10 minutes	Procedure	HCPCS
G0437	Smoking and tobacco cessation counseling visit for the asymptomatic patient; intensive, greater than 10 minutes	Procedure	HCPCS
G9016	Smoking cessation counseling, individual, in the absence of or in addition to any other evaluation and management service, per session (6-10 minutes) [demo project code only]	Procedure	HCPCS
G9276	Documentation that patient is a current tobacco user	Procedure	HCPCS
G9458	Patient documented as tobacco user and received tobacco cessation intervention (must include at least one of the following: advice given to quit smoking or tobacco use, counseling on the benefits of quitting smoking or tobacco use, assistance with or referral to external smoking or tobacco cessation support programs, or current enrollment in smoking or tobacco use cessation program) if identified as a tobacco	Procedure	HCPCS

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
O99.330	Smoking (tobacco) complicating pregnancy, unspecified trimester	Diagnosis	ICD-10-CM
O99.331	Smoking (tobacco) complicating pregnancy, first trimester	Diagnosis	ICD-10-CM
O99.332	Smoking (tobacco) complicating pregnancy, second trimester	Diagnosis	ICD-10-CM
O99.333	Smoking (tobacco) complicating pregnancy, third trimester	Diagnosis	ICD-10-CM
O99.334	Smoking (tobacco) complicating childbirth	Diagnosis	ICD-10-CM
O99.335	Smoking (tobacco) complicating the puerperium	Diagnosis	ICD-10-CM
S4995	Smoking cessation gum	Procedure	HCPCS
S9075	Smoking cessation treatment	Procedure	HCPCS
S9453	Smoking cessation classes, nonphysician provider, per session	Procedure	HCPCS
T65.211A	Toxic effect of chewing tobacco, accidental (unintentional), initial encounter	Diagnosis	ICD-10-CM
T65.212A	Toxic effect of chewing tobacco, intentional self-harm, initial encounter	Diagnosis	ICD-10-CM
T65.213A	Toxic effect of chewing tobacco, assault, initial encounter	Diagnosis	ICD-10-CM
T65.214A	Toxic effect of chewing tobacco, undetermined, initial encounter	Diagnosis	ICD-10-CM
T65.221A	Toxic effect of tobacco cigarettes, accidental (unintentional), initial encounter	Diagnosis	ICD-10-CM
T65.222A	Toxic effect of tobacco cigarettes, intentional self-harm, initial encounter	Diagnosis	ICD-10-CM
T65.223A	Toxic effect of tobacco cigarettes, assault, initial encounter	Diagnosis	ICD-10-CM
T65.224A	Toxic effect of tobacco cigarettes, undetermined, initial encounter	Diagnosis	ICD-10-CM
T65.291A	Toxic effect of other tobacco and nicotine, accidental (unintentional), initial encounter	Diagnosis	ICD-10-CM
T65.292A	Toxic effect of other tobacco and nicotine, intentional self-harm, initial encounter	Diagnosis	ICD-10-CM
T65.293A	Toxic effect of other tobacco and nicotine, assault, initial encounter	Diagnosis	ICD-10-CM
T65.294A	Toxic effect of other tobacco and nicotine, undetermined, initial encounter	Diagnosis	ICD-10-CM
V15.82	Personal history of tobacco use, presenting hazards to health	Diagnosis	ICD-9-CM
Z87.891	Personal history of nicotine dependence	Diagnosis	ICD-10-CM
Alcohol Use			
291	Alcohol-induced mental disorders	Diagnosis	ICD-9-CM
291.0	Alcohol withdrawal delirium	Diagnosis	ICD-9-CM
291.1	Alcohol-induced persisting amnesic disorder	Diagnosis	ICD-9-CM
291.2	Alcohol-induced persisting dementia	Diagnosis	ICD-9-CM
291.3	Alcohol-induced psychotic disorder with hallucinations	Diagnosis	ICD-9-CM
291.4	Idiosyncratic alcohol intoxication	Diagnosis	ICD-9-CM
291.5	Alcohol-induced psychotic disorder with delusions	Diagnosis	ICD-9-CM
291.8	Other specified alcohol-induced mental disorders	Diagnosis	ICD-9-CM
291.81	Alcohol withdrawal	Diagnosis	ICD-9-CM
291.82	Alcohol induced sleep disorders	Diagnosis	ICD-9-CM
291.89	Other specified alcohol-induced mental disorders	Diagnosis	ICD-9-CM
291.9	Unspecified alcohol-induced mental disorders	Diagnosis	ICD-9-CM
303	Alcohol dependence syndrome	Diagnosis	ICD-9-CM
303.0	Acute alcoholic intoxication	Diagnosis	ICD-9-CM
303.00	Acute alcoholic intoxication, unspecified	Diagnosis	ICD-9-CM
303.01	Acute alcoholic intoxication, continuous	Diagnosis	ICD-9-CM
303.02	Acute alcoholic intoxication, episodic	Diagnosis	ICD-9-CM
303.03	Acute alcoholic intoxication, in remission	Diagnosis	ICD-9-CM
303.9	Other and unspecified alcohol dependence	Diagnosis	ICD-9-CM
303.90	Other and unspecified alcohol dependence, unspecified	Diagnosis	ICD-9-CM

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
303.91	Other and unspecified alcohol dependence, continuous	Diagnosis	ICD-9-CM
303.92	Other and unspecified alcohol dependence, episodic	Diagnosis	ICD-9-CM
303.93	Other and unspecified alcohol dependence, in remission	Diagnosis	ICD-9-CM
305.0	Nondependent alcohol abuse	Diagnosis	ICD-9-CM
305.00	Nondependent alcohol abuse, unspecified	Diagnosis	ICD-9-CM
305.01	Nondependent alcohol abuse, continuous	Diagnosis	ICD-9-CM
305.02	Nondependent alcohol abuse, episodic	Diagnosis	ICD-9-CM
305.03	Nondependent alcohol abuse, in remission	Diagnosis	ICD-9-CM
357.5	Alcoholic polyneuropathy	Diagnosis	ICD-9-CM
425.5	Alcoholic cardiomyopathy	Diagnosis	ICD-9-CM
535.3	Alcoholic gastritis	Diagnosis	ICD-9-CM
535.30	Alcoholic gastritis without mention of hemorrhage	Diagnosis	ICD-9-CM
535.31	Alcoholic gastritis with hemorrhage	Diagnosis	ICD-9-CM
571.0	Alcoholic fatty liver	Diagnosis	ICD-9-CM
571.1	Acute alcoholic hepatitis	Diagnosis	ICD-9-CM
571.2	Alcoholic cirrhosis of liver	Diagnosis	ICD-9-CM
571.3	Unspecified alcoholic liver damage	Diagnosis	ICD-9-CM
571.5	Cirrhosis of liver without mention of alcohol	Diagnosis	ICD-9-CM
571.8	Other chronic nonalcoholic liver disease	Diagnosis	ICD-9-CM
571.9	Unspecified chronic liver disease without mention of alcohol	Diagnosis	ICD-9-CM
760.71	Noxious influences affecting fetus or newborn via placenta or breast milk, alcohol	Diagnosis	ICD-9-CM
790.3	Excessive blood level of alcohol	Diagnosis	ICD-9-CM
94.46	Alcoholism counseling	Procedure	ICD-9-CM
94.53	Referral for alcoholism rehabilitation	Procedure	ICD-9-CM
94.6	Alcohol and drug rehabilitation and detoxification	Procedure	ICD-9-CM
94.61	Alcohol rehabilitation	Procedure	ICD-9-CM
94.62	Alcohol detoxification	Procedure	ICD-9-CM
94.63	Alcohol rehabilitation and detoxification	Procedure	ICD-9-CM
94.67	Combined alcohol and drug rehabilitation	Procedure	ICD-9-CM
94.68	Combined alcohol and drug detoxification	Procedure	ICD-9-CM
94.69	Combined alcohol and drug rehabilitation and detoxification	Procedure	ICD-9-CM
977.3	Poisoning by alcohol deterrents	Diagnosis	ICD-9-CM
980	Toxic effect of alcohol	Diagnosis	ICD-9-CM
980.0	Toxic effect of ethyl alcohol	Diagnosis	ICD-9-CM
980.1	Toxic effect of methyl alcohol	Diagnosis	ICD-9-CM
980.2	Toxic effect of isopropyl alcohol	Diagnosis	ICD-9-CM
980.8	Toxic effect of other specified alcohols	Diagnosis	ICD-9-CM
980.9	Toxic effect of unspecified alcohol	Diagnosis	ICD-9-CM
E24.4	Alcohol-induced pseudo-Cushing's syndrome	Diagnosis	ICD-10-CM
E860	Accidental poisoning by alcohol, not elsewhere classified	Diagnosis	ICD-9-CM
E860.0	Accidental poisoning by alcoholic beverages	Diagnosis	ICD-9-CM
E860.1	Accidental poisoning by other and unspecified ethyl alcohol and its products	Diagnosis	ICD-9-CM
E860.2	Accidental poisoning by methyl alcohol	Diagnosis	ICD-9-CM
E860.3	Accidental poisoning by isopropyl alcohol	Diagnosis	ICD-9-CM

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
E860.8	Accidental poisoning by other specified alcohols	Diagnosis	ICD-9-CM
E860.9	Accidental poisoning by unspecified alcohol	Diagnosis	ICD-9-CM
E947.3	Alcohol deterrents causing adverse effect in therapeutic use	Diagnosis	ICD-9-CM
F10	Alcohol related disorders	Diagnosis	ICD-10-CM
F10.1	Alcohol abuse	Diagnosis	ICD-10-CM
F10.10	Alcohol abuse, uncomplicated	Diagnosis	ICD-10-CM
F10.11	Alcohol abuse, in remission	Diagnosis	ICD-10-CM
F10.12	Alcohol abuse with intoxication	Diagnosis	ICD-10-CM
F10.120	Alcohol abuse with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F10.121	Alcohol abuse with intoxication delirium	Diagnosis	ICD-10-CM
F10.129	Alcohol abuse with intoxication, unspecified	Diagnosis	ICD-10-CM
F10.13	Alcohol abuse, with withdrawal	Diagnosis	ICD-10-CM
F10.130	Alcohol abuse with withdrawal, uncomplicated	Diagnosis	ICD-10-CM
F10.131	Alcohol abuse with withdrawal delirium	Diagnosis	ICD-10-CM
F10.132	Alcohol abuse with withdrawal with perceptual disturbance	Diagnosis	ICD-10-CM
F10.139	Alcohol abuse with withdrawal, unspecified	Diagnosis	ICD-10-CM
F10.14	Alcohol abuse with alcohol-induced mood disorder	Diagnosis	ICD-10-CM
F10.15	Alcohol abuse with alcohol-induced psychotic disorder	Diagnosis	ICD-10-CM
F10.150	Alcohol abuse with alcohol-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F10.151	Alcohol abuse with alcohol-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F10.159	Alcohol abuse with alcohol-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F10.18	Alcohol abuse with other alcohol-induced disorders	Diagnosis	ICD-10-CM
F10.180	Alcohol abuse with alcohol-induced anxiety disorder	Diagnosis	ICD-10-CM
F10.181	Alcohol abuse with alcohol-induced sexual dysfunction	Diagnosis	ICD-10-CM
F10.182	Alcohol abuse with alcohol-induced sleep disorder	Diagnosis	ICD-10-CM
F10.188	Alcohol abuse with other alcohol-induced disorder	Diagnosis	ICD-10-CM
F10.19	Alcohol abuse with unspecified alcohol-induced disorder	Diagnosis	ICD-10-CM
F10.2	Alcohol dependence	Diagnosis	ICD-10-CM
F10.20	Alcohol dependence, uncomplicated	Diagnosis	ICD-10-CM
F10.21	Alcohol dependence, in remission	Diagnosis	ICD-10-CM
F10.22	Alcohol dependence with intoxication	Diagnosis	ICD-10-CM
F10.220	Alcohol dependence with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F10.221	Alcohol dependence with intoxication delirium	Diagnosis	ICD-10-CM
F10.229	Alcohol dependence with intoxication, unspecified	Diagnosis	ICD-10-CM
F10.23	Alcohol dependence with withdrawal	Diagnosis	ICD-10-CM
F10.230	Alcohol dependence with withdrawal, uncomplicated	Diagnosis	ICD-10-CM
F10.231	Alcohol dependence with withdrawal delirium	Diagnosis	ICD-10-CM
F10.232	Alcohol dependence with withdrawal with perceptual disturbance	Diagnosis	ICD-10-CM
F10.239	Alcohol dependence with withdrawal, unspecified	Diagnosis	ICD-10-CM
F10.24	Alcohol dependence with alcohol-induced mood disorder	Diagnosis	ICD-10-CM
F10.25	Alcohol dependence with alcohol-induced psychotic disorder	Diagnosis	ICD-10-CM
F10.250	Alcohol dependence with alcohol-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F10.251	Alcohol dependence with alcohol-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F10.259	Alcohol dependence with alcohol-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
F10.26	Alcohol dependence with alcohol-induced persisting amnestic disorder	Diagnosis	ICD-10-CM
F10.27	Alcohol dependence with alcohol-induced persisting dementia	Diagnosis	ICD-10-CM
F10.28	Alcohol dependence with other alcohol-induced disorders	Diagnosis	ICD-10-CM
F10.280	Alcohol dependence with alcohol-induced anxiety disorder	Diagnosis	ICD-10-CM
F10.281	Alcohol dependence with alcohol-induced sexual dysfunction	Diagnosis	ICD-10-CM
F10.282	Alcohol dependence with alcohol-induced sleep disorder	Diagnosis	ICD-10-CM
F10.288	Alcohol dependence with other alcohol-induced disorder	Diagnosis	ICD-10-CM
F10.29	Alcohol dependence with unspecified alcohol-induced disorder	Diagnosis	ICD-10-CM
F10.9	Alcohol use, unspecified	Diagnosis	ICD-10-CM
F10.90	Alcohol use, unspecified, uncomplicated	Diagnosis	ICD-10-CM
F10.91	Alcohol use, unspecified, in remission	Diagnosis	ICD-10-CM
F10.92	Alcohol use, unspecified with intoxication	Diagnosis	ICD-10-CM
F10.920	Alcohol use, unspecified with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F10.921	Alcohol use, unspecified with intoxication delirium	Diagnosis	ICD-10-CM
F10.929	Alcohol use, unspecified with intoxication, unspecified	Diagnosis	ICD-10-CM
F10.93	Alcohol use, unspecified with withdrawal	Diagnosis	ICD-10-CM
F10.930	Alcohol use, unspecified with withdrawal, uncomplicated	Diagnosis	ICD-10-CM
F10.931	Alcohol use, unspecified with withdrawal delirium	Diagnosis	ICD-10-CM
F10.932	Alcohol use, unspecified with withdrawal with perceptual disturbance	Diagnosis	ICD-10-CM
F10.939	Alcohol use, unspecified with withdrawal, unspecified	Diagnosis	ICD-10-CM
F10.94	Alcohol use, unspecified with alcohol-induced mood disorder	Diagnosis	ICD-10-CM
F10.95	Alcohol use, unspecified with alcohol-induced psychotic disorder	Diagnosis	ICD-10-CM
F10.950	Alcohol use, unspecified with alcohol-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F10.951	Alcohol use, unspecified with alcohol-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F10.959	Alcohol use, unspecified with alcohol-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F10.96	Alcohol use, unspecified with alcohol-induced persisting amnestic disorder	Diagnosis	ICD-10-CM
F10.97	Alcohol use, unspecified with alcohol-induced persisting dementia	Diagnosis	ICD-10-CM
F10.98	Alcohol use, unspecified with other alcohol-induced disorders	Diagnosis	ICD-10-CM
F10.980	Alcohol use, unspecified with alcohol-induced anxiety disorder	Diagnosis	ICD-10-CM
F10.981	Alcohol use, unspecified with alcohol-induced sexual dysfunction	Diagnosis	ICD-10-CM
F10.982	Alcohol use, unspecified with alcohol-induced sleep disorder	Diagnosis	ICD-10-CM
F10.988	Alcohol use, unspecified with other alcohol-induced disorder	Diagnosis	ICD-10-CM
F10.99	Alcohol use, unspecified with unspecified alcohol-induced disorder	Diagnosis	ICD-10-CM
G31.2	Degeneration of nervous system due to alcohol	Diagnosis	ICD-10-CM
G62.1	Alcoholic polyneuropathy	Diagnosis	ICD-10-CM
G72.1	Alcoholic myopathy	Diagnosis	ICD-10-CM
HZ2ZZZZ	Detoxification Services for Substance Abuse Treatment	Procedure	ICD-10-PCS
HZ30ZZZ	Individual Counseling for Substance Abuse Treatment, Cognitive	Procedure	ICD-10-PCS
HZ31ZZZ	Individual Counseling for Substance Abuse Treatment, Behavioral	Procedure	ICD-10-PCS
HZ32ZZZ	Individual Counseling for Substance Abuse Treatment, Cognitive-Behavioral	Procedure	ICD-10-PCS
HZ33ZZZ	Individual Counseling for Substance Abuse Treatment, 12-Step	Procedure	ICD-10-PCS
HZ34ZZZ	Individual Counseling for Substance Abuse Treatment, Interpersonal	Procedure	ICD-10-PCS
HZ35ZZZ	Individual Counseling for Substance Abuse Treatment, Vocational	Procedure	ICD-10-PCS
HZ36ZZZ	Individual Counseling for Substance Abuse Treatment, Psychoeducation	Procedure	ICD-10-PCS

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
HZ37ZZZ	Individual Counseling for Substance Abuse Treatment, Motivational Enhancement	Procedure	ICD-10-PCS
HZ38ZZZ	Individual Counseling for Substance Abuse Treatment, Confrontational	Procedure	ICD-10-PCS
HZ39ZZZ	Individual Counseling for Substance Abuse Treatment, Continuing Care	Procedure	ICD-10-PCS
HZ3BZZZ	Individual Counseling for Substance Abuse Treatment, Spiritual	Procedure	ICD-10-PCS
HZ40ZZZ	Group Counseling for Substance Abuse Treatment, Cognitive	Procedure	ICD-10-PCS
HZ41ZZZ	Group Counseling for Substance Abuse Treatment, Behavioral	Procedure	ICD-10-PCS
HZ42ZZZ	Group Counseling for Substance Abuse Treatment, Cognitive-Behavioral	Procedure	ICD-10-PCS
HZ43ZZZ	Group Counseling for Substance Abuse Treatment, 12-Step	Procedure	ICD-10-PCS
HZ44ZZZ	Group Counseling for Substance Abuse Treatment, Interpersonal	Procedure	ICD-10-PCS
HZ45ZZZ	Group Counseling for Substance Abuse Treatment, Vocational	Procedure	ICD-10-PCS
HZ46ZZZ	Group Counseling for Substance Abuse Treatment, Psychoeducation	Procedure	ICD-10-PCS
HZ47ZZZ	Group Counseling for Substance Abuse Treatment, Motivational Enhancement	Procedure	ICD-10-PCS
HZ48ZZZ	Group Counseling for Substance Abuse Treatment, Confrontational	Procedure	ICD-10-PCS
HZ49ZZZ	Group Counseling for Substance Abuse Treatment, Continuing Care	Procedure	ICD-10-PCS
HZ4BZZZ	Group Counseling for Substance Abuse Treatment, Spiritual	Procedure	ICD-10-PCS
HZ50ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Cognitive	Procedure	ICD-10-PCS
HZ51ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Behavioral	Procedure	ICD-10-PCS
HZ52ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Cognitive-Behavioral	Procedure	ICD-10-PCS
HZ53ZZZ	Individual Psychotherapy for Substance Abuse Treatment, 12-Step	Procedure	ICD-10-PCS
HZ54ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Interpersonal	Procedure	ICD-10-PCS
HZ55ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Interactive	Procedure	ICD-10-PCS
HZ56ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Psychoeducation	Procedure	ICD-10-PCS
HZ57ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Motivational Enhancement	Procedure	ICD-10-PCS
HZ58ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Confrontational	Procedure	ICD-10-PCS
HZ59ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Supportive	Procedure	ICD-10-PCS
HZ5BZZZ	Individual Psychotherapy for Substance Abuse Treatment, Psychoanalysis	Procedure	ICD-10-PCS
HZ5CZZZ	Individual Psychotherapy for Substance Abuse Treatment, Psychodynamic	Procedure	ICD-10-PCS
HZ5DZZZ	Individual Psychotherapy for Substance Abuse Treatment, Psychophysiological	Procedure	ICD-10-PCS
HZ83ZZZ	Medication Management for Substance Abuse Treatment, Antabuse	Procedure	ICD-10-PCS
HZ86ZZZ	Medication Management for Substance Abuse Treatment, Clonidine	Procedure	ICD-10-PCS
HZ88ZZZ	Medication Management for Substance Abuse Treatment, Psychiatric Medication	Procedure	ICD-10-PCS
HZ89ZZZ	Medication Management for Substance Abuse Treatment, Other Replacement Medication	Procedure	ICD-10-PCS
HZ93ZZZ	Pharmacotherapy for Substance Abuse Treatment, Antabuse	Procedure	ICD-10-PCS
HZ96ZZZ	Pharmacotherapy for Substance Abuse Treatment, Clonidine	Procedure	ICD-10-PCS
HZ98ZZZ	Pharmacotherapy for Substance Abuse Treatment, Psychiatric Medication	Procedure	ICD-10-PCS
HZ99ZZZ	Pharmacotherapy for Substance Abuse Treatment, Other Replacement Medication	Procedure	ICD-10-PCS
I42.6	Alcoholic cardiomyopathy	Diagnosis	ICD-10-CM
K29.2	Alcoholic gastritis	Diagnosis	ICD-10-CM
K29.20	Alcoholic gastritis without bleeding	Diagnosis	ICD-10-CM
K29.21	Alcoholic gastritis with bleeding	Diagnosis	ICD-10-CM
K70	Alcoholic liver disease	Diagnosis	ICD-10-CM
K70.0	Alcoholic fatty liver	Diagnosis	ICD-10-CM
K70.1	Alcoholic hepatitis	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
K70.10	Alcoholic hepatitis without ascites	Diagnosis	ICD-10-CM
K70.11	Alcoholic hepatitis with ascites	Diagnosis	ICD-10-CM
K70.2	Alcoholic fibrosis and sclerosis of liver	Diagnosis	ICD-10-CM
K70.3	Alcoholic cirrhosis of liver	Diagnosis	ICD-10-CM
K70.30	Alcoholic cirrhosis of liver without ascites	Diagnosis	ICD-10-CM
K70.31	Alcoholic cirrhosis of liver with ascites	Diagnosis	ICD-10-CM
K70.4	Alcoholic hepatic failure	Diagnosis	ICD-10-CM
K70.40	Alcoholic hepatic failure without coma	Diagnosis	ICD-10-CM
K70.41	Alcoholic hepatic failure with coma	Diagnosis	ICD-10-CM
K70.9	Alcoholic liver disease, unspecified	Diagnosis	ICD-10-CM
K85.2	Alcohol induced acute pancreatitis	Diagnosis	ICD-10-CM
K85.20	Alcohol induced acute pancreatitis without necrosis or infection	Diagnosis	ICD-10-CM
K85.21	Alcohol induced acute pancreatitis with uninfected necrosis	Diagnosis	ICD-10-CM
K85.22	Alcohol induced acute pancreatitis with infected necrosis	Diagnosis	ICD-10-CM
K86.0	Alcohol-induced chronic pancreatitis	Diagnosis	ICD-10-CM
O35.4	Maternal care for (suspected) damage to fetus from alcohol	Diagnosis	ICD-10-CM
O35.4XX0	Maternal care for (suspected) damage to fetus from alcohol, not applicable or unspecified	Diagnosis	ICD-10-CM
O35.4XX1	Maternal care for (suspected) damage to fetus from alcohol, fetus 1	Diagnosis	ICD-10-CM
O35.4XX2	Maternal care for (suspected) damage to fetus from alcohol, fetus 2	Diagnosis	ICD-10-CM
O35.4XX3	Maternal care for (suspected) damage to fetus from alcohol, fetus 3	Diagnosis	ICD-10-CM
O35.4XX4	Maternal care for (suspected) damage to fetus from alcohol, fetus 4	Diagnosis	ICD-10-CM
O35.4XX5	Maternal care for (suspected) damage to fetus from alcohol, fetus 5	Diagnosis	ICD-10-CM
O35.4XX9	Maternal care for (suspected) damage to fetus from alcohol, other fetus	Diagnosis	ICD-10-CM
O99.31	Alcohol use complicating pregnancy, childbirth, and the puerperium	Diagnosis	ICD-10-CM
O99.310	Alcohol use complicating pregnancy, unspecified trimester	Diagnosis	ICD-10-CM
O99.311	Alcohol use complicating pregnancy, first trimester	Diagnosis	ICD-10-CM
O99.312	Alcohol use complicating pregnancy, second trimester	Diagnosis	ICD-10-CM
O99.313	Alcohol use complicating pregnancy, third trimester	Diagnosis	ICD-10-CM
O99.314	Alcohol use complicating childbirth	Diagnosis	ICD-10-CM
O99.315	Alcohol use complicating the puerperium	Diagnosis	ICD-10-CM
P04.3	Newborn affected by maternal use of alcohol	Diagnosis	ICD-10-CM
Q86.0	Fetal alcohol syndrome (dysmorphic)	Diagnosis	ICD-10-CM
R78.0	Finding of alcohol in blood	Diagnosis	ICD-10-CM
T51	Toxic effect of alcohol	Diagnosis	ICD-10-CM
T51.0X1A	Toxic effect of ethanol, accidental (unintentional), initial encounter	Diagnosis	ICD-10-CM
T51.0X2A	Toxic effect of ethanol, intentional self-harm, initial encounter	Diagnosis	ICD-10-CM
T51.0X3A	Toxic effect of ethanol, assault, initial encounter	Diagnosis	ICD-10-CM
T51.0X4A	Toxic effect of ethanol, undetermined, initial encounter	Diagnosis	ICD-10-CM
T51.1X1A	Toxic effect of methanol, accidental (unintentional), initial encounter	Diagnosis	ICD-10-CM
T51.1X2A	Toxic effect of methanol, intentional self-harm, initial encounter	Diagnosis	ICD-10-CM
T51.1X3A	Toxic effect of methanol, assault, initial encounter	Diagnosis	ICD-10-CM
T51.1X4A	Toxic effect of methanol, undetermined, initial encounter	Diagnosis	ICD-10-CM
T51.2X1A	Toxic effect of 2-Propanol, accidental (unintentional), initial encounter	Diagnosis	ICD-10-CM

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
T51.2X2A	Toxic effect of 2-Propanol, intentional self-harm, initial encounter	Diagnosis	ICD-10-CM
T51.2X3A	Toxic effect of 2-Propanol, assault, initial encounter	Diagnosis	ICD-10-CM
T51.2X4A	Toxic effect of 2-Propanol, undetermined, initial encounter	Diagnosis	ICD-10-CM
T51.8	Toxic effect of other alcohols	Diagnosis	ICD-10-CM
T51.8X	Toxic effect of other alcohols	Diagnosis	ICD-10-CM
T51.8X1	Toxic effect of other alcohols, accidental (unintentional)	Diagnosis	ICD-10-CM
T51.8X1A	Toxic effect of other alcohols, accidental (unintentional), initial encounter	Diagnosis	ICD-10-CM
T51.8X1D	Toxic effect of other alcohols, accidental (unintentional), subsequent encounter	Diagnosis	ICD-10-CM
T51.8X1S	Toxic effect of other alcohols, accidental (unintentional), sequela	Diagnosis	ICD-10-CM
T51.8X2	Toxic effect of other alcohols, intentional self-harm	Diagnosis	ICD-10-CM
T51.8X2A	Toxic effect of other alcohols, intentional self-harm, initial encounter	Diagnosis	ICD-10-CM
T51.8X2D	Toxic effect of other alcohols, intentional self-harm, subsequent encounter	Diagnosis	ICD-10-CM
T51.8X2S	Toxic effect of other alcohols, intentional self-harm, sequela	Diagnosis	ICD-10-CM
T51.8X3	Toxic effect of other alcohols, assault	Diagnosis	ICD-10-CM
T51.8X3A	Toxic effect of other alcohols, assault, initial encounter	Diagnosis	ICD-10-CM
T51.8X3D	Toxic effect of other alcohols, assault, subsequent encounter	Diagnosis	ICD-10-CM
T51.8X3S	Toxic effect of other alcohols, assault, sequela	Diagnosis	ICD-10-CM
T51.8X4	Toxic effect of other alcohols, undetermined	Diagnosis	ICD-10-CM
T51.8X4A	Toxic effect of other alcohols, undetermined, initial encounter	Diagnosis	ICD-10-CM
T51.8X4D	Toxic effect of other alcohols, undetermined, subsequent encounter	Diagnosis	ICD-10-CM
T51.8X4S	Toxic effect of other alcohols, undetermined, sequela	Diagnosis	ICD-10-CM
T51.9	Toxic effect of unspecified alcohol	Diagnosis	ICD-10-CM
T51.91	Toxic effect of unspecified alcohol, accidental (unintentional)	Diagnosis	ICD-10-CM
T51.91XA	Toxic effect of unspecified alcohol, accidental (unintentional), initial encounter	Diagnosis	ICD-10-CM
T51.91XD	Toxic effect of unspecified alcohol, accidental (unintentional), subsequent encounter	Diagnosis	ICD-10-CM
T51.91XS	Toxic effect of unspecified alcohol, accidental (unintentional), sequela	Diagnosis	ICD-10-CM
T51.92	Toxic effect of unspecified alcohol, intentional self-harm	Diagnosis	ICD-10-CM
T51.92XA	Toxic effect of unspecified alcohol, intentional self-harm, initial encounter	Diagnosis	ICD-10-CM
T51.92XD	Toxic effect of unspecified alcohol, intentional self-harm, subsequent encounter	Diagnosis	ICD-10-CM
T51.92XS	Toxic effect of unspecified alcohol, intentional self-harm, sequela	Diagnosis	ICD-10-CM
T51.93	Toxic effect of unspecified alcohol, assault	Diagnosis	ICD-10-CM
T51.93XA	Toxic effect of unspecified alcohol, assault, initial encounter	Diagnosis	ICD-10-CM
T51.93XD	Toxic effect of unspecified alcohol, assault, subsequent encounter	Diagnosis	ICD-10-CM
T51.93XS	Toxic effect of unspecified alcohol, assault, sequela	Diagnosis	ICD-10-CM
T51.94	Toxic effect of unspecified alcohol, undetermined	Diagnosis	ICD-10-CM
T51.94XA	Toxic effect of unspecified alcohol, undetermined, initial encounter	Diagnosis	ICD-10-CM
T51.94XD	Toxic effect of unspecified alcohol, undetermined, subsequent encounter	Diagnosis	ICD-10-CM
T51.94XS	Toxic effect of unspecified alcohol, undetermined, sequela	Diagnosis	ICD-10-CM
V11.3	Personal history of alcoholism	Diagnosis	ICD-9-CM
Y90	Evidence of alcohol involvement determined by blood alcohol level	Diagnosis	ICD-10-CM
Y90.0	Blood alcohol level of less than 20 mg/100 ml	Diagnosis	ICD-10-CM
Y90.1	Blood alcohol level of 20-39 mg/100 ml	Diagnosis	ICD-10-CM
Y90.2	Blood alcohol level of 40-59 mg/100 ml	Diagnosis	ICD-10-CM
Y90.3	Blood alcohol level of 60-79 mg/100 ml	Diagnosis	ICD-10-CM

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
Y90.4	Blood alcohol level of 80-99 mg/100 ml	Diagnosis	ICD-10-CM
Y90.5	Blood alcohol level of 100-119 mg/100 ml	Diagnosis	ICD-10-CM
Y90.6	Blood alcohol level of 120-199 mg/100 ml	Diagnosis	ICD-10-CM
Y90.7	Blood alcohol level of 200-239 mg/100 ml	Diagnosis	ICD-10-CM
Y90.8	Blood alcohol level of 240 mg/100 ml or more	Diagnosis	ICD-10-CM
Y90.9	Presence of alcohol in blood, level not specified	Diagnosis	ICD-10-CM
Z02.83	Encounter for blood-alcohol and blood-drug test	Diagnosis	ICD-10-CM
Z71.4	Alcohol abuse counseling and surveillance	Diagnosis	ICD-10-CM
Z71.41	Alcohol abuse counseling and surveillance of alcoholic	Diagnosis	ICD-10-CM
Continuous Glucose Monitoring			
95249	Ambulatory continuous glucose monitoring of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours; patient-provided equipment, sensor placement, hook-up, calibration of monitor, patient training, and printout of recording	Procedure	CPT-4
95250	Ambulatory continuous glucose monitoring of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours; physician or other qualified health care professional (office) provided equipment, sensor placement, hook-up, calibration of monitor, patient training, removal of sensor, and printout of recording	Procedure	CPT-4
95251	Ambulatory continuous glucose monitoring of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours; analysis, interpretation and report	Procedure	CPT-4
A4238	Supply allowance for adjunctive, nonimplanted continuous glucose monitor (CGM), includes all supplies and accessories, 1 month supply = 1 unit of service	Procedure	HCPCS
A4239	Supply allowance for nonadjunctive, nonimplanted continuous glucose monitor (CGM), includes all supplies and accessories, 1 month supply = 1 unit of service	Procedure	HCPCS
A9276	Sensor; invasive (e.g., subcutaneous), disposable, for use with nondurable medical equipment interstitial continuous glucose monitoring system (CGM), one unit = 1 day supply	Procedure	HCPCS
A9277	Transmitter; external, for use with nondurable medical equipment interstitial continuous glucose monitoring system (CGM)	Procedure	HCPCS
A9278	Receiver (monitor); external, for use with nondurable medical equipment interstitial continuous glucose monitoring system (CGM)	Procedure	HCPCS
E2102	Adjunctive, nonimplanted continuous glucose monitor (CGM) or receiver	Procedure	HCPCS
E2103	Nonadjunctive, nonimplanted continuous glucose monitor (CGM) or receiver	Procedure	HCPCS
K0553	Supply allowance for therapeutic continuous glucose monitor (CGM), includes all supplies and accessories, 1 month supply = 1 unit of service	Procedure	HCPCS
S1034	Artificial pancreas device system (e.g., low glucose suspend [LGS] feature) including continuous glucose monitor, blood glucose device, insulin pump and computer algorithm that communicates with all of the devices	Procedure	HCPCS
Lipid-Lowering Medications			
4013F	Statin therapy prescribed or currently being taken (CAD)	Procedure	CPT-2
G8816	Statin medication prescribed at discharge	Procedure	HCPCS
G9441	Statin prescribed at discharge	Procedure	HCPCS
G9664	Patients who are currently statin therapy users or received an order (prescription) for statin therapy	Procedure	HCPCS
G9796	Patient is currently on a statin therapy	Procedure	HCPCS

Appendix G. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Covariates in this Request

Code	Description	Code Category	Code Type
Alpha Blockers			
J0210	Injection, methyldopate HCl, up to 250 mg	Procedure	HCPCS
J0735	Injection, clonidine HCl, 1 mg	Procedure	HCPCS
J2670	Injection, tolazoline HCl, up to 25 mg	Procedure	HCPCS
Other Antihypertensives			
J0360	Injection, hydralazine HCl, up to 20 mg	Procedure	HCPCS
J1730	Injection, diazoxide, up to 300 mg	Procedure	HCPCS

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

Generic Name	Brand Name
Chronic Kidney Disease Treatment	
calcium acetate	Eliphos
calcium acetate	PhosLo
calcium acetate	Phoslyra
calcium acetate	calcium acetate(phosphat bind)
calcium carbonate/magnesium carbonate	Antacid Extra-Strength
calcium carbonate/magnesium carbonate	Cidatrine-TM
calcium carbonate/magnesium carbonate	MagneBind 300
calcium carbonate/magnesium carbonate	Magnebind 400
calcium carbonate/magnesium carbonate	Sintra-ES
darbepoetin alfa in polysorbate 80	Aranesp (in polysorbate)
epoetin alfa	Epogen
epoetin alfa	Procrit
epoetin alfa-epbx	Retacrit
lanthanum carbonate	Fosrenol
lanthanum carbonate	lanthanum
methoxy polyethylene glycol-epoetin beta	Mircera
potassium bicarbonate/sodium bicarbonate/citric acid	Alka-Seltzer Gold
sevelamer HCl	Renagel
sevelamer HCl	sevelamer HCl
sevelamer carbonate	Renvela
sevelamer carbonate	sevelamer carbonate
simethicone/sodium bicarbonate/citric acid	E-Z-Gas II
sodium bicarbonate	sodium bicarbonate
sodium bicarbonate/citric acid	Alka-Seltzer Heartburn
sodium bicarbonate/citric acid	Citrocarbonate Antacid
sucoferric oxyhydroxide	Velphoro
Long/Intermediate-Acting Insulin	
insulin NPH human isophane	Humulin N NPH Insulin KwikPen
insulin NPH human isophane	Humulin N NPH U-100 Insulin
insulin NPH human isophane	Humulin N Pen
insulin NPH human isophane	Novolin N FlexPen
insulin NPH human isophane	Novolin N NPH U-100 Insulin
insulin degludec	Tresiba FlexTouch U-100
insulin degludec	Tresiba FlexTouch U-200
insulin degludec	Tresiba U-100 Insulin
insulin degludec	insulin degludec
insulin degludec/liraglutide	Xultophy 100/3.6
insulin detemir	Levemir FlexPen
insulin detemir	Levemir FlexTouch U100 Insulin
insulin detemir	Levemir U-100 Insulin
insulin glargine,human recombinant analog	Basaglar KwikPen U-100 Insulin
insulin glargine,human recombinant analog	Basaglar Tempo Pen(U-100)Insulin
insulin glargine,human recombinant analog	Lantus Solostar U-100 Insulin
insulin glargine,human recombinant analog	Lantus U-100 Insulin
insulin glargine,human recombinant analog	Semglee Pen U-100 Insulin
insulin glargine,human recombinant analog	Semglee U-100 Insulin
insulin glargine,human recombinant analog	Toujeo Max U-300 SoloStar

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

Generic Name	Brand Name
insulin glargine,human recombinant analog	Toujeo SoloStar U-300 Insulin
insulin glargine,human recombinant analog	insulin glargine
insulin glargine,human recombinant analog	insulin glargine U-300 conc
insulin glargine,human recombinant analog/lixisenatide	Soliqua 100/33
insulin glargine-aglr	Rezvoglar KwikPen
insulin glargine-yfgn	Semglee(insulin glarg-yfgn)Pen
insulin glargine-yfgn	Semglee(insulin glargine-yfgn)
insulin glargine-yfgn	insulin glargine-yfgn
Short/Rapid-Acting Insulin	
insulin aspart	Novolog FlexPen U-100 Insulin
insulin aspart	Novolog PenFill U-100 Insulin
insulin aspart	Novolog U-100 Insulin aspart
insulin aspart	insulin aspart U-100
insulin aspart (niacinamide)	Fiasp FlexTouch U-100 Insulin
insulin aspart (niacinamide)	Fiasp Penfill U-100 Insulin
insulin aspart (niacinamide)	Fiasp U-100 Insulin
insulin aspart (niacinamide)/pump cartridge	Fiasp Pumpcart
insulin glulisine	Apidra SoloStar U-100 Insulin
insulin glulisine	Apidra U-100 Insulin
insulin lispro	Admelog SoloStar U-100 Insulin
insulin lispro	Admelog U-100 Insulin lispro
insulin lispro	Humalog Junior KwikPen U-100
insulin lispro	Humalog KwikPen Insulin
insulin lispro	Humalog Tempo Pen(U-100)Insuln
insulin lispro	Humalog U-100 Insulin
insulin lispro	insulin lispro
insulin lispro-aabc	Lyumjev KwikPen U-100 Insulin
insulin lispro-aabc	Lyumjev KwikPen U-200 Insulin
insulin lispro-aabc	Lyumjev Tempo Pen(U-100)Insuln
insulin lispro-aabc	Lyumjev U-100 Insulin
insulin regular, human	Afrezza
insulin regular, human	Humulin R Regular U-100 Insulin
insulin regular, human	Humulin R U-500 (Conc) Insulin
insulin regular, human	Humulin R U-500 (Conc) Kwikpen
insulin regular, human	Novolin R FlexPen
insulin regular, human	Novolin R Regular U100 Insulin
insulin regular, human in 0.9 % sodium chloride	Myxredlin
Combination Insulin	
insulin NPH human isophane/insulin regular, human	Humulin 70/30 Insulin Pen
insulin NPH human isophane/insulin regular, human	Humulin 70/30 U-100 Insulin
insulin NPH human isophane/insulin regular, human	Humulin 70/30 U-100 KwikPen
insulin NPH human isophane/insulin regular, human	Novolin 70-30 FlexPen U-100
insulin NPH human isophane/insulin regular, human	Novolin 70/30 U-100 Insulin
insulin aspart protamine human/insulin aspart	Novolog Mix 70-30 U-100 Insulin
insulin aspart protamine human/insulin aspart	Novolog Mix 70-30FlexPen U-100
insulin aspart protamine human/insulin aspart	insulin asp prt-insulin aspart
insulin lispro protamine and insulin lispro	Humalog Mix 50-50 Insuln U-100
insulin lispro protamine and insulin lispro	Humalog Mix 50-50 KwikPen

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

Generic Name	Brand Name
insulin lispro protamine and insulin lispro	Humalog Mix 75-25 KwikPen
insulin lispro protamine and insulin lispro	Humalog Mix 75-25(U-100)Insuln
insulin lispro protamine and insulin lispro	insulin lispro protamin-lispro
Insulin Pump	
insulin aspart (niacinamide)/pump cartridge	Fiasp Pumpcart
Tobacco Smoking	
bupropion HCl	Budeprion SR
bupropion HCl	Budeprion XL
bupropion HCl	Buproban
bupropion HCl	Forfivo XL
bupropion HCl	Wellbutrin
bupropion HCl	Wellbutrin SR
bupropion HCl	Wellbutrin XL
bupropion HCl	Zyban
bupropion HCl	bupropion HCl
bupropion HCl	bupropion HCl (smoking deter)
nicotine	NTS Step 1
nicotine	Nicoderm CQ
nicotine	Nicotrol
nicotine	Nicotrol NS
nicotine	nicotine
nicotine bitartrate	Nicotine Tartrate
nicotine polacrilex	Nicorelief
nicotine polacrilex	Nicorette
nicotine polacrilex	Quit 2
nicotine polacrilex	Quit 4
nicotine polacrilex	Stop Smoking Aid
nicotine polacrilex	Thrive Nicotine
nicotine polacrilex	nicotine (polacrilex)
varenicline tartrate	Chantix
varenicline tartrate	Chantix Continuing Month Box
varenicline tartrate	Chantix Continuing Month Pak
varenicline tartrate	Chantix Starting Month Box
varenicline tartrate	Chantix Starting Month Pak
varenicline tartrate	Tyrvaya
varenicline tartrate	varenicline
Continuous Glucose Monitoring	
sub-q insulin pump, continuous glucose monitoring system	Animas Vibe
Lipid-Lowering Medications	
alirocumab	Praluent Pen
alirocumab	Praluent Syringe
amlodipine besylate/atorvastatin calcium	Caduet
amlodipine besylate/atorvastatin calcium	amlodipine-atorvastatin
atorvastatin calcium	AtorvaliQ
atorvastatin calcium	Lipitor
atorvastatin calcium	atorvastatin
bempedoic acid	Nexletol
bempedoic acid/ezetimibe	Nexlizet

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

Generic Name	Brand Name
chia seed oil/alpha linolenic,linoleic,oleic acid/dha	Adult Omega Plus DHA
chia seed oil/linolenic acid/linoleic acid/oleic acid	chia seed oil-omega 3-6-9
cholestyramine (with sugar)	Questran
cholestyramine (with sugar)	cholestyramine (with sugar)
cholestyramine/aspartame	Cholestyramine Light
cholestyramine/aspartame	Prevalite
cholestyramine/aspartame	Questran Light
cholestyramine/aspartame	cholestyramine-aspartame
choline bitartrate	choline bitartrate
colesevelam HCl	WelChol
colesevelam HCl	colesevelam
colestipol HCl	Colestid
colestipol HCl	Colestid Flavored
colestipol HCl	colestipol
docosahexaenoic acid	Algal Omega-3 DHA
docosahexaenoic acid	Algal-900 DHA
docosahexaenoic acid	Atabex DHA 200
docosahexaenoic acid	DHA Algal-900
docosahexaenoic acid	DHA Prenatal
docosahexaenoic acid	DHA from Algae
docosahexaenoic acid	Expecta LIPIL
docosahexaenoic acid	Prenatal DHA
docosahexaenoic acid	docosahexaenoic acid
docosahexaenoic acid/eicosapentaenoic acid	Atabex DHA
docosahexaenoic acid/eicosapentaenoic acid	Fish Oil
evinacumab-dgnb	Evkeeza
evolocumab	Repatha Pushtronex
evolocumab	Repatha SureClick
evolocumab	Repatha Syringe
ezetimibe	Zetia
ezetimibe	ezetimibe
ezetimibe/atorvastatin calcium	Liptruzet
ezetimibe/atorvastatin calcium	ezetimibe-atorvastatin
ezetimibe/rosuvastatin calcium	Roszet
ezetimibe/rosuvastatin calcium	ezetimibe-rosuvastatin
ezetimibe/simvastatin	Vytorin 10-10
ezetimibe/simvastatin	Vytorin 10-20
ezetimibe/simvastatin	Vytorin 10-40
ezetimibe/simvastatin	Vytorin 10-80
ezetimibe/simvastatin	ezetimibe-simvastatin
fenofibrate	Fenoglide
fenofibrate	Lipofen
fenofibrate	Lofibra
fenofibrate	fenofibrate
fenofibrate nanocrystallized	Tricor
fenofibrate nanocrystallized	Triglide
fenofibrate nanocrystallized	fenofibrate nanocrystallized
fenofibrate,micronized	Antara

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

Generic Name	Brand Name
fenofibrate,micronized	Lofibra
fenofibrate,micronized	fenofibrate micronized
fenofibric acid	Fibricor
fenofibric acid	fenofibric acid
fenofibric acid (choline)	Trilipix
fenofibric acid (choline)	fenofibric acid (choline)
fish oil/borage oil/flaxseed oil/omega 3,6,9 combination no1	Omega 3-6-9
fish oil/borage oil/flaxseed oil/omega 3,6,9 combination no1	Omega 3-6-9 Complex
fish oil/borage oil/flaxseed oil/omega 3,6,9 combination no1	Triple Omega 3-6-9
fish oil/borage oil/flaxseed oil/omega 3,6,9 combination no1	fish,bora,flax oils-om3,6,9no1
fish oil/docosahexaenoic acid/eicosapentaenoic acid	fish oil-dha-epa
fish oil/flax oil/e.primrose/b.currant/bor oil/om 3,6,9 no.6	Fish, Flax andBorage Oil(Prim)
fish oil/omega-3 fatty acids/ascorbic acid/vitamin E	Coromega
fish oil/omega-3 fatty acids/vit E/folic acid/B6-B12	CardioVid PLUS
fish oil/safflower, flaxseed, borage oils/omega 3,6,9 no.2	Fish-Flax-Borage Oil
fish,flaxseed,eve primrose,blk currant,bor oils/om3,6,9 no.5	Omega 3-6-9 Fatty Acids
fish,flaxseed,eve primrose,blk currant,bor oils/om3,6,9 no.5	Super Omega-3
fluvastatin sodium	Lescol
fluvastatin sodium	Lescol XL
fluvastatin sodium	fluvastatin
gemfibrozil	Lopid
gemfibrozil	gemfibrozil
icosapent ethyl	Vascepa
icosapent ethyl	icosapent ethyl
inclisiran sodium	Leqvio
inositol	inositol
inositol/choline/vitamin B complex	Lipogen
krill oil	krill oil
krill oil/omega-3 fatty acids/dha/epa/phospholipids	MegaKrill
krill oil/omega-3 fatty acids/dha/epa/phospholipids	krill oil
krill oil/omega-3 fatty acids/dha/epa/phospholipids	krill-omega-3-dha-epa-lipids
krill oil/omega-3 fatty acids/dha/epa/phospholipids/astaxan	Antarctic Krill Oil
krill oil/omega-3 fatty acids/dha/epa/phospholipids/astaxan	Maximum Red Krill Omega-3
krill oil/omega-3 fatty acids/dha/epa/phospholipids/astaxan	MegaRed Omega-3 Krill Oil
krill oil/omega-3 fatty acids/dha/epa/phospholipids/astaxan	Omega-3 Krill Oil
krill oil/omega-3 fatty acids/dha/epa/phospholipids/astaxan	krill oil
krill oil/omega-3 fatty acids/dha/epa/phospholipids/astaxan	krill-om-3-dha-epa-phospho-ast
krill oil/omega-3 fatty acids/docosahexaenoic acid/epa	Fish Oil with Krill
krill oil/omega-3 fatty acids/docosahexaenoic acid/epa	krill oil-omega-3-dha-epa
krill oil/omega-3/dha/epa/omega-6/phospholipids/astaxanthin	Krill Oil (Omega 3 and 6)
lecithin	Gram-O-Leci
lecithin	lecithin
lecithin, soy	lecithin, soy
lomitapide mesylate	Juxtapid
lovastatin	Altoprev
lovastatin	Mevacor
lovastatin	lovastatin
methionine/inositol/choline/folic acid	Lipochol Plus

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

Generic Name	Brand Name
mipomersen sodium	Kynamro
niacin	Niacor
niacin	Niaspan Extended-Release
niacin	niacin
niacin/lovastatin	Advicor
niacin/simvastatin	Simcor
omega 3,5,6,7,9 combination no.1/salmon oil	Complete Omega
omega 3,6,9 combination no.7	Omega DHA
omega-3 acid ethyl esters	Lovaza
omega-3 acid ethyl esters	Triklo
omega-3 acid ethyl esters	omega-3 acid ethyl esters
omega-3 fatty acids	Fish Oil
omega-3 fatty acids	Fish Oil Concentrate
omega-3 fatty acids	MaxEPA
omega-3 fatty acids	Super Omega-3
omega-3 fatty acids	Super Twin EPA-DHA
omega-3 fatty acids	omega-3 fatty acids
omega-3 fatty acids/dha/epa/ala/vitamin D3	omega-3-dha-epa-ala-vit D3
omega-3 fatty acids/dha/epa/cod liver oil/vit A palm/vit D3	cod liver oil
omega-3 fatty acids/dha/epa/dpa/fish oil	Omega MonoPure
omega-3 fatty acids/dha/epa/dpa/fish oil	Omega-3 (with dpa)
omega-3 fatty acids/dha/epa/dpa/fish oil	Omega-3 2100
omega-3 fatty acids/dha/epa/fish oil/Lactobacillus casei	Restora
omega-3 fatty acids/dha/epa/fish oil/coenzyme Q-10	CoQmax Omega
omega-3 fatty acids/dha/epa/fish oil/krill oil	MegaRed Advanced 4-in-1
omega-3 fatty acids/dha/epa/fish oil/krill oil	omega 3-dha-epa-fish oil-krill
omega-3 fatty acids/dha/epa/fish oil/krill/lutein/zeaxanth	Megared Adv Total Body Refresh
omega-3 fatty acids/dha/epa/fish oil/krill/lutein/zeaxanth	Megared Advanced Total Body
omega-3 fatty acids/dha/epa/fish oil/vitamin D3	Fish Oil-Vit D3
omega-3 fatty acids/dha/epa/fish oil/vitamin D3	Omega-3 Plus Vitamin D3
omega-3 fatty acids/dha/epa/fish oil/vitamin D3	om-3-dha-epa-fish oil-vit D3
omega-3 fatty acids/dha/epa/other omega-3s/fish oil	Centrum ProNutrients Omega-3
omega-3 fatty acids/dha/epa/other omega-3s/fish oil	Fish Oil
omega-3 fatty acids/dha/epa/other omega-3s/fish oil	Ocean Blue Omega-3
omega-3 fatty acids/dha/epa/other omega-3s/fish oil	Omega 3
omega-3 fatty acids/dha/epa/other omega-3s/fish oil	Omega Essentials Basic
omega-3 fatty acids/dha/epa/other omega-3s/fish oil	Omega Power
omega-3 fatty acids/dha/epa/other omega-3s/fish oil	Vascazen
omega-3 fatty acids/dha/epa/other omega-3s/fish oil	omega-3s-dha-epa-fish oil
omega-3 fatty acids/dha/epa/other omega-3s/vitamin D3	Omega-3 Plus Vitamin D3
omega-3 fatty acids/docosahexaenoic acid/epa	MegaRed Plant-Omega-3
omega-3 fatty acids/docosahexaenoic acid/epa	Ovega-3
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Coromega
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	EPA-DHA 720
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Extreme Omega-3
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Fish Oil
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Fish Oil High Potency
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Luvira

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

Generic Name	Brand Name
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Omega 3 Fish Oil
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Omega MonoPure DHA EC
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Omega-3
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Omega-3 Fish Oil
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	OmegaPure 900-TG
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	OmegaPure PRM
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	OmegaPure-600 EC
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	OmegaPure-780 EC
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	OmegaPure-820
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	OmegaPure-900 EC
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Omera
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Sea-Omega 30
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Smart Heart Omega-3
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Super DHA Gems
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	TherOmega
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	TherOmega Sport
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	Ultra Omega-3
omega-3 fatty acids/docosahexaenoic acid/epa/fish oil	omega 3-dha-epa-fish oil
omega-3 fatty acids/eicosapentaenoic acid (epa)/fish oil	Omega MonoPure EPA EC
omega-3 fatty acids/fish oil	Fish Oil
omega-3 fatty acids/fish oil	Fish Oil Extra Strength
omega-3 fatty acids/fish oil	Fish Oil Pearls
omega-3 fatty acids/fish oil	Omega 3 Fish Oil
omega-3 fatty acids/fish oil	One-Per-Day Omega-3
omega-3 fatty acids/fish oil	omega-3 fatty acids-fish oil
omega-3 fatty acids/vitamin E	Fish Oil
omega-3 fatty acids/vitamin E	Super EPA
omega-3/dha/epa/marine phospholipids/astaxanthin/krill oil	LipiChol 540
omega-3/dha/epa/other omega-3s/fish oil/vitamin D3	Cardio Omega Benefits
omega-3/dha/epa/other omega-3s/fish oil/vitamin D3	Fish Oil-Vit D3
omega-3/dha/epa/other omega-3s/fish oil/vitamin D3	Ocean Blue Omega-3 Plus D3
omega-3/dha/epa/other omega-3s/fish oil/vitamin D3	Omega Essentials
omega-3/dha/epa/other omega-3s/fish oil/vitamin D3	Omega-3 Plus Vitamin D3
omega-3/dha/epa/other omega-3s/fish oil/vitamin D3	Superior Omega3 with Vit D
omega-3/dha/epa/other omega-3s/fish oil/vitamin D3	Vitamin-D + Omega-3
omega-3/dha/epa/other omega-3s/fish oil/vitamin D3	omega-3s-dha-epa-fish oil-D3
omega-3s/E/linoleic acid/alpha-linoleic/oleic acid/gla/lipase phosphatidylcholine	Omega 3-6-9 (with lipase)
phytosterol/cholecalciferol (vit D3)/fish oil	PhosphaLine
phytosterol/omega-3 fatty acids/dha/epa/fish oil	Cholesterol Relief
phytosterol/omega-3 fatty acids/dha/epa/fish oil	CardioSterol
phytosterol/omega-3 fatty acids/dha/epa/fish oil	Vayarol
phytosterol/omega-3 fatty acids/dha/epa/fish oil	phytosterol-om-3-dha-epa-fish
phytosterol/pantethine	CholestOff Complete
pitavastatin calcium	Livalo
pitavastatin calcium	pitavastatin calcium
pitavastatin magnesium	Zypitamag
policosanol combination no.3	Zyncol
pravastatin sodium	Pravachol

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

Generic Name	Brand Name
pravastatin sodium	pravastatin
racemethionine/inositol/choline/lysine/cyanocobalamin	Lipochol
rosuvastatin calcium	Crestor
rosuvastatin calcium	Ezallor Sprinkle
rosuvastatin calcium	rosuvastatin
salmon oil/omega-3 fatty acids	Salmon Oil-1000
salmon oil/omega-3 fatty acids	salmon oil-omega-3 fatty acids
simvastatin	FloLipid
simvastatin	Zocor
simvastatin	simvastatin
vitamin E	vitamin E
vitamin E acetate	vitamin E
Alpha Blockers	
clonidine	Catapres-TTS-1
clonidine	Catapres-TTS-2
clonidine	Catapres-TTS-3
clonidine	clonidine
clonidine HCl	Catapres
clonidine HCl	Nexiclon XR
clonidine HCl	clonidine HCl
clonidine HCl	clonidine HCl (bulk)
doxazosin mesylate	Cardura
doxazosin mesylate	Cardura XL
doxazosin mesylate	doxazosin
doxazosin mesylate	doxazosin mesylate (bulk)
guanabenz acetate	guanabenz (bulk)
guanethidine sulfate	guanethidine sulfate (bulk)
guanfacine HCl	Tenex
guanfacine HCl	guanfacine
methyldopa	methyldopa
methyldopate HCl	methyldopate
phentolamine mesylate	phentolamine
phentolamine mesylate	phentolamine mesylate (bulk)
prazosin HCl	Minipress
prazosin HCl	prazosin
prazosin HCl	prazosin HCl (bulk)
rauwolfia serpentina	rauwolfia serpentina (bulk)
reserpine	reserpine
reserpine	reserpine (bulk)
terazosin HCl	terazosin
tolazoline HCl	tolazoline (bulk)
Angiotensin II Receptor Blockers (ARBs)	
azilsartan medoxomil	Edarbi
candesartan cilexetil	Atacand
candesartan cilexetil	candesartan
eprosartan mesylate	Teveten
eprosartan mesylate	eprosartan
irbesartan	Avapro

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

Generic Name	Brand Name
irbesartan	irbesartan
losartan potassium	Cozaar
losartan potassium	losartan
losartan potassium	losartan potassium (bulk)
olmesartan medoxomil	Benicar
olmesartan medoxomil	olmesartan
telmisartan	Micardis
telmisartan	telmisartan
valsartan	Diovan
valsartan	valsartan
Angiotensin-Converting Enzyme (ACE) Inhibitors	
benazepril HCl	Lotensin
benazepril HCl	benazepril
benazepril HCl	benazepril HCl (bulk)
captopril	captopril
captopril	captopril (bulk)
enalapril maleate	Epaned
enalapril maleate	Vasotec
enalapril maleate	enalapril maleate
enalapril maleate	enalapril maleate (bulk)
enalaprilat dihydrate	enalaprilat
fosinopril sodium	fosinopril
lisinopril	Prinivil
lisinopril	Qbrelis
lisinopril	Zestril
lisinopril	lisinopril
lisinopril	lisinopril (bulk)
moexipril HCl	Univasc
moexipril HCl	moexipril
perindopril erbumine	Aceon
perindopril erbumine	perindopril erbumine
quinapril HCl	Accupril
quinapril HCl	quinapril
ramipril	Altace
ramipril	ramipril
trandolapril	Mavik
trandolapril	trandolapril
Beta Blockers	
acebutolol HCl	Sectral
acebutolol HCl	acebutolol
atenolol	Tenormin
atenolol	atenolol
betaxolol HCl	Kerlone
betaxolol HCl	betaxolol
bisoprolol fumarate	Zebeta
bisoprolol fumarate	bisoprolol fumarate
carvedilol	Coreg
carvedilol	carvedilol

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

Generic Name	Brand Name
carvedilol phosphate	Coreg CR
carvedilol phosphate	carvedilol phosphate
esmolol HCl	Brevibloc
esmolol HCl	esmolol
esmolol HCl in sodium chloride, iso-osmotic	Brevibloc in NaCl (iso-osm)
esmolol HCl in sodium chloride, iso-osmotic	esmolol in NaCl (iso-osm)
esmolol HCl in sterile water	esmolol in sterile water
labetalol HCl	Trandate
labetalol HCl	labetalol
labetalol HCl in dextrose, iso-osmotic	labetalol in dextrose, iso-osm
labetalol HCl in sodium chloride, iso-osmotic	labetalol in NaCl (iso-osmot)
labetalol in dextrose 5 % in water	labetalol in dextrose 5 %
metoprolol succinate	Kaspargo Sprinkle
metoprolol succinate	Toprol XL
metoprolol succinate	metoprolol succinate
metoprolol tartrate	Lopressor
metoprolol tartrate	metoprolol tartrate
nadolol	Corgard
nadolol	nadolol
nebivolol HCl	Bystolic
nebivolol HCl	nebivolol
penbutolol sulfate	Levatol
pindolol	pindolol
propranolol HCl	Hemangeol
propranolol HCl	Inderal LA
propranolol HCl	Inderal XL
propranolol HCl	InnoPran XL
propranolol HCl	propranolol
sotalol HCl	Betapace
sotalol HCl	Betapace AF
sotalol HCl	Sorine
sotalol HCl	Sotalol AF
sotalol HCl	Sotylize
sotalol HCl	sotalol
timolol maleate	timolol maleate
Calcium Channel Blockers	
amlodipine benzoate	Katerzia
amlodipine besylate	Norliqva
amlodipine besylate	Norvasc
amlodipine besylate	amlodipine
amlodipine besylate/celecoxib	Consensi
clevidipine butyrate	Cleviprex
diltiazem HCl	Cardizem
diltiazem HCl	Cardizem CD
diltiazem HCl	Cardizem LA
diltiazem HCl	Cartia XT
diltiazem HCl	DILT-CD
diltiazem HCl	DILT-XR

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

Generic Name	Brand Name
diltiazem HCl	Dilacor XR
diltiazem HCl	Diltia XT
diltiazem HCl	Diltzac ER
diltiazem HCl	Matzim LA
diltiazem HCl	Tazia XT
diltiazem HCl	Tiadylt ER
diltiazem HCl	Tiazac
diltiazem HCl	diltiazem HCl
diltiazem HCl in 0.9 % sodium chloride	diltiazem HCl in 0.9% NaCl
diltiazem HCl/dextrose 5 % in water	diltiazem in dextrose 5 %
felodipine	felodipine
isradipine	DynaCirc CR
isradipine	isradipine
levamlodipine maleate	Conjupri
levamlodipine maleate	levamlodipine
nicardipine HCl	Cardene IV
nicardipine HCl	Cardene SR
nicardipine HCl	nicardipine
nicardipine HCl in 0.9 % sodium chloride	nicardipine in 0.9 % sod chlor
nicardipine in 5 % dextrose in water	nicardipine in 5 % dextrose
nicardipine in dextrose, iso-osmotic	Cardene IV in dextrose
nicardipine in sodium chloride, iso-osmotic	Cardene IV in sodium chloride
nicardipine in sodium chloride, iso-osmotic	nicardipine in NaCl (iso-os)
nifedipine	Adalat CC
nifedipine	Afeditab CR
nifedipine	Nifediac CC
nifedipine	Nifedical XL
nifedipine	Procardia
nifedipine	Procardia XL
nifedipine	nifedipine
nimodipine	Nymalize
nimodipine	nimodipine
nisoldipine	Sular
nisoldipine	nisoldipine
verapamil HCl	Calan
verapamil HCl	Calan SR
verapamil HCl	Covera-HS
verapamil HCl	Isoptin SR
verapamil HCl	Verelan
verapamil HCl	Verelan PM
verapamil HCl	verapamil
Diuretics	
acetazolamide	Diamox Sequels
acetazolamide	acetazolamide
acetazolamide sodium	acetazolamide sodium
amiloride HCl	Midamor
amiloride HCl	amiloride
amiloride HCl/hydrochlorothiazide	amiloride-hydrochlorothiazide

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

Generic Name	Brand Name
ammonium chloride	ammonium chloride
bumetanide	bumetanide
chlorothiazide	Diuril
chlorothiazide	chlorothiazide
chlorothiazide sodium	Diuril IV
chlorothiazide sodium	chlorothiazide sodium
chlorthalidone	Thalitone
chlorthalidone	chlorthalidone
conivaptan HCl/dextrose 5 % in water	Vaprisol in 5 % dextrose
conivaptan HCl/dextrose 5 % in water	conivaptan in 5 % dextrose
dichlorphenamide	dichlorphenamide
eplerenone	Inspira
eplerenone	eplerenone
ethacrynate sodium	Sodium Edecrin
ethacrynate sodium	ethacrynate sodium
ethacrynic acid	Edecrin
ethacrynic acid	ethacrynic acid
finerenone	Kerendia
furosemide	Furoscix
furosemide	Lasix
furosemide	furosemide
furosemide in 0.9 % sodium chloride	furosemide in 0.9 % NaCl
furosemide/dextrose 5 % in water	furosemide in dextrose 5 %
hydrochlorothiazide	Microzide
hydrochlorothiazide	hydrochlorothiazide
indapamide	indapamide
mannitol	Osmitrol 10 %
mannitol	Osmitrol 15 %
mannitol	Osmitrol 20 %
mannitol	Osmitrol 5 %
mannitol	mannitol 10 %
mannitol	mannitol 20 %
mannitol	mannitol 25 %
mannitol	mannitol 5 %
mannitol/sorbitol	Lollipop Base
methazolamide	Neptazane
methazolamide	methazolamide
methyclothiazide	methyclothiazide
metolazone	Zaroxolyn
metolazone	metolazone
pamabrom	Diuretic Softgels
pamabrom	Diurex Max
spironolactone	Aldactone
spironolactone	CaroSpir
spironolactone	spironolactone
spironolactone/hydrochlorothiazide	Aldactazide
spironolactone/hydrochlorothiazide	spironolacton-hydrochlorothiaz
tolvaptan	Samsca

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

Generic Name	Brand Name
tolvaptan	tolvaptan
toremide	Demadex
toremide	Soanz
toremide	toremide
triamterene	Dyrenium
triamterene	triamterene
triamterene/hydrochlorothiazide	Dyazide
triamterene/hydrochlorothiazide	Maxzide
triamterene/hydrochlorothiazide	Maxzide-25mg
triamterene/hydrochlorothiazide	triamterene-hydrochlorothiazid
urea	Ure-Na
urea	UreaPro
Peripheral Vasodilators	
buflomedil HCl	buflomedil (bulk)
cyclandelate	cyclandelate (bulk)
isoxsuprine HCl	isoxsuprine
isoxsuprine HCl	isoxsuprine HCl (bulk)
nylidrin HCl	nylidrin (bulk)
Renin Inhibitors	
aliskiren hemifumarate	Tekturna
aliskiren hemifumarate	aliskiren
Other Antihypertensives	
diazoxide	diazoxide (bulk)
fenoldopam mesylate	Corlopam
hydralazine HCl	hydralazine
hydralazine HCl	hydralazine HCl (bulk)
mecamylamine HCl	Vecamyl
mecamylamine HCl	mecamylamine HCl (bulk)
nitroprusside sodium	sodium nitroprusside
nitroprusside sodium in 0.9 % sodium chloride	Nipride RTU
nitroprusside sodium in 0.9 % sodium chloride	nitroprusside in 0.9 % NaCl
Combination Antihypertensives	
aliskiren hemifumarate/amlodipine besylate	Tekamlo
aliskiren hemifumarate/amlodipine/hydrochlorothiazide	Amturnide
aliskiren hemifumarate/hydrochlorothiazide	Tekturna HCT
aliskiren/valsartan	Valturna
amlodipine besylate/benazepril HCl	Lotrel
amlodipine besylate/benazepril HCl	amlodipine-benazepril
amlodipine besylate/olmesartan medoxomil	Azor
amlodipine besylate/olmesartan medoxomil	amlodipine-olmesartan
amlodipine besylate/valsartan	Exforge
amlodipine besylate/valsartan	amlodipine-valsartan
amlodipine besylate/valsartan/hydrochlorothiazide	Exforge HCT
amlodipine besylate/valsartan/hydrochlorothiazide	amlodipine-valsartan-hcthiiazid
atenolol/chlorthalidone	Tenoretic 100
atenolol/chlorthalidone	Tenoretic 50
atenolol/chlorthalidone	atenolol-chlorthalidone
azilsartan medoxomil/chlorthalidone	Edarbyclor

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

Generic Name	Brand Name
benazepril HCl/hydrochlorothiazide	Lotensin HCT
benazepril HCl/hydrochlorothiazide	benazepril-hydrochlorothiazide
bisoprolol fumarate/hydrochlorothiazide	Ziac
bisoprolol fumarate/hydrochlorothiazide	bisoprolol-hydrochlorothiazide
candesartan cilexetil/hydrochlorothiazide	Atacand HCT
candesartan cilexetil/hydrochlorothiazide	candesartan-hydrochlorothiazid
captopril/hydrochlorothiazide	captopril-hydrochlorothiazide
clonidine HCl/chlorthalidone	Clorpres
enalapril maleate/hydrochlorothiazide	Vaseretic
enalapril maleate/hydrochlorothiazide	enalapril-hydrochlorothiazide
eprosartan mesylate/hydrochlorothiazide	Teveten HCT
fosinopril sodium/hydrochlorothiazide	fosinopril-hydrochlorothiazide
irbesartan/hydrochlorothiazide	Avalide
irbesartan/hydrochlorothiazide	irbesartan-hydrochlorothiazide
isosorbide dinitrate/hydralazine HCl	BiDil
isosorbide dinitrate/hydralazine HCl	isosorbide-hydralazine
lisinopril/hydrochlorothiazide	Prinzide
lisinopril/hydrochlorothiazide	Zestoretic
lisinopril/hydrochlorothiazide	lisinopril-hydrochlorothiazide
losartan potassium/hydrochlorothiazide	Hyzaar
losartan potassium/hydrochlorothiazide	losartan-hydrochlorothiazide
methyldopa/hydrochlorothiazide	methyldopa-hydrochlorothiazide
metoprolol succinate/hydrochlorothiazide	Dutoprol
metoprolol succinate/hydrochlorothiazide	metoprolol su-hydrochlorothiaz
metoprolol tartrate/hydrochlorothiazide	Lopressor HCT
metoprolol tartrate/hydrochlorothiazide	metoprolol ta-hydrochlorothiaz
moexipril HCl/hydrochlorothiazide	Uniretic
moexipril HCl/hydrochlorothiazide	moexipril-hydrochlorothiazide
olmesartan medoxomil/amlodipine	
besylate/hydrochlorothiazide	Tribenzor
olmesartan medoxomil/amlodipine	
besylate/hydrochlorothiazide	olmesartan-amlodipin-hcthiazid
olmesartan medoxomil/hydrochlorothiazide	Benicar HCT
olmesartan medoxomil/hydrochlorothiazide	olmesartan-hydrochlorothiazide
perindopril arginine/amlodipine besylate	Prestalia
propranolol HCl/hydrochlorothiazide	propranolol-hydrochlorothiazid
quinapril HCl/hydrochlorothiazide	Accuretic
quinapril HCl/hydrochlorothiazide	quinapril-hydrochlorothiazide
sacubitril/valsartan	Entresto
sacubitril/valsartan	Entresto Sprinkle
telmisartan/amlodipine besylate	telmisartan-amlodipine
telmisartan/hydrochlorothiazide	Micardis HCT
telmisartan/hydrochlorothiazide	telmisartan-hydrochlorothiazid
trandolapril/verapamil HCl	Tarka
trandolapril/verapamil HCl	trandolapril-verapamil
treprostinil/nebulizer accessories	Tyvaso Refill Kit
treprostinil/nebulizer and accessories	Tyvaso Institutional Start Kit
treprostinil/nebulizer and accessories	Tyvaso Starter Kit

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

Generic Name	Brand Name
valsartan/hydrochlorothiazide	Diovan HCT
valsartan/hydrochlorothiazide	valsartan-hydrochlorothiazide

Appendix I. Specifications Defining Parameters Used in this Request

This request was executed on the Cohort Identification and Descriptive Analysis (CIDA) tool [version 14.0.1] to compare rates of diabetic ketoacidosis (DKA) among patients with Type 1 Diabetes, by chronic kidney disease (CKD) stage in the Sentinel Distributed Database (SDD).

Query Period: March 1, 2013 - Most recently available data (February 29, 2024)
Coverage Requirement: Medical & Drug Coverage
Pre-index enrollment requirement: 365 days
Post-index enrollment requirement: 0 days
Enrollment gap: 45 days
Restrictions: M/F sex
Age groups: <12, 12-18, 19-24, 25-44, 45-64, ≥65 years
Stratifications: n/a
Figures Requested: KM curves (will output follow-up time data)
Envelope macro: Reclassify encounters during inpatient stay as inpatient
Freeze data: Y

	Comparison 1		Comparison 2	
Logic	CKD Stage 3 v. CKD Stage 1/2		CKD Stage 4/5 v. CKD Stage 1/2	
Drug/Exposure				
Index Exposure/Comparator	Short/rapid-acting insulin	Short/rapid-acting insulin	Short/rapid-acting insulin	Short/rapid-acting insulin
Cohort Definition	First valid exposure episodes during query period		First valid exposure episodes during query period	
Incidence Exposure washout period	0		0	
Incident w/ Respect to:	n/a	n/a	n/a	n/a
Stockpiling	Default algorithm		Default algorithm	
Build Episodes on Point Exposure (Y/N)	No		No	
Treatment Episode Gap	10 days		10 days	
Exposure episode extension	10 days		10 days	
Create Baseline Table (Y/N)	Yes		Yes	

Appendix I. Specifications Defining Parameters Used in this Request		
	Comparison 1	Comparison 2
Logic	CKD Stage 3 v. CKD Stage 1/2	CKD Stage 4/5 v. CKD Stage 1/2
Inclusion/Exclusion Criteria		
Inclusion/Exclusion group	Type 1 Diabetes (>50% of all diabetes codes are T1DM) [PLUS]	Type 1 Diabetes (>50% of all diabetes codes are T1DM) [PLUS]
Type of criteria	Inclusion	Inclusion
Evaluation Period Start	-365	-365
Evaluation Period End	-5	-5
Care Setting/PDX	Any care setting	Any care setting
Principal Diagnosis Position	n/a	n/a
Exclude evidence of days supply if inclusion/exclusion evaluation period includes dispensings	No	No
Number of instances the criteria should be found in the evaluation period	1	1
	AND NOT	AND NOT
Inclusion/Exclusion group	Non-insulin antidiabetics (except metformin)	Non-insulin antidiabetics (except metformin)
Type of criteria	Exclusion	Exclusion
Evaluation Period Start	-365	-365
Evaluation Period End	-1	-1
Care Setting/PDX	n/a	n/a
Principal Diagnosis Position	n/a	n/a
Exclude evidence of days supply if inclusion/exclusion evaluation period includes dispensings	No	No
Number of instances the criteria should be found in the evaluation period	1	1

Appendix I. Specifications Defining Parameters Used in this Request		
	Comparison 1	Comparison 2
Logic	CKD Stage 3 v. CKD Stage 1/2	CKD Stage 4/5 v. CKD Stage 1/2
At Risk Time		
Minimum exposure episode duration	1	1
Maximum exposure episode duration	365	365
End At-Risk Period at Evidence of	*Death; *DP end date; *Query end date; *Occurrence of a DKA event; *End of exposure episode (366 days post-exposure) *Switch to CKD stage 4 or 5	*Death; *DP end date; *Query end date; *Occurrence of a DKA event; *End of exposure episode (366 days post-exposure) *Switch to CKD stage 3 or 4 or 5
Blackout Period	1	1
Event/Outcome		
Event/Outcome	Diabetic ketoacidosis	Diabetic ketoacidosis
Incident event washout period	0	0
Care Setting	*Inpatient hospital stay; *Emergency department encounter	*Inpatient hospital stay; *Emergency department encounter
Principal Diagnosis Position	n/a	n/a
Exclude evidence of days supply if event washout includes dispensings	n/a	n/a
Event de-duplication	De-duplicates occurrences of the same event code and code type on the same day	De-duplicates occurrences of the same event code and code type on the same day
Propensity Score Model Parameters		
PS Model Label	ckd12ckd3	ckd12ckd45
Covariates	See Appendix J	See Appendix J
Firth Logistic Intercept Correct (FLIC) Method	No	No
High-dimensional Propensity Score	No	No

Appendix I. Specifications Defining Parameters Used in this Request		
	Comparison 1	Comparison 2
Logic	CKD Stage 3 v. CKD Stage 1/2	CKD Stage 4/5 v. CKD Stage 1/2
Output Kaplan Meier Plot	Yes	Yes
A. PS Matching		
Ratio Type	Fixed ratio matching	Fixed ratio matching
Matching Ratio	1:1	1:1
Matching Caliper Settings	0.05	0.05
Analysis Type	Conditional and unconditional	Conditional and unconditional
Subgroup Analyses		
Stratifying variable	Sex	Sex
Subgroup Categories	Male, Female	Male, Female
Firth Logistic Intercept Correct (FLIC) Method	No	No
Re-estimate Propensity Score within subgroup level	Yes	Yes
Should subgroup re-matching be restricted to the matched population	Yes	Yes
Subgroup Analyses		
Stratifying variable	Age	Age
Subgroup Categories	0-11, 12-18, 19-24, 25-44, 45-64, 65+ years	0-11, 12-18, 19-24, 25-44, 45-64, 65+ years
Firth Logistic Intercept Correct (FLIC) Method	No	No
Re-estimate Propensity Score within subgroup level	Yes	Yes
Should subgroup re-matching be restricted to the matched population	Yes	Yes

Appendix I. Specifications Defining Parameters Used in this Request	
	Comparison 3
Logic	CKD Stage 3 or Stage 4/5 v. CKD Stage 1/2
Drug/Exposure	
Index Exposure/Comparator	Short/rapid-acting insulin Short/rapid-acting insulin
Cohort Definition	First valid exposure episodes during query period
Incidence Exposure washout period	0
Incident w/ Respect to:	n/a n/a
Stockpiling	Default algorithm
Build Episodes on Point Exposure (Y/N)	No
Treatment Episode Gap	10 days
Exposure episode extension	10 days
Create Baseline Table (Y/N)	Yes
Inclusion/Exclusion Criteria	
Inclusion/Exclusion group	Type 1 Diabetes (>50% of all diabetes codes are T1DM) [PLUS]
Type of criteria	Inclusion
Evaluation Period Start	-365
Evaluation Period End	-5
Care Setting/PDX	Any care setting
Principal Diagnosis Position	n/a
Exclude evidence of days supply if inclusion/exclusion evaluation period includes dispensings	No
Number of instances the criteria should be found in the evaluation period	1

Appendix I. Specifications Defining Parameters Used in this Request	
	Comparison 3
Logic	CKD Stage 3 or Stage 4/5 v. CKD Stage 1/2
	AND NOT
Inclusion/Exclusion group	Non-insulin antidiabetics (except metformin)
Type of criteria	Exclusion
Evaluation Period Start	-365
Evaluation Period End	-1
Care Setting/PDX	n/a
Principal Diagnosis Position	n/a
Exclude evidence of days supply if inclusion/exclusion evaluation period includes dispensings	No
Number of instances the criteria should be found in the evaluation period	1
At Risk Time	
Minimum exposure episode duration	1
Maximum exposure episode duration	365
End At-Risk Period at Evidence of	<ul style="list-style-type: none"> *Death; *DP end date; *Query end date; *Occurrence of a DKA event; *End of exposure episode (366 days post-exposure)
Blackout Period	<ul style="list-style-type: none"> *Death; *DP end date; *Query end date; *Occurrence of a DKA event; *End of exposure episode (366 days post-exposure) *Switch to CKD stage 3 or 4 or 5
Event/Outcome	
Event/Outcome	Diabetic ketoacidosis
Incident event washout period	0
Care Setting	<ul style="list-style-type: none"> *Inpatient hospital stay; *Emergency department encounter
Principal Diagnosis Position	n/a
Exclude evidence of days supply if event washout includes dispensings	n/a
Event de-duplication	De-duplicates occurrences of the same event code and code type on the same day
Propensity Score Model Parameters	
PS Model Label	ckd12ckd345

Appendix I. Specifications Defining Parameters Used in this Request	
	Comparison 3
Logic	CKD Stage 3 or Stage 4/5 v. CKD Stage 1/2
Covariates	See Appendix J
Firth Logistic Intercept Correct (FLIC) Method	No
High-dimensional Propensity Score	No
Output Kaplan Meier Plot	Yes
A. PS Matching	
Ratio Type	Fixed ratio matching
Matching Ratio	1:1
Matching Caliper Settings	0.05
Analysis Type	Conditional and unconditional
Subgroup Analyses	
Stratifying variable	Sex
Subgroup Categories	Male, Female
Firth Logistic Intercept Correct (FLIC) Method	No
Re-estimate Propensity Score within subgroup level	Yes
Should subgroup re-matching be restricted to the matched population	Yes
Subgroup Analyses	
Stratifying variable	Age
Subgroup Categories	0-11, 12-18, 19-24, 25-44, 45-64, 65+ years
Firth Logistic Intercept Correct (FLIC) Method	No
Re-estimate Propensity Score within subgroup level	Yes
Should subgroup re-matching be restricted to the matched population	Yes
International Classification of Diseases, Ninth Revision (ICD-9), International Classification of Diseases, Tenth Revision (ICD-10), Healthcare Common Procedure Coding System (HCPCS), and CPT (Current Procedural Terminology) codes are provided by Optum360. National Drug Codes (NDCs) are checked against FirstDataBank's FDBMedKnowledge®. n/a: Not applicable	

Appendix J. Specifications Defining Covariate Parameters Used in this Request

Baseline Characteristics							
Covariate Name	Include in Baseline Table	Include in Propensity Score Model	Continuous or Categorical	Covariate Number	Combo Logic	Care setting	Principal Diagnosis Position
Demographic Criteria							
Age	Y	Y	Continuous	n/a			
Sex	Y	Y	Categorical	n/a			
Race	Y	Y	Categorical	n/a			
Hispanic	Y	Y	Categorical	n/a			
Year	Y	Y	Categorical	n/a			
Healthcare Utilization/Risk Scores							
Adapted Diabetes Complications Severity Index (aDCSI)	Y	Y	Continuous	n/a			
Combined comorbidity score	Y	Y	Continuous	n/a			
Healthcare utilization metrics (numIP, numED, numAV, numOA, numIS, numgeneric, numrx, numclass)	Y	Y	Continuous	n/a			
Baseline Health Characteristics							
History of diabetic ketoacidosis (DKA)	Y	Y	Categorical	1		IP, ED	n/a
Overweight/obesity	Y	Y	Categorical	2		Any	n/a
Hypertension	Y	Y	Categorical	3		Any	n/a
Hyperlipidemia	Y	Y	Categorical	4		Any	n/a
Tobacco smoking	Y	Y	Categorical	5		n/a	n/a
Alcohol use	Y	Y	Categorical	6		n/a	n/a
Short/rapid-acting insulin	Y	Y	Categorical	7		n/a	n/a
Long/intermediate-acting insulin	Y	Y	Categorical	8		n/a	n/a
Combination insulin	Y	Y	Categorical	9		n/a	n/a
Insulin pump	Y	Y	Categorical	10		n/a	n/a

Appendix J. Specifications Defining Covariate Parameters Used in this Request

Baseline Characteristics							
Covariate Name	Include in Baseline Table	Include in Propensity Score Model	Continuous or Categorical	Covariate Number	Combo Logic	Care setting	Principal Diagnosis Position
Metformin	Y	Y	Categorical	11		n/a	n/a
Continuous glucose monitoring	Y	Y	Categorical	12		n/a	n/a
Lipid-lowering medications	Y	Y	Categorical	13		n/a	n/a
Anti-Hypertensive Drugs (by Class)							
Alpha Blockers	Y	Y	Categorical	14		n/a	n/a
Angiotensin II Receptor Blockers (ARBs)	Y	Y	Categorical	15		n/a	n/a
Angiotensin-Converting Enzyme Inhibitors (ACEi)	Y	Y	Categorical	16		n/a	n/a
Beta Blockers	Y	Y	Categorical	17		n/a	n/a
Calcium Channel Blockers	Y	Y	Categorical	18		n/a	n/a
Diuretics	Y	Y	Categorical	19		n/a	n/a
Peripheral Vasodilators	Y	Y	Categorical	20		n/a	n/a
Renin Inhibitors	Y	Y	Categorical	21		n/a	n/a
Other Anti-Hypertensives	Y	Y	Categorical	22		n/a	n/a
Combination Anti-Hypertensives	Y	Y	Categorical	23		n/a	n/a
Chronic Kidney Disease Algorithm Components Pre-Index							
CKD Stage 4 or 5 Diagnosis Code	N	N	Categorical	24		n/a	n/a
Dialysis	N	N	Categorical	25		n/a	n/a
CKD Stage 3 Diagnosis Code	N	N	Categorical	26		n/a	n/a
Any CKD code at least 3 times	N	N	Categorical	27		n/a	n/a
Renal Failure or CKD	N	N	Categorical	28		n/a	n/a
CKD treatment	N	N	Categorical	29		n/a	n/a

Appendix J. Specifications Defining Covariate Parameters Used in this Request

Baseline Characteristics							
Covariate Name	Include in Baseline Table	Include in Propensity Score Model	Continuous or Categorical	Covariate Number	Combo Logic	Care setting	Principal Diagnosis Position
Chronic Kidney Disease Algorithm Components Post-Index							
CKD Stage 4 or 5 Diagnosis Code	N	N	Categorical	30		n/a	n/a
Dialysis	N	N	Categorical	31		n/a	n/a
CKD Stage 3 Diagnosis Code	N	N	Categorical	32		n/a	n/a
Any CKD code at least 3 times	N	N	Categorical	33		n/a	n/a
Renal Failure or CKD	N	N	Categorical	34		n/a	n/a
CKD treatment	N	N	Categorical	35		n/a	n/a
Chronic Kidney Disease Algorithm Implementation Pre-Index							
CKD Stage 4 or 5	N	N	Categorical	36	24 or 25	n/a	n/a
CKD Stage 3	N	N	Categorical	37	(26 or 27 or (28 and 29)) and not 36	n/a	n/a
CKD Stage 1 or 2	N	N	Categorical	38	not (36 or 37)	n/a	n/a
CKD Stage 3 or 4 or 5	N	N	Categorical	39	24 or 25 or 26 or 27 or (28 and 29)	n/a	n/a
Chronic Kidney Disease Algorithm Implementation Post-Index							
CKD Stage 3 component: Renal failure + treatment	N	N	Categorical	40	34 and 35	n/a	n/a
CKD Stage 4 or 5	N	N	Categorical	41	30 or 31	n/a	n/a
CKD Stage 3 or 4 or 5	N	N	Categorical	42	30 or 31 or 32 or 33 or 40	n/a	n/a

Appendix J. Specifications Defining Covariate Parameters Used in this Request

Baseline Characteristics

Covariate Name	Covariate Evaluation Period Start	Covariate Evaluation Period End	Number of Instances the Covariate Should be Found in Evaluation Period	Lookback Period Date Only
Demographic Criteria				
Age	0	0		
Sex	0	0		
Race	0	0		
Hispanic	0	0		
Year	0	0		
Healthcare Utilization/Risk Scores				
aDCSI	-365	0		
Combined comorbidity score	-365	0		
Healthcare utilization metrics (numIP, numED, numAV, numOA, numIS, numgeneric, numrx, numclass)	-365	0		
Baseline Health Characteristics				
History of DKA	-365	-1	1	N: search for a date or an interval
Overweight/obesity	-365	-1	1	N: search for a date or an interval
Hypertension	-365	-1	1	N: search for a date or an interval
Hyperlipidemia	-365	-1	1	N: search for a date or an interval
Tobacco smoking	-365	-1	1	N: search for a date or an interval
Alcohol use	-365	-1	1	N: search for a date or an interval
Short/rapid-acting insulin	-365	-1	1	N: search for a date or an interval
Long/intermediate-acting insulin	-365	-1	1	N: search for a date or an interval
Combination insulin	-365	-1	1	N: search for a date or an interval
Insulin pump	-365	-1	1	N: search for a date or an interval

Appendix J. Specifications Defining Covariate Parameters Used in this Request

Baseline Characteristics

Covariate Name	Covariate Evaluation Period Start	Covariate Evaluation Period End	Number of Instances the Covariate Should be Found in Evaluation Period	Lookback Period Date Only
Metformin	-365	-1	1	N: search for a date or an interval
Continuous glucose monitoring	-365	-1	1	N: search for a date or an interval
Lipid-lowering medications	-365	-1	1	N: search for a date or an interval
Anti-Hypertensive Drugs (by Class)				
Alpha blockers	-365	-1	1	N: search for a date or an interval
ARBs	-365	-1	1	N: search for a date or an interval
ACEi	-365	-1	1	N: search for a date or an interval
Beta Blockers	-365	-1	1	N: search for a date or an interval
Calcium Channel Blockers	-365	-1	1	N: search for a date or an interval
Diuretics	-365	-1	1	N: search for a date or an interval
Peripheral Vasodilators	-365	-1	1	N: search for a date or an interval
Renin Inhibitors	-365	-1	1	N: search for a date or an interval
Other Anti-Hypertensives	-365	-1	1	N: search for a date or an interval
Combination Anti-Hypertensives	-365	-1	1	N: search for a date or an interval
Chronic Kidney Disease Algorithm Components Pre-Index				
CKD Stage 4 or 5 Diagnosis Code	-365	0	1	N: search for a date or an interval
Dialysis	-365	0	1	N: search for a date or an interval
CKD Stage 3 Diagnosis Code	-365	0	1	N: search for a date or an interval
Any CKD code at least 3 times	-365	0	3	N: search for a date or an interval
Renal Failure or CKD	-365	0	1	N: search for a date or an interval
CKD treatment	-365	0	1	N: search for a date or an interval

Appendix J. Specifications Defining Covariate Parameters Used in this Request

Baseline Characteristics

Covariate Name	Covariate Evaluation Period Start	Covariate Evaluation Period End	Number of Instances the Covariate Should be Found	
			in Evaluation Period	Lookback Period Date Only
Chronic Kidney Disease Algorithm Components Post-Index				
CKD Stage 4 or 5 Diagnosis Code	1	365	1	N: search for a date or an interval
Dialysis	1	365	1	N: search for a date or an interval
CKD Stage 3 Diagnosis Code	1	365	1	N: search for a date or an interval
Any CKD code at least 3 times	1	365	3	N: search for a date or an interval
Renal Failure or CKD	1	365	1	N: search for a date or an interval
CKD treatment	1	365	1	Y: Dispensing date only
Chronic Kidney Disease Algorithm Implementation Pre-Index				
CKD Stage 4 or 5			1	N: search for a date or an interval
CKD Stage 3			1	N: search for a date or an interval
CKD Stage 1 or 2			1	N: search for a date or an interval
CKD Stage 3 or 4 or 5			1	N: search for a date or an interval
Chronic Kidney Disease Algorithm Implementation Post-Index				
CKD Stage 3 component: Renal failure + treatment			1	N: search for a date or an interval
CKD Stage 4 or 5			1	N: search for a date or an interval
CKD Stage 3 or 4 or 5			1	N: search for a date or an interval

n/a: Not applicable

IP: Inpatient hospital stay; ED: emergency department encounter

Appendix K. Specifications Defining Risk Score and Utilization Parameters Used in this Request

Risk Score

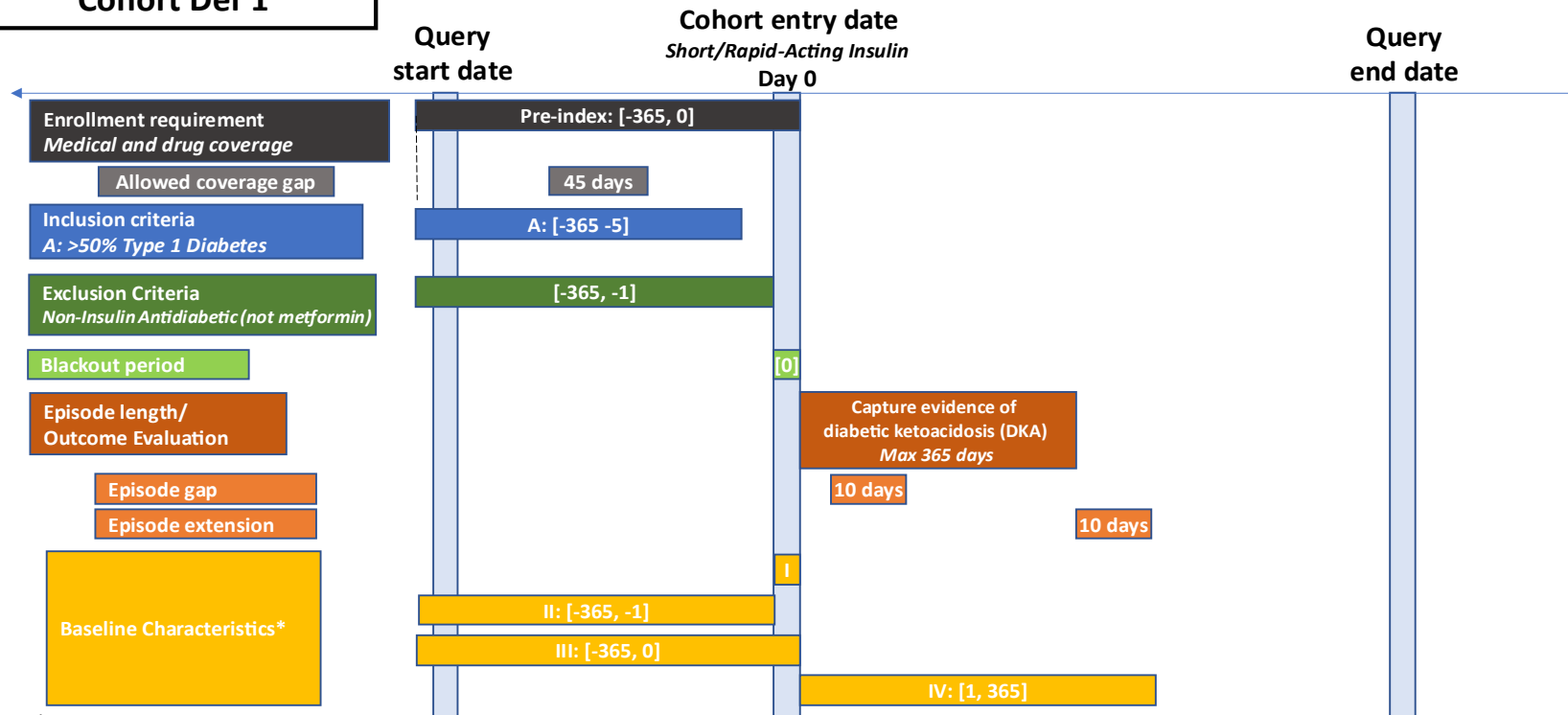
Risk Score	Evaluation Period Start	Evaluation Period End	Risk Score Categories
CCI: Combined comorbidity index ADCSI: Adapted Diabetes Complications Severity Index	-365	0	n/a

Utilization

Medical Utilization Evaluation Period Start	Medical Utilization Evaluation Period End	Drug Utilization Evaluation Period Start	Drug Utilization Evaluation Period End
-365	0	-365	0

Appendix L. Design Diagram of Cohort Entry Requirements, Index Exposure, and Event Outcome Assessment

**Type 2 design diagram:
Cohort Def 1**



*Baseline Characteristics
 Window I: Demographic criteria (age, sex, race/ethnicity, year)
 Window II: History of DKA, Antidiabetic treatments, chronic health conditions
 Window III: Chronic Kidney Disease Stage evaluation for cohort definition *Plus feature*
 Window IV: Chronic Kidney Disease Stage evaluation for episode censoring *Plus feature*